Male-Female Wage Differentials

in the Segmented Labor Markets of Korea*

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I. Introduction

This paper analyzes the male-female wage differentials in Korea and suggests some policy implications to reduce serious sexual wage inequality.

Since Korean labor market is segmented into high-wage firms(or sectors) and low-wage firms(or sectors) (Cho, 1991) and the women's employment problem such as low productivities and low wages is found to be intimately related to their being employed in low-wage firms(or sectors) (Bai and Cho, 1991), we apply Oaxaca's method separately to the sample of workers employed in high-wage firms and the sample of those in low-wage firms.

The distinguished feature of this paper is that we explicitly take into consideration the industrial dualism and the subsequent labor market segmentation and then we estimate which part of the sex-wage disparities is due to inequality of treatment and which part is due to dissimilarities of characteristics.

Our empirical result will show that the elimination of wage discrimination in Korea could result in an increase of the ratio of average female wage to average male wage to approximately 80% from the current ratio of 51% as of 1989. In addition, we highlight the importance of the industrial policy to reduce sexual discrimination in labor market. This type of policy recommendation can not be found in the recent studies of Kim(1991), Park(1991), and Lee and Yoo(1991) drawing on the traditional human capital approach.

II. Male-Female Wage Differentials in the Segmented Labor Markets of Korea

1. Male-Female Wage Differentials: Comparative Perspective

According to the Occupational Wage Survey, the wage index of female workers, when

the wage of male workers is set to be equal to 100, was marked by 45.4 in 1971 and 9 in 1976, which reversed its course into the slowly increasing trend as it registered 47.8 in 1980 and 54.1 in 1989. But in retrospect we cannot say that there has been improvement of female wages in a large scale.

The 1989/1990 ILO Yearbook of Labor Statistics points out that there are only two countries Japan and Korea in which the wages received by female workers are just one half of those of male workers.

⟨Table 1⟩ International Comparison of Female-Male Wage Differentials by Sex in Manufacturing

(% : male = 100)

Nation[1]	Ratio	Nation[1]	Ratio	City[2]	Ratio
Kenya	68.0(88)	Sri Lanka	68.9(88)	Seoul	56.7(91)
El Salvador	90.4(87)	Japan	41.7(89)	Kuala Lumpur	70.3(91)
Hong Kong	73.2(89)	Finland	76.8(89)	Bangkok	74.9(91)
Korea	50.5(89)	West Germany	72.8(89)	Manila	79.6(91)
Denmark	84.6(89)	Ireland	68.9(88)		
Norway	85.5(89)	Greece	78.0(88)		
Netherland	74.8(88)	Czechoslovakia	67.9(88)		
Switzerland	67.5(88)	New Zealand	75.3(89)		
United Kingdom	68.4(89)	Singapore	57.5(89)		
Australia	79.6(88)	France	79.2(87)		
		Sweden	89.5(89)		

Note: The figures in parentheses are in A.D.

Source: 1) ILO, Yearbook of Labour Statistics, 1989/90

2) ILO-ARTEP Survey in 1991

The female workers in Japan receive the wage amounting to 41.7% of the wage of male workers, and the comparable figure in Korea barely exceeds one half, maintaining 50.5% level. In the remaining countries covered by the ILO Yearbook of Labor Statistics the female workers are paid at least two thirds of wages of male workers with a majority being 3/4 or 4/5 of wages received by male workers.

Taking the hourly wages of ILO-ARTEP investigation in 1991 as a criterion, the wages of female workers are 79.6, 74.9, 70.3, and 56.7 percent of those of male workers in Manila, Bangkok, Kuala Lumpur, and Seoul, respectively. It indicates that the male/female wage differentials are the severest in Korea. We may say that the male/female wage differentials in Korea is one of the severest in the world and Korean labor market is

haracterized by predominance of men over women.

2. Factors Accounting for Wage Differentials Between Men and Women

(1) Heavy Concentration of Female Workers on Low-Wage Firms

Cho(1991) analyzed empirically that the low-wage firms are likely to be small-sized and are likely to have low value-added productivity per worker. And those firms are likely to be in labor-intensive industries, in more competitive industries, in highly export-oriented industries and in local areas. On the other hand, the large-scale firm having a high value-added producticity per worker is more likery to be the high-wage firm. Firms in more concentrated and capital-intensive industries and in Seoul area are more likery to be the high-wage firms.

According to one of Cho's findings, the majority of female workers in Korea are found to be employed in low-wage firms. Cho defined low-wage as two-thirds of the median wage received by male workers in manufacturing industry or less. If more than or equal to 50 percent of employees out of total employees in a given firm are low-wage paid workers, the firm will be classified as low-wage firm. Otherwise the firm will be classified as high-wage firm. Cho found that the majority of female workers in Korea were employed in low-wage firms. For example 67.4% of female workers are employed in low-wage firms in 1989, whereas only 33.1% of male workers are employed in low-wage firms in the same year.

One can conjecture that Korean labor market may systematically differentiate the job rewards achieved by comparable individuals and that women's low pay may be primarily determined by the labor demand-side characteristics. This will be discussed in section 4 of this Chapter.

We expect that an intense competition for securing the employment in the high-wage firms produces labor queues in which the prospective employees are waiting in the long line to get hired in the high-wage firms. Taking advantage of this kind of situation, the high-wage firms often show preference of male workers over female workers, as it has been customary practices that only male workers are hired through regular job opening

advertisement while female workers get their jobs through personal contacts, such as recommendations from friends and relatives.

This type of discriminatory action may be called 'discrimination at the port of entry.' It tends to produce unequal on-the-job training opportunities. Since a large fraction of human capital stock possessed by individuals are acquired from learning on the job or on-the-job training, discrimination at the port of entry will generate unequal on-the-job training (or learning) opportunities over individuals' working lives and subsequent wage inequalities between men and women.

## (2) Early Retirement from Labor Market

The wage payment system in Korea is characterized by so-called seniority wage system in which the level of wage is paid in accordance with the number of years being employed. Under this wage payment system, the female workers are given to disadvantageous positions because they tend to quit their jobs for marriage, childbirth or childcare. Therefore, the short job tenure would limit the prospects of the wage increase for female workers, even though there are little differentials in the wages paid to the male and female workers aged between 17 and 20 or between 20 and 25. Simultaneously, coupled with the small number of middle or older aged female workers who are paid high wages, the fact that the wage level paid to the married women who are reemployed after childcare is similar to that paid to the young unmarried female workers leads to the large wage differentials between male and female workers.

It is useful to examine age-wage curves to explore this aspect of women's interrupted career.

〈Figure 1〉 draws the age-wage curves by occupation for both female and male workers. For female workers working in the production site, the wages tend to decline when they are in or older than the age group of 25~30, but little wage differentials between male and female workers in the production site are detected in the age group of 17~20 and 20~25. For those female workers in the production site who once retired from the labor market due to marriage, pregnancy, childbirth or childcare but return to the market after they are 30 years old, the low wage prevails and the female wages become divergent from those of the male workers in an increasing fashion after the age

group of 25~30. As indicated by the big jump in the male-female wage differentials
when female workers reach the age group of 30~35 for the white collar occupation, the
female white-collar workers in the age of more than 35 receive low-wages once they reen-
ter the labor market after marriage or child birth, because their years in service are short
and they are equipped with only relatively simple skills. Moreover, as the female workers
in the age above 30 constitute approximately 50% of total female workers in the manu-
facturing sector, the large wage differentials between male and female workers emerge.

