
Restricted Regular Employees and Compensating Wage Differentials: Theory and Evidence

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The theory of compensating wage differentials predicts that there will be a positive relationship between wages and poor working conditions and that workers are fully compensated for poor working conditions through their wage. In this article, we first present a theoretical model of compensating wage differentials under the assumption of a perfectly competitive labor market to confirm these predictions. We then show that empirical studies have found evidence that contradicts these theoretical predictions. Specifically, we introduce studies that show the following: (i) workers are not matched with their desired working conditions, and those workers who report dissatisfaction with their hours change employers