〈Figure 1〉 Age-Wage Profiles by Occupation and Sex
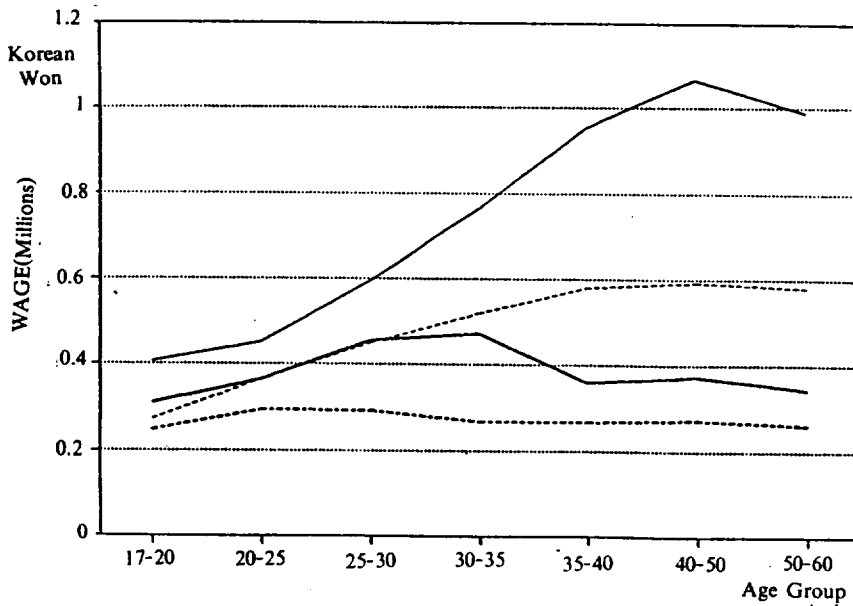
── Male White-Collar ···· Male Blue-Collar ── Female White-Collar ···· Female Blue-Collar

(3) Occupational Segregation and Internal Labor Market Discrimination

The female workers tend to receive infrequent and inadequate OJT, and the promotion
opportunities are hardly given to them. The female white collar workers are normally
assigned to the secondary jobs including typing and accounting and play assistant roles
for male white collar workers. It implies that they are faced with little opportunities for
regular job transfers which help them gain the idea on the management of the firm and
that the firm-specific knowledge or information is difficult to accumulate. Therefore, the

promotion to the higher position of management is highly restricted.

On the other hand, the discriminatory practices in the internal labor market for the female workers in the production site starts with their being allocated to the simple assembly or processing type of the job. The female workers are concentrated in sewing, weaving, electric & electronics assembly and shoes sewing, which are all directly related to the simple assembly & processing type of occupations. In these occupations, only the precision, speed and no absenteeism from the job are required, and the promotion opportunities through accumulation of skills or techniques are unavailable.

The firms' unwillingness to provide the female workers with training and occupational in-house vocational education as well as the limited promotion opportunities are the important element behind the large wage differentials between male and female workers.

(4) Fringe Benefits

The wages paid by Korean firms include the cost of living allowances, family support, education allowances and housing allowances. These fringe benefits are normally offered only to the male workers, which becomes an additional factor that creates the wage differentials between male and female workers.

Se Il Park (1984) illustrates the sex discrimination in the Korean labor market as follows.

"... The employment discrimination in the labor market is decomposed into the occupational segregation under which the female workers are driven into the low-wage paid occupations even with the same individual characteristics as the male workers including the education level and job experiences, and the discrimination in the internal labor market where the firm's employment policy or practices on the job assignment & transfer, training, promotion and retirement are disadvantageous to the female workers who are located in the same occupation as the male workers.

Another form of sex discrimination in the labor market is the wage discrimination. It refers to the relatively low reward paid to the female workers owing to the firms' policy or practices on the wage payment, despite the fact that the female workers have the same education level and job experiences and are in the same occupation as the male workers."

That is, Se Il Park regarded the occupational discrimination and the internal labor market discrimination as the major sources of employment discrimination against women. But we categorized the discrimination against women into three types: ① discrimination

at port of entry ② occupational discrimination and ③ internal labor market discrimination and we insisted that the first type is the most important in Korea than the others. Female workers are over-represented or crowded in the low-wage firms (or sector), which becomes the institutional constraint on the women's opportunities for on-the-job training and promotions throughout their working lives. This may be more important factor for the explanation of sex wage differentials than those caused by occupational discrimination and internal labor market discrimination.

3. Decomposition of Male-Female Differentials — Oaxaca's Approach

In order to formulate public policy to reduce sexual wage inequality, reduce the misallocation of resources due to discrimination and achieve more equitable income distribution, one has to find out which part of the sex wage-gap is due to inequality of treatment and which part is due to dissimilarity of characteristics. The usual line of argument is to relate inequalities to discrimination and dissimilarities to competitive outcomes (or valuations) of market.

Following Oaxaca, the average hourly wages of men $(\overline{W_m})$ and women $(\overline{W_f})$ are taken to depend respectively on a number of mean values of observed charateristics $\overline{X_m}$ and $\overline{X_f}$ in the following way.

$$ln \ \overline{W_m} = \overline{X_m} a \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (1)$$

$$ln \ \overline{W_f} = \overline{X_f} b \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (2)$$

where $\overline{X_m}$ and $\overline{X_f}$ = the row vectors of mean values of the regressors of the earning functions for males and females, respectively.

a and b = the column vectors of estimated coefficients of the earning functions

For a given set of characteristics, the differences in wages can be decomposed (after simple manipulation of the two wage equations above) into which those which are due to different characteristics $(\overline{X_m} - \overline{X_f})$ and those attributable to different rewards to certain characteristics (a-b). That is,

$$ln \ \overline{W_m} - ln \ \overline{W_f} = (\overline{X_m} - \overline{X_f})a + \overline{X_f}(a - b) \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (3)$$

calculated as following

$$\hat{D} = exp\{X_f(a-b)\} - 1 \cdots\cdots\cdots (9)$$

If we evaluate the value of the advantage in endowments possessed by males by the coefficients of the female wage equations, the overall wage differentials become as following:

$$ln\overline{W}_m - ln\overline{W}_f = (\overline{X}_m - \overline{X}_f)b + \overline{X}_m(a-b) \cdots\cdots\cdots (10)$$

If $(\overline{W}_m/\overline{W}_f)^\circ$ can be approximated by $(\overline{X}_m - \overline{X}_f)b$, then

$$ln(\hat{D}+1) = \overline{X}_m(a-b) \cdots\cdots\cdots (11)$$

$\overline{X}_m(a-b)$ is simply the residual left after subtracting the effects of differences in endowment from the overall wage differentials. The estimated discrimination coefficient $(\hat{D})$ becomes:

$$\hat{D} = exp\{\overline{X}_m(a-b)\} - 1 \cdots\cdots\cdots (12)$$

The estimated discrimination coefficient in (9) will be specified as $\hat{D}_1$ and that in (12) as $\hat{D}_2$. $\hat{D}_1$ is the estimated discrimination coefficient when $(\overline{W}_m/\overline{W}_f)^\circ$ is approximated by using male wage regression coefficients. $\hat{D}_2$ is the estimated discrimination coefficient when $(\overline{W}_m/\overline{W}_f)^\circ$ is approximated by using female wage regression coefficients.

Now we postulate the following standard earning function.

$$ln\ WAGE_i = X_i\beta + u_i$$

WAGE$_i$ is the respondent's gross hourly rate of pay excluding overtime pay and Xi is specified as follows.

$$X_i = (EDUC, TEN, TSQ, EXP, EXSQ, MAR, PART,$$
$$OCCUPATIONAL\ DUMMIES, INDUSTRY\ DUMMIES,$$
$$FIRMSIZE\ DUMMIES, REGION\ DUMMIES, RATIO, CONSTANT)$$

The variable definitions are explained in ⟨Table 2⟩. In addition to those stylized variables in the standard neo-classical earning function, we include the ratio of low-wage paid workers out of total employee in a firms (RATIOi) as one, independent variable. RATIOi

〈Table 2 〉 Variable Definitions

〈Dependent Variable〉	
LNWAGE	The natural log of the respondent's gross rate of pay per hours at the current job (in 1990 U.S.dollars). Overtime pay is excluded.
	The gross rate of pay=monthly earning/monthly regular hours of work.
〈Independent Variables〉	
EDUC	Years of Schooling.
EXP	Actual number of years of experience.
EXSQ	(EXP)2
TEN	The number of years that the respondent has been for his current employer
TSQ	(TEN)2
MAR	Dummy equal to 1 if the respondent is married, zero otherwise.
PART	Dummy equal to 1 if the respondent's employment status is a part-time worker, zero otherwise.
WH	Dummy equal to 1 if the respondent is a professional, technical or administrator, zero otherwise.
WL	Dummy equal to 1 if the respondent is a clerical, sales or service worker, zero otherwise.
	If the respondent is a blue-collar, WH = WL = 0 ;
LIGH1	Dummy equal to 1 if the respondent is employed in textile, wearing apparel & leather industries, zero otherwise.
HEAV1	Dummy equal to 1 if the respondent is employed in manufacture of fabricated metal products, zero otherwise.
HEAV2	Dummy equal to 1 if the respondent is employed in other heavy industries other than fabricated metal, zero otherwise.
	If the respondent is employed in light industries other than textile, wearing apparel & leather, LIGH1 = HEAV1 = HEAV2 = 0 ;
FD12	Dummy equal to 1 if the number of employees at the respondent's workplace is greater than or equal to 100, but less 300, zero otherwise.
FD4	Dummy equal to 1 if the number of employees at the respondent's workplace is greater than or equal to 300, but less 500, zero otherwise.
FD5	Dummy equal to 1 if the number of employees at the respondent's workplace is greater than or equal to 500, zero otherwise. ·
REG2	Dummy equal to 1 if the respondent is lives in Pusan City, zero otherwise.
REG3	Dummy equal to 1 if the respondent is lives in Kyungki Province, zero otherwise.
REG4	Dummy equal to 1 if the respondent is lives in Kang-won, Chung-chung, or Chunlla Province, zero otherwise.
REG5	Dummy equal to 1 if the respondent is lives in Kyung-sang Province, zero otherwise.
	If the respondent is lives in Seoul, the capital city of Korea, REG2 = REG3 = REG4 = REG5 = 0 ;
RATIO	The ratio of low-wage paid workers out of total employees in each firm.
	The maximum value is 1.00 and the minimum is 0.00.
	A proxy for the average per capita value-added productivity or capital-labor ratio of the firm.

could be a proxy variable for the average per capita value-added productivity of the firm or the monopoly power of the firms.

The estimation of the earning functions are performed, using the 1984 and 1989 Occupational Wage Survey Data. The samples are restricted to workers in manufacturing sector.

Recognition that the wage determination process differs between male and female worker leads to the sample separation for each sex. The regression results of the earning function for the male and the female sample are reported in ⟨Table 3⟩ and ⟨Table 4⟩. $\overline{X}_m$ and $\overline{X}_f$ are displayed in ⟨Table 5⟩.

$\hat{D}_1$ and $\hat{D}_2$ in 1984 were 0.529 and 0.243, respectively and the simple average value of $\hat{D}_1$ and $\hat{D}_2$ was 0.386 in 1984. $\hat{D}_1$ and $\hat{D}_2$ in 1989 were 0.431 and 0.241, respectively, and the simple average in 1989 was 0.336. So decline in the discrimination coefficients between 1984 and 1989 indicates that the sexual discrimination decreased slightly.

Summary of the Estimates of $\ln(\hat{D}+1)$ and $\hat{D}$

	$\ln(\hat{D}_1+1)$	$\ln(\hat{D}_2+1)$	$\hat{D}_1$	$\hat{D}_2$
84	0.42444	0.21780	0.52874	0.24334
89	0.35830	0.21574	0.43090	0.24078

As of 1989, the ratio of female to male pay in our sample was 51.0%.

The average logarithms of the hourly wages computed from our sample were 7.9408 for males and 7.2682 for females. The value of the wage differentials in logarithmic term is 0.6726. $ln(\hat{D}_1+1)$ and $ln(\hat{D}_2+1)$ in 1989 were 0. 3583 and 0.2157, respectively. The simple average of the two estimates (0.287) account for 42.7% of the overall logarithmic wage differentials (0.6726).

⟨Table 3⟩   Least Squares Estimates of the Earning Funtion by Sex in 1984

	Male		Female		$\hat{\beta}_m - \hat{\beta}_f$
CONSTANT	6.2760	(313.02)	6.3784	(307.30)	−0.1024
EDUC	0.0475	(36.43)	0.0211	(14.76)	0.0264
TEN	0.0821	(45.05)	0.0776	(35.41)	0.0044
TSQ	−0.0019	(−18.15)	−0.0027	(−10.98)	0.0008
EXP	0.0071	(2.43)	0.0256	(7.70)	−0.0184
EXSQ	0.0022	(7.18)	−0.0001	(− 0.24)	0.0023
MAR	0.1768	(25.73)	−0.0288	(− 3.62)	0.2057
PART	−0.1231	(−11.21)	−0.1716	(−15.61)	0.0485
WH	0.3815	(39.01)	0.3960	(10.12)	−0.0144
WL	0.1907	(24.83)	0.1137	(12.06)	0.0770
F12	0.0121	(0.76)	0.0359	(2.35)	−0.0238
F4	−0.0295	(− 2.32)	−0.0413	(− 3.94)	0.0118
F5	0.0341	(3.32)	0.0348	(4.27)	−0.0007
LIGH1	0.0618	(6.05)	−0.0333	(− 3.92)	0.0951
HEAV1	0.0458	(5.49)	0.1214	(13.49)	−0.0755
HEAV2	−0.0402	(−4.63)	0.0180	(1.78)	−0.0583
REG2	−0.0782	(− 7.49)	−0.0670	(− 7.69)	−0.0112
REG3	−0.0205	(− 2.37)	−0.1501	(−20.56)	0.1296
REG4	−0.0408	(− 4.02)	−0.0546	(− 6.10)	0.0138
REG5	0.0704	(8.67)	−0.1109	(−15.65)	0.1813
RATIO	−0.5878	(−56.50)	−0.5136	(−39.22)	−0.0741
$\bar{R}^2$	0.71		0.55		
Mean of LNWAGE	7.18		6.31		
N	13528		10297		

Note : 1) The value of the t-ratios are in parentheses

⟨Table 4⟩ Least Squares Estimates of the Earning Funtion by Sex in 1989

	Male		Female		$\hat{\beta}_m - \hat{\beta}_f$
CONSTANT	7.0497	(383.34)	7.1345	(412.98)	0.0848
EDUC	0.0454	(39.25)	0.0155	(13.21)	0.0299
TEN	0.0589	(41.38)	0.0832	(46.85)	−0.0243
TSQ	−0.0010	(−14.34)	−0.0039	(−23.36)	0.0028
EXP	0.0049	(2.03)	0.0113	(4.74)	−0.0063
EXSQ	0.0020	(8.29)	0.0003	(1.32)	0.0017
MAR	0.1153	(20.87)	−0.0008	(−0.14)	0.1161
PART	−0.0145	(−1.58)	−0.0281	(−3.90)	0.0136
WH	0.3001	(39.34)	0.3130	(17.66)	−0.0129
WL	0.1402	(22.29)	0.0734	(12.47)	0.0668
F12	−0.0976	(− 8.11)	−0.0242	(− 2.18)	−0.0734
F4	−0.0420	(− 4.33)	0.0697	(8.00)	−0.1118
F5	0.0731	(9.14)	0.1222	(16.68)	−0.0490
LIGH1	0.1360	(16.51)	0.0256	(3.71)	0.1104
HEAV1	0.0861	(12.05)	0.0570	(8.45)	0.0291
HEAV2	0.1128	(14.38)	0.0355	(4.08)	0.0772
REG2	−0.1616	(−15.27)	−0.1007	(−14.40)	−0.0609
REG3	−0.0769	(−10.79)	−0.0004	(− 0.08)	−0.0764
REG4	−0.0521	(− 4.93)	0.0013	(0.17)	−0.0535
REG5	−0.0310	(− 4.04)	−0.0758	(−12.82)	0.0448
RATIO	−0.5499	(−61.00)	−0.5523	(−62.84)	0.0023
$\bar{R}^2$	0.70		0.68		
Mean of LNWAGE	7.94		7.26		
N	15187		9540		

Note: 1) The value of the t-ratios are in parentheses

⟨Table 5⟩   The Mean Values of Regressors for Males and Females in 1984 and 1989

	⟨1984⟩		⟨1989⟩	
	Male	Female	Male	Female
EDUC	11.26	9.53	11.92	10.44
TEN	4.74	1.94	5.37	2.51
TSQ	39.98	8.09	52.37	11.41
EXP	1.75	1.10	1.64	1.25
EXSQ	8.34	3.18	7.91	4.68
MAR	0.66	0.11	0.67	0.21
PART	0.06	0.05	0.06	0.07
WH	0.12	0.004	0.14	0.01
WL	0.19	0.08	0.20	0.13
F12	0.04	0.02	0.04	0.04
F4	0.09	0.10	0.11	0.10
F5	0.78	0.77	0.74	0.76
LIGH1	0.14	0.48	0.16	0.39
HEAV1	0.42	0.26	0.46	0.40
HEAV2	0.25	0.15	0.23	0.08
REG2	0.11	0.23	0.09	0.21
REG3	0.23	0.20	0.38	0.29
REG4	0.11	0.10	0.08	0.08
REG5	0.35	0.24	0.30	0.22
RATIO	0.37	0.75	0.33	0.58

4. Segmented Labor Markets and Male-Female Wage Differentials

(1) Wage Premium Paid to Workers Employed in High-Wage Firms

We hypothesize that Korean labor market is segmented into high-wage firms and low-wage firms. The importment feature of this structured labor market is that workers may not be free to move from low-wage firms to high-wage firms. While individuals are free to vacate their current job, they may not get the desired position at high wage-firms. Thurow(1975) argues that an intense competition for securing the employment in high-wage firms produces labor queues in which the prospective employees are waiting in the long line to get hired in the high-wage firms. As a result, workers of equal skill or potential ability are employed at widely different wage levels.

Access to high-wage firms and the incomes associated with them depend largely on institutional rules and restrictions as much as abilities and qualifications. Those may be called "entry barriers". In particular, the social position of women has made them willing to be employed at low-wage firms which offer relatively low wages and poor fringe benefits. Womens' low pay results from a shortage of high-wage firms offering good job opportunities and from entry barriers into high-wage firms. Consequently substantial hidden unemployment of female population may exist. The concentration of women workers in the lower segments of the national distribution of jobs or the national hierarchy of jobs in the labor market lays them open to further exploitation in that they receive lower pay relative to their productivity than those more fortunately placed.

Taking a bird's-eye view of the wage differentials between workers in high- wage firms and those in low-wage firms, one may examine the age-wage curve by occupation for male and female workers in the low-wage and high-wage firms. ⟨Figure 3⟩ depicts the age-wage curves for male employees in blue-collar and white-collar occupations of both the high-wage and low-wage firms as well as female blue-collar workers of low-wage firms. The high-wage firm is defined as the firm whose share of low-wage workers out of total employees is between 0% and 49% and if the corresponding figure is between 50% and 100%, it is defined as the low-wage firm. Major findings are summarized as follows:

i) there exists a remarkable wage differential between the male white-collar workers in the low-wage and high-wage firms,

ii) the substantial wage differentials between the male blue-collar workers in the low-wage and high-wage firms are observed as well, and finally

iii) the wage paid to the female blue-collar workers of low-wage firms is higher than that of male blue-collar workers in the low-wage firms when they are in the age group of 17~20, but once they reach the age group greater than 20~25, this trend is reversed and the wage differential becomes widening as indicated by ⟨Figure 1⟩.

It seems that the female blue-collar workers in the age of 25 or below are paid 40% less than the wage paid to the male blue-collar workers in the high-wage firms and that the wage ratio of the female blue-collar's wages to the male white collar's wages in the high-wage firms is even greater, marked by 53~54% differential. In other words, the wage differential between male workers in the high- wage firms and female workers in the low-wage firms in the age of 25 or below constitutes another influential determinant

⟨Figure 2⟩   Age-Wage Profiles by High-Wage/Low-Wage Firm-Male
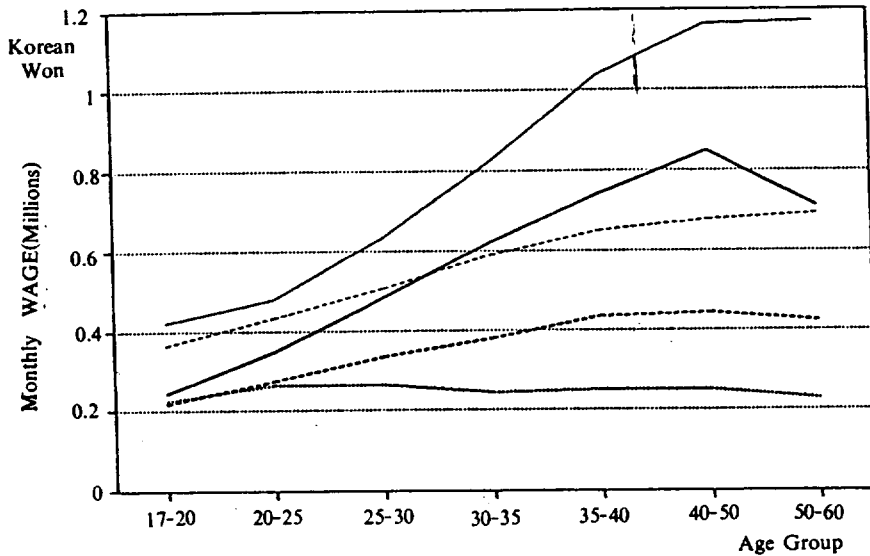
——— Male White-Collar in High-Wage Firm
- - - - Male Blue-Collar in High-Wage Firm
——— Male White-Collar in Low-Wage Firm
- - - - - Male Blue-Collar in Low-Wage Firm
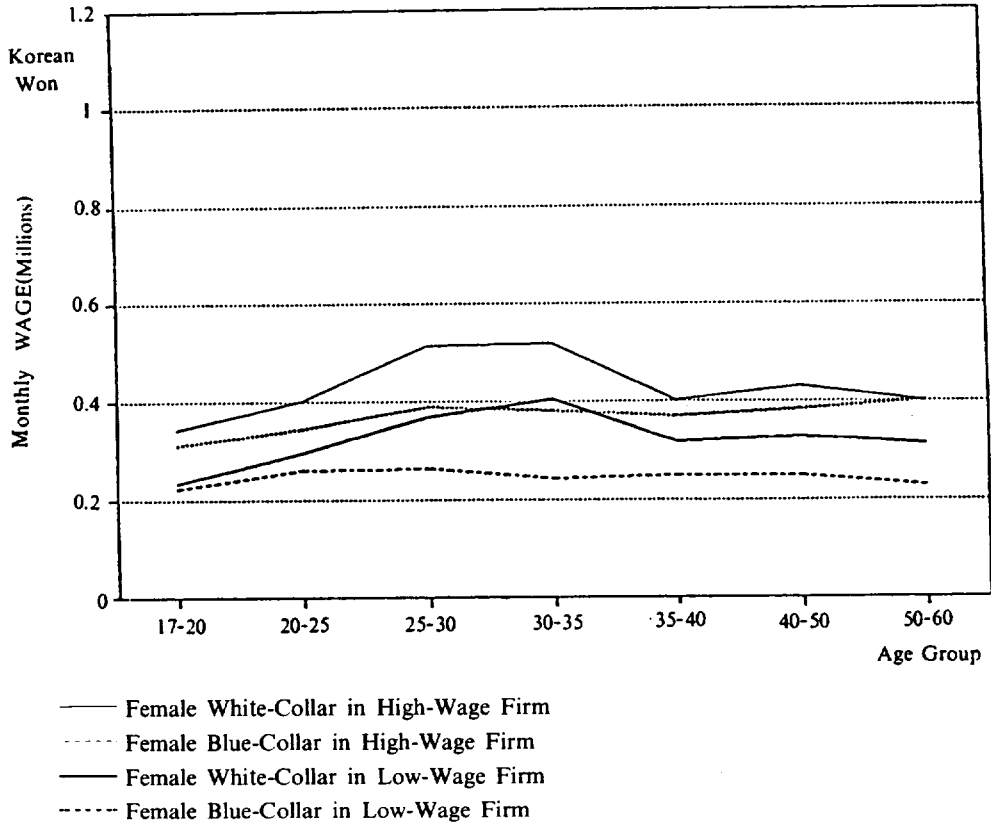· · · · · · Female Blue-Collar in Low-Wage Firm

of apparent wage differentials between male and female workers in Korea.

The sophisticated way of testing whether the Korean labor market is segmented or not is to estimate the wage differentials among observationally equivalent workers between high-wage firms and low-wage firms.

The empirical procedure is to estimate the earning function separately by workers in high-wage firms and those in low-wage firms. To estimate the wage premium paid to workers employed in high-wage firms we are going to exploit Oaxaca's Method again.

The wage ratio of workers in high-wage firms to those in low-wage firms will reflect workers' relative marginal productivities if there are no entry barriers into high-wage firms. Let's define the average wage ratio in absence of entry barrier as $(\overline{W}_H/\overline{W}_L)^\circ$. The observed average wage ratio of workers in high-wage firms to those in low-wage firms is $(\overline{W}_H/\overline{W}_L)$. Then the wage premium coefficient(B) will be defined as following.

⟨Figure 3⟩ Age-Wage Profiles by High-Wage/Low-Wage Firm — Female

——— Female White-Collar in High-Wage Firm
- - - - Female Blue-Collar in High-Wage Firm
——— Female White-Collar in Low-Wage Firm
— - - - - Female Blue-Collar in Low-Wage Firm

$$\hat{B} = \frac{(\overline{W_H}/\overline{W_L}) - (\overline{W_H}/\overline{W_L})^{\circ}}{(\overline{W_H}/\overline{W_L})^{\circ}}$$

Assume that $\hat{\beta}_H$ and $\hat{\beta}_L$ are the vectors of estimated coefficients for the earning functions in high-wage firms and in low-wage firms and $\overline{Z}_H$ and $\overline{Z}_L$ are the corresponding vectors of the mean values of the regressors, then our objective is to estimate the followings.

$$\hat{B}_1 = \{ exp(\overline{Z}_H \Delta \beta) \} - 1$$
$$\hat{B}_2 = \{ exp(\overline{Z}_L \Delta \beta) \} - 1$$

where $\Delta \hat{\beta} = \hat{\beta}_H - \hat{\beta}_L$

The least squares estimates of the earning function in high-wage firms by sex are

are reported in 〈Table 6〉 and 〈Table 7〉 and the mean values of the regressors are displayed in 〈Table 10〉. The corresponding tables for low-wage firms are 〈Table 8〉, 〈Table 9〉 and 〈Table 10〉. Difference in coefficients of the regressors for workers in high-wage / low-wage firms by sex, i.e., $\hat{\beta}_H - \hat{\beta}_L$, are reported in 〈Table 11〉.

Our estimations of $\hat{B}_1$ and $\hat{B}_2$ for males in 1984 are 0.376 and 0.273, respectively, and the simple average of two values was 0.325. $\hat{B}_1$ and $\hat{B}_2$ for females in 1984 were 0.301 and 0.223, respectively, and the simple average was 0.262. The wage premium paid to workers in high-wage firms were indeed substantial in 1984.

In 1989, $\hat{B}_1$ and $\hat{B}_2$ for males were 0.436 and 0.328, respectively and the simple average was 0.382. $\hat{B}_1$ and $\hat{B}_2$ for females were 0.356 and 0.328 and the simple average was 0.342. The estimated effects of entry barriers into high-wage firms in 1989 were larger than those in 1984.

Substantial wage differentials among observationally equivalent workers between high-wage firms and low-wage firms indicate that Korean labor market are segmented.

Summary of the Estimates of $\ln(\hat{B}+1)$ and $\hat{B}$

Male Workers in High-Wage Firms and Low-Wage Firms

	$\ln(\hat{B}_1+1)$	$\ln(\hat{B}_2+1)$	$\hat{B}_1$	$\hat{B}_2$
84	0.31904	0.24111	0.37580	0.27267
89	0.28398	0.36204	0.32841	0.43626

Female Workers in High-Wage Firms and Low-Wage Firms

	$\ln(\hat{B}_1+1)$	$\ln(\hat{B}_2+1)$	$\hat{B}_1$	$\hat{B}_2$
84	0.20088	0.26283	0.30060	0.22248
89	0.30486	0.28394	0.32836	0.35643

(2) Estimation of The Discrimination Coefficient in Segmented Labor Markets

Since the wage determination process differs between high-wage and low-wage firms we need to estimate the discrimination coefficients in high-wage firms and in low-wage firms, seperately. It will be shown that discrimination coefficient in high-wage firm is larger that that in low-wage firms.

$\hat{D}_1$ and $\hat{D}_2$ of high-wage firms in 1984 were 0.554 and 0.326, respectively. The corresponding figures of low-wage firms in 1984 were 0.471 and 0.275. As of 1989, $\hat{D}_1$ and $\hat{D}_2$

of high-wage firms were 0.503 and 0.321, respectively. The corresponding figures of low-wage firms in 1989 were 0.422 and 0.218.

The average values of the discrimination coefficient in 1984 was 0.440 and 0.373 for workers in high-wage firms and those in low-wage firms, respectively. The average estimates of the discrimination coefficient in 1989 were 0.412 and 0.320 for workers in high-wage firms and those in low-wage firms.

Summary of the Estimates of $\ln(\hat{D}+1)$ and $\hat{D}$

Total

	$\ln(\hat{D}_1+1)$	$\ln(\hat{D}_2+1)$	$\hat{D}_1$	$\hat{D}_2$
84	0.42444	0.21780	0.52874	0.24334
89	0.35830	0.21574	0.43090	0.24078

High-Wage Firms

	$\ln(\hat{D}_1+1)$	$\ln(\hat{D}_2+1)$	$\hat{D}_1$	$\hat{D}_2$
84	0.44082	0.28239	0.55398	0.32630
89	0.40766	0.27802	0.50330	0.32051

Low-Wage Firms

	$\ln(\hat{D}_1+1)$	$\ln(\hat{D}_2+1)$	$\hat{D}_1$	$\hat{D}_2$
84	0.38611	0.24313	0.47125	0.27524
89	0.35205	0.19721	0.42198	0.21799

The discrimination coefficients in both high-wage firms and low-wage firms seem to have decreased between 1984 and 1989. The gradual decrease in sexual discrimination in Korea is occuring within low-wage firms as well as within high-wage firms. Furthermore, the policy implication of the fact that the discrimination coefficient of high-wage firms are much larger than that of low-wage firms is that the public policy for anti-discrimination should pay special attention to the sexual discrimination within the high-wage firms.

As of 1989, the elimination of wage discrimination would result in an increase of the ratio of average female to average male wage to 81.3% in high-wage firms and 80.6% in low-wage firms, respectively. We suggest that the ratio of female to male wages could potentially improve to about 80% in Korea. In order to achieve this target, the appropriate policies and programmes for reducing gender disparties in wages should be designed and executed, which will be the subject matter of next chapter.

⟨Table 6⟩ Least Squares Estimates of the Earning Funtion in High-Wage Firms by Sex, 1984

	Male		Female		$\hat{\beta}_m - \hat{\beta}_f$
CONSTANT	6.1160	(240.45)	5.9663	(92.62)	0.1497
EDUC	0.0580	(35.97)	0.0596	(12.51)	−0.0016
TEN	0.0822	(37.41)	0.1171	(19.69)	−0.0348
TSQ	−0.0018	(−15.35)	−0.0051	(−8.47)	0.0032
EXP	−0.0015	(−0.39)	0.0095	(0.98)	−0.0110
EXSQ	0.0027	(6.50)	−0.0005	(−0.46)	0.0033
MAR	0.1848	(20.80)	0.0161	(0.61)	0.1687
PART	−0.1840	(−14.90)	−0.1886	(−8.44)	0.0045
WH	0.3051	(27.34)	0.3149	(6.01)	−0.0097
WL	0.1409	(14.75)	0.0693	(4.15)	0.0716
F12	−0.0261	(−0.99)	−0.1645	(−3.45)	0.1384
F4	−0.0222	(−1.15)	−0.1896	(−4.65)	0.1673
F5	0.0981	(6.54)	−0.0051	(−0.18)	0.1032
LIGH1	−0.2718	(−14.18)	−0.1995	(−7.86)	−0.0723
HEAV1	0.0071	(0.63)	−0.0228	(−1.08)	0.0299
HEAV2	−0.1157	(−10.44)	−0.0808	(−3.31)	−0.0349
REG2	−0.1578	(−11.36)	−0.0919	(−2.26)	−0.0659
REG3	−0.1603	(−14.96)	−0.2415	(−13.88)	0.0811
REG4	0.0175	(1.36)	−0.1322	(−4.74)	0.1497
REG5	0.1250	(12.90)	−0.0577	(−2.44)	0.1827
$\overline{R}^2$	0.63		0.61		
Mean of LNWAGE	7.40		6.73		
N	8235		1423		

Note: 1) The value of the t-ratios are in parentheses

⟨Table 7⟩ Least Squares Estimates of the Earning Funtion in High-Wage Firms by Sex, 1989

	Male		Female		$\hat{\beta}_m - \hat{\beta}_f$
CONSTANT	6.8732	(322.79)	6.8836	(194.88)	0.0104
EDUC	0.0469	(33.44)	0.0199	(7.62)	0.0269
TEN	0.0573	(34.11)	0.0844	(26.33)	−0.0271
TSQ	−0.0010	(−11.99)	−0.0038	(−13.26)	0.0027
EXP	0.0080	(2.66)	0.0250	(4.97)	−0.0170
EXSQ	0.0013	(3.92)	0.0000524	(0.08)	0.0012
MAR	0.1192	(17.78)	0.0168	(1.23)	0.1024
PART	0.0540	(5.10)	0.1512	(10.71)	−0.0971
WH	0.2368	(27.32)	0.3236	(13.34)	−0.0867
WL	0.1200	(16.03)	0.1529	(17.71)	−0.0328
F12	−0.0727	(−4.41)	−0.2211	(−7.39)	0.1484
F4	0.0093	(0.76)	−0.0358	(−1.74)	0.0451
F5	0.1745	(17.68)	0.1399	(9.14)	0.0346
LIGH1	0.1714	(14.57)	0.1482	(9.91)	0.0232
HEAV1	0.0878	(9.90)	0.1128	(9.34)	−0.0249
HEAV2	0.1705	(18.90)	0.0861	(5.50)	0.0843
REG2	0.0515	(3.25)	−0.1440	(−6.25)	0.1956
REG3	−0.0990	(−11.04)	−0.0381	(−3.43)	−0.0608
REG4	−0.0587	(−5.25)	−0.1411	(−8.64)	0.0824
REG5	0.0165	(1.68)	−0.0594	(−5.07)	0.0759
$\overline{R}^2$	0.59		0.44		
Mean of LNWAGE	8.09		7.54		
N	10290		3183		

Note: 1) The value of the t-ratios are in parentheses

⟨Table 8⟩ Least Squares Estimates of the Earning Funtion in Low-Wage Firms by Sex, 1984

	Male		Female		$\hat{\beta}_m - \hat{\beta}_f$
CONSTANT	5.8409	(194.49)	6.0216	(305.19)	−0.1807
EDUC	0.0459	(21.19)	0.0172	(11.10)	0.0287
TEN	0.0920	(30.14)	0.0783	(32.41)	0.0136
TSQ	−0.0022	(−11.61)	−0.0025	(−8.75)	0.0002
EXP	0.0166	(3.54)	0.0253	(6.99)	−0.0087
EXSQ	0.0011	(2.48)	0.0005	(1.16)	0.0006
MAR	0.1708	(15.72)	−0.0231	(−2.69)	0.1939
PART	−0.0232	(−0.94)	−0.1843	(−12.93)	0.1611
WH	0.5218	(26.63)	0.5645	(10.09)	−0.0427
WL	0.2578	(19.94)	0.1754	(13.69)	0.0823
F12	−0.0112	(−0.54)	0.0858	(5.19)	−0.0971
F4	−0.0604	(−3.44)	−0.0364	(−3.26)	−0.0240
F5	−0.0065	(−0.46)	0.0437	(4.99)	−0.0503
LIGH1	0.0886	(6.89)	−0.0778	(−8.21)	0.1664
HEAV1	0.0937	(7.16)	0.0735	(6.89)	0.0201
HEAV2	0.0469	(3.13)	−0.0309	(−2.68)	0.0778
REG2	−0.1093	(−6.20)	−0.1225	(−13.42)	0.0132
REG3	0.0014	(0.10)	−0.1383	(−16.29)	0.1398
REG4	−0.1254	(−7.28)	−0.0415	(−4.18)	−0.0838
REG5	−0.0209	(−1.38)	−0.0942	(−11.77)	0.0732
$\overline{R}^2$	0.65		0.35		
Mean of LNWAGE	6.84		6.24		
N	5293		8874		

Note : 1) The value of the t−ratios are in parentheses

⟨Table 9⟩ Least Squares Estimates of the Earning Funtion in Low-Wage Firms by Sex, 1989

	Male		Female		$\hat{\beta}_m - \hat{\beta}_f$
CONSTANT	6.6865	(217.35)	6.7297	(377.55)	−0.0432
EDUC	0.0427	(21.11)	0.0158	(11.80)	0.0269
TEN	0.0723	(28.09)	0.0834	(38.22)	−0.0111
TSQ	−0.0014	(−9.99)	−0.0038	(−17.72)	0.0024
EXP	0.0089	(2.15)	0.0168	(6.17)	−0.0079
EXSQ	0.0021	(5.17)	−0.0003	(−1.39)	0.0025
MAR	0.1103	(11.36)	−0.0106	(−1.68)	0.1210
PART	−0.1548	(−8.11)	−0.1000	(−11.40)	−0.0547
WH	0.4166	(26.08)	0.3977	(14.79)	0.0189
WL	0.1515	(13.32)	0.0866	(10.35)	0.0648
F12	−0.1535	(−8.16)	−0.0148	(−1.22)	−0.1387
F4	−0.0438	(−2.61)	0.1002	(10.19)	−0.1440
F5	0.0246	(1.72)	0.1743	(20.48)	−0.1496
LIGH1	0.1092	(8.32)	0.0224	(2.76)	0.0868
HEAV1	0.1172	(9.01)	0.0247	(2.89)	0.0924
HEAV2	0.1406	(9.64)	0.1350	(12.59)	0.0056
REG2	−0.2499	(−15.88)	−0.2385	(−31.41)	−0.0113
REG3	−0.0288	(−2.09)	−0.0026	(−0.37)	−0.0262
REG4	−0.0855	(−4.13)	−0.0229	(−2.47)	−0.06258
REG5	−0.0769	(−5.46)	−0.1525	(−20.10)	0.07561
$\overline{R}^2$	0.66		0.53		
Mean of LNWAGE	7.62		7.13		
N	4897		6357		

Note: 1) The value of the t-ratios are in parentheses

⟨Table 10⟩ The Mean Values of Regressors for Males and Females in
High-Wage Firms and Low-Wage Firms, 1984 and 1989

| | High-Wage Firms | | | | Low-Wage Firms | | | |
| | ⟨1984⟩ | | ⟨1989⟩ | | ⟨1984⟩ | | ⟨1989⟩ | |
	Male	Female	Male	Female	Male	Female	Male	Female
EDUC	11.62	11.18	12.20	11.42	10.71	9.26	11.33	9.95
TEN	5.37	2.60	5.82	2.70	3.76	1.83	4.41	2.41
TSQ	46.64	13.36	57.59	12.82	29.63	7.24	41.40	10.70
EXP	1.62	1.04	1.46	0.91	1.94	1.10	2.03	1.42
EXSQ	7.36	2.95	6.40	2.60	9.86	3.22	11.07	5.72
MAR	0.72	0.10	0.68	0.11	0.58	0.12	0.64	0.26
PART	0.08	0.13	0.07	0.06	0.03	0.03	0.04	0.08
WH	0.15	0.01	0.17	0.02	0.06	0.002	0.10	0.00
WL	0.21	0.37	0.21	0.24	0.16	0.04	0.20	0.08
F12	0.02	0.02	0.03	0.01	0.07	0.03	0.07	0.05
F4	0.07	0.05	0.10	0.05	0.13	0.10	0.13	0.13
F5	0.85	0.85	0.77	0.86	0.66	0.75	0.68	0.71
LIGH1	0.03	0.12	0.07	0.13	0.30	0.54	0.34	0.52
HEAV1	0.49	0.57	0.52	0.66	0.31	0.21	0.33	0.27
HEAV2	0.31	0.13	0.27	0.09	0.17	0.15	0.15	0.08
REG2	0.08	0.02	0.03	0.02	0.15	0.26	0.21	0.46
REG3	0.19	0.26	0.41	0.44	0.29	0.19	0.33	0.41
REG4	0.09	0.07	0.10	0.06	0.13	0.10	0.05	0.28
REG5	0.39	0.10	0.32	0.29	0.28	0.26	0.26	0.39

⟨Table 11⟩ Difference in Coefficients of the Regressors for Workers in High-Wage/
Low-Wage Firms by Sex, 1984 and 1989

	1984		1989	
	Male $\hat{\beta}_H - \hat{\beta}_L$	Female $\hat{\beta}_H - \hat{\beta}_L$	Male $\hat{\beta}_H - \hat{\beta}_L$	Female $\hat{\beta}_H - \hat{\beta}_L$
EDUC	0.0120	0.0424	0.0041	0.0041
TEN	−0.0097	0.0387	−0.0150	0.0010
TSQ	0.0003	−0.0026	0.0003	0.00003
EXP	−0.0181	−0.0157	−0.0009	0.0082
EXSQ	0.0015	−0.0011	0.0007	0.0004
MAR	0.0140	0.0392	0.0088	0.0274
PART	−0.1608	−0.0042	0.2088	0.2512
WH	−0.2166	−0.2496	−0.1797	−0.0740
WL	−0.1169	−0.1061	−0.0314	0.0662
F12	−0.0148	−0.2503	0.0808	−0 2063
F4	0.0381	−0.1532	0.0531	−0.1360
F5	0.1046	−0.0488	0.1498	−0.0344
LIGH1	−0.3605	−0.1217	0.0622	0.1258
HEAV1	−0.0865	−0.0963	−0.0293	0.0880
HEAV2	−0.1626	−0.0498	0.0298	−0.0488
REG2	−0.0485	−0.0306	0.3015	0.0944
REG3	−0.1618	−0.1031	−0.0701	−0.0355
REG4	0.1429	−0.0906	0.02686	−0.1181
REG5	0.1460	0.0365	0.09344	0.0931

Ⅲ. Policy Implications for Narrowing Male-Female Wage Differentials

Indeed, policies for improving the economic status of female workers should be based on ⅰ) fairness in labor market, which means that all should receive a reasonably similiar reward for the equivalent productivity, and ⅱ) the furtherance of ecomomic efficiency.

Here we are proposing four major policies to secure fair and growing economy. In section 1, we present macro-economic and industrial policy as the first best policy for reducing unequal pay inequality between high wage firms(or sector) and low wage firms(or sector). In section 2, we propose micro-level labor market policy relavant to high wage(or

low-wage) firms. In secion 3, micro-economic policy proposals based on human capotal theory will be discussed. In section 4, programms for the new institutional arrangement for facilitating female employment will be taken into considerations. Policies discussed in this chapter will be restricted only to government policies.

1. Industrial Restructuring and Ecomomic Growth

(1) Implementation of Long-Term Industrial Restructuring Policies

Women are primarily employed in the low-wage industries or the low-wage firms. The substantial wage premium paid to workers in high wage firms is detected. It appears that the improved economic status of workers in Korea is achieved more effectively through making industrial structure more competitive by fostering the knowledge-intensive, and technology-intensive small/medium-sized firms. The apparent wage differentials between high-wage firms and low-wage firms would become lessened only when the industrial policy incorporates the transformation of industrial structure and the encouragement of the knowledge-intensive and technology-intensive small/medium-sized firms. This will then eventually help reduce the degree of discrimination at the port of entry into the monopolistic primary sector and enhance the female workers' economic status in the long run. This type of policy may be the first best solution to fairness in labor market and the furtherance of economic efficiency.

(2) Manufacturing Sector-Led Economic Growth

Another alternative measure to enhance the economic status of female workers, which is no less important than industrial restructuring, is to maintain a continuous economic growth and upgrade the share of manufacturing sector in GNP. This absorbs the half-employed family workers, the unemployed or the economically inactive population into the urban labor market. That is, the continuous economic growth emphasizing the manufacturing sector enables the female workers to move from the low-productive sector to the high-productive one, and accordingly facilitates the improvement of wages and

working conditions of the female workers in addition to the achievement of efficient allocation of human resources.

2. Policy for Female Employment in High(or Low)-Wage Firms

(1) Open Job Placement Procedure and Quota System in High-Wage Firms

An intense competition for securing the employment in the high-wage firms produces labor queues in which the prospective employees are waiting in the long line to get hired in the high-wage firms. Taking advantage of this kind of situation, the high-wage firms often show preference of male workers over female workers, as it has become customary practices that only the male worker is hired through regular job opening advertisement while the female worker is employed only when she has personal connection with those already employed. This type of discriminatory action tends to produce unequal job opportunities, and the government must intervene to achieve an equal employment opportunity as well as to promote an open job placement procedure with rationalized hiring principles. As a measure of direct government intervention, the government must enforce an open job placement system under which firms recruit new workers. The distribution of fixed proportion of new recruits to female workers such as a quota system should be implemented, as well.

As a preparatory measure for the quota system, the public authorities or government-owned public enterprises must lead the way. There are 90,000 low-level government officials in Korea ranging from the 9th level to the 6th level among which 12.5% consists of female workers, while only 1.2% of 20,000 high-level government officials between the 5th and 1st levels is composed of female workers. Sex-separated hiring in the official recruiting of high-level government officials could be one way to implement the quota system. The sex discrimination in public enterprises can be illustrated as following. Compared with 38.1% of total employees being female workers in private sectors, the public enterprises contains only 18.0% of female workers out of total employees. The public enterprises whose annual budget reaches 1.7 times as much as the annual budget of the central government take 10.5% in value-added and 2.5% in em-

ployment of Korea's non-agricultural sectors(Lee, 1989), and they definitely belong to the high-wage sector. As Korea's industrialization is known to be lagged behind the developed countries for about 20~30 years, the seriousness of sex discrimination in the public sector can be detected when the current statistic of femal employment in public enterprises of Korea is compared with those statistics in the developed countries 20~30 years ago. In 1975, the proportions of female employment in public sectors were marked by 53.4% in the U.K., 47.5% in the U.S., 64.4% in Sweden and 29.6% in Japan (Eun Cho, 1991). We suggest that the quota system be implemented in the public sector in the first place, which could be extended to the private high-wage sectors after a brief period of evaluation of its performance.

(2) Revision of Equal Employment Opportunity Law and Improvements of its Effectiveness

Simply because they are female, the female workers are either given little employment opportunities of good jobs or, even when they are hired, discriminated in the internal labor market in terms of training, job assignment, job transfer, promotion, dismissal and retirement. The discriminatory action against female workers tends to take form of occupational segregation and/or wage discrimination. The Korean government must show a strong commitment to the Law of Equal Employment Opportunity established in December 4, 1987 and rectified in April 1, 1989 to eliminate deep-rooted sex discriminations in the high-wage sector. For this accomplishment, detailed criteria must be established which determine whether a discriminatory action is undertaken or not, and they must be strongly implemented by the government. At the same time, penalization against any violation of Equal Employment Opportunity Law, which is nominal currently, must be intensified, exceeding the current level, which then leads to the effectiveness of governmental action toward discriminatory practices. An abolishment of any unjustified discrimination against female workers who are able and willing to work would enable the female workers to develop their abilities and skills and attract more participation in the labor market of the female labor force. In this manner, the efficient use of human resources would be achieved, which in turn would enhance the productivity of the whole economy. In other words, the anti-discriminatory policy must be pursued in the context

of which it is a measure to raise the efficiency of the whole economy. As the high-wage firms start seriously striving to implement the elimination of discrimination at the port of entry and in the internal labor market, the social status of females would be enhanced.

(3) Administrative Guidance for Female's Promotion to Managerial Post

We are proposing that in a low-wage production site where more than 500 female workers are employed, occupational segregation must be eliminated so that the promotion of female workers to a managerial post can be readily attained. In Korea, female managers are almost non-existent, and it is difficult for females working in white collar jobs to become promoted to the managerial post. When administrative measures are directed to enforce production sites where more than 500 female workers are employed to abide by the Equal Employment Opportunity Law, the lack of promotion opportunities for female white collar workers would gradually diminish.

3. Human Capital Formation and Subsequent Wage Increase for Female Workers

(1) Broadening Job Training Opportunities for Women

Opportunities for on-the-job training for laborers of manufacturing sector in Korea are rare and also very poor in its content, which has not changed very much for the last fifteen years. The extremely low level of OJT within the manufacturing firms appears constantly across the numerous related studies. For example, the recent survey in 1991 by Bai and Cho(1991) shows that 27.3% of total manufacturing workers received on the job training, and according to Bai and Park(1976), 33.1% of employees in the manufacturing sector received the internal training, which represents little improvement for the past fifteen years.

Furthermore, firm's on-the-job training for women is relatively more scarce than that for men. The most recent survey by Bai and Cho shows that proportion of female employees who have undergone a job training program was 20.7% while that of male

was 33.7%. The 1990's report of the Ministry of Labor on women's job training through the in-plant training center also shows similar results.

As of 1990, the number of women who have gone through the in-plant training program was only 4,665, which is about one-fifth of men's 21,025. The above-mentioned lack of job training opportunities for men and women has resulted from the peculiar situation that employers prefer paying for a job training levies to conducting an in-plant training program. Moreover, employers were even more conservative in providing job training for women even under the currently rare training opportunities. It should also be noted that, as of 1990, 84.4% of in-house training for women was concentrated on the assembly jobs in labor intensive industries such as textile, electronics, foot wear, sewing, and so on.

As mentioned above, women are in a blind spot with regards to in-plant and public job trainings. We would like to present a proposal for public job training program. Aside from the current public job training system, job training centers exclusively for women should be established and operated according to the program which fully reflects the supply and demand characteristics of female labor force. At the same time, the Ministry of Labor should consider an establishment of women's technical colleges or technical high schools. Especially, in such fields as electric and electronics, communications, information processing, safety management, quality control, industry application, environment management, etc. , the vocational education of female labor force through the public job training programs or the technical educations through technical high schools or technical colleges would make substantial contributions to ensuring long-term industrial competitiveness and to sustaining economic growth. And women's employment opportunities in high-wage sectors will be broadened by this type of public job training programs.

(2) Changing Secondary and Tertiary Education for Imparting New Skills to Women

One effective way to enhance women's economic status in industry is through availing to women more educational opportunities aimed at imparting greater and higher level engineering and/or science-related knowledge skills to women. The level of higher educational advancement in Korea has already reached that of many developed countries.

The problem in higher education in Korea is quality, not quantity. As of 1990, only 0.3 % of girls and 15.6% of boys are in technical high schools. As a result, we almost find no females with technical high school diploma. Another serious problem facing high school education is that the graduates from academic high schools increased from 279 thousands in 1981 to 520 thousands in 1989, but the graduates from technical high schools remain almost the same from 59 thousands in 1981 to 65 thousands in 1989. In order to upgrade the technical training for female workers, it is necessary not only to establish girls' technical high schools to educate the type of skills which is consistent with characteristics of female labor supply and scarce but indispensable in the labor market, but also to give special emphasis on technical education to high school advancers, regardless of sex. As for college education, humanities majors has been traditionally preferred to science and engineering majors in Korea. This is particularly true for women. For example, 15.4% of female college students and 38.7% of male college students are majoring in science and engineering. The ratio of college graduates majoring in science and engineering to those majority in humanities and social sciences become from 53.3 : 7 in 1981 to 62.8 : 37.2 in 1990, which reflects on-going excessive emphasis on humanities and soceal sciences majors.

In face of intensified competition in traditional labor-intensive industries such as textiles and electronic industries from other developing countries, both NIEs and the latecomers, and in face of the application of computer aided design and manufacturing (CAD/CAM) in developed countries into traditional labor intensive industries so that the cheap and abundant labor in Korea no longer provides a cost effective substitute for computer aided assembling or factory line work. Continuous advancement and adjustment of industrial structure, based on changing international comparative advantage, should take place in Korea. Demand for machine and equipment operators, engineers and technicians in micro-processing, micro-electronics, CAD/CAM and robotics, electronic and eletric technicians and 'hybrid' managers who possess complex and multiple skills in the fields of engineering, information technology and general management is expected to increase, rapidly in near future.

We are in urgent need for linking education and training with changing skill demands, i.e. demands for information and knowledge intensive workers. To enhance the economic status of female workers in industry, there is a need to increase the intake of female par-

ticipation in the above-mentioned courses offered at the certificate, diploma and degree levels by the educational institutions. Government policy should focus on the qualitative improvement of higher education in science and engineering fields and deveolp a close link between the changes in skill requirement and the manpower supply of educational institutions.

The aging population of the developed world is likely to be less flexible and hence less amenable to the challenges of knowledge and information intensive jobs. The requisite expertise will be in short supply because of the almost stagnant or even declining size of the young college graduated workforce in the developed countries. If Korea succeed in "factor creation" of the requisite techicians, engineers and scientists, the information and knowledge intensive companies of the developed countries will have incentive to relocate their production sites to Korea. If this occurs, Korea may have good chance to move out of labor-intensive, assembly & processing type of industrial structure toward more knowledge-intensive industrial structure. The most serious problem that Korea must resolve is how to make the contents of female's higher education more relevant and responsive to the future skill requirements of the economy.

4. New Institutional Arrangements

(1) Expansion of Labor Union Movements and Their special Attention Given to the Female Labor Problem

The principle of equal pay for equal work will be realized by the force of competition in the labor market very slowly. This principle can be institutionalized more effectively by labor movements.

In Korea, however, labor movements do not seem to have enough bargaining power to improve the wages and working conditions of the workers and thus employers still seems to be in unilateral command. It is the labor union that enables the workers to freely bargain with the employer on an fair basis. The market economy should be operated on the basis of free and fair contracts between the employer and the employees since otherwise the weak party of the employees is destined to be sacrificed in favor of the strong party

of the employer. Thus the government should intervene in the determination process of wages and working conditions to the extent to which reasonable and fair contracts can be written between the two parties. It should also pay attention to the establishment of rules and regulations that promote the balanced negotiating power between the two parties.

The labor union leaders might have tendency to show their interests mainly in improving the wages and working conditions of male workers, neglecting those of female workers, especially in a society where the male is perceived superior to the female. In the case of Germany where the industrial labor union has the strong power, the failure to reduce the differences in wages and working conditions between the male and female workers (Schneider, 1991) gave birth to a peculiar situation in which the wage differences between the two sexes which existed in 1913 still maintains until now. It therefore implies that the strengthening of labor movements should proceed with special attentions given to the female labor problems.

(2) Improvement of Childcare Facility

A government-level effort must be made to build the childcare facilities in order to promote the participation of female population over the age of 25~39 in the economic activity. In addition to the existing legislation that a production site in which more than 1,000 female workers are employed must contain a childcare facility, the Korean government, ever since 1987, has been operating 18 model childcare centers in major public production sites and agricultural production sites. None the less, childcare centers are in great shortage. This can be illustrated as following. The number of places in registered childcare services for children of preschool age (0 to 5 years old) in 117,000, and the rate of coverage calculated by deviding the number of places by the total number of children in that age group is 1.7% in Korea as of 1992, while OECD(OECD, 「Employment Outlook」 chap 5, July 1989) shows that the corresponding figures for the number of places and the rate of coverage are 195,069 and 8.9% in canada, 1,784,193 and 20.6% in Japan, and 322,365 and 47.1% in Sweden, as of 1987. Intensified efforts should be put into increasing the total number of registered child care facilities and the number of places in them so that the coverage rate in Korea rises from the current rate of 1.8% to at least 8 or 9% in near future. Not only the government must increase the number of

childcare facilities, but also it must direct its policy in such a way that a childcare center is accredited with infant social education.

Especially, building high-quality childcare facilities seems to be extremely important. Since we live in an age when people care about good quality of child education due to the recent decline in birth rate, it is very important to have excellent childcare facilities. We hereby propose that we regard childcare centers as public goods.

We have long regarded national defence as public goods in order to protect the country from foreign invasions and to maintain a society of freedom and human integrity. Now we also have to regard childcare centers as public goods in order to protect women from the dominant male-chauvinistic ideology and to maintain a society of women's freedom and integrity. In short, childcare centers should be run by the nation, just as national defence is. Needless to say, sufficient funds should be given to support childcare centers.

Women, currently expected to do only household chores at home, should be particularly encouraged to work together with their husbands. Women should be encouraged to be equally responsible for household income, just as their husbands should be expected to assume the responsibility for housework. Otherwise, women are socially degenerated and women cannot live freely in dignity and integrity. If women work, people will be, to some extents, free from the heavy pressure of wage increase which is persistent when only the husband plays the role of a breadearner.

Korea has enjoyed economic prosperity thanks to the assembly & processing type of industries that depend on abundant inexpensive labor. Currently, however, Korea is suffering from labor shortage and high-wages which seriously damage the international comparative advantages. This labor shortage seems an inevitable outcome of the discrimination and disincentive against women who have not been encouraged to work in society. To solve wemen's problem, both husband and wife must be ensured to pursue the joint income maximization in society and the joint utility maximization at home. For that purpose, the government must assume the full responsibility for childcare facilities.

(3) Establishment of Environmental Conditions for Maternity, Childcare, etc. for the Working Women

Due to their high level of education and changed attitude toward jobs, female workers would not retire because of marriage or delivery and upbringing of infants. This is one aspect of the qualitative changes of female labor force. The current widespread employment practices of dismissal on the ground that they get married and pregnant, even though they have ability and willingness, should be abolished. At the same time, a childcare leave system should be effectively put into practice. Although such provisions as the leave before and after delivery and the childcare leave are provided in the existing Labor Standard Law and Equal Employment Opportunity Law, these provisions are not effective due to a lack of mandatory regulations. In the case of Japan, as a measure to promote and diffuse the childcare leave system, the government has been paying a subsidy for childcare leave to employers concerned since 1975 under the Employment Insurance Law. As for Korea, the same type of subsidy for childcare leave to employers concerned needs to be considered with regard to the employment insurance law which will be enacted in 1995.

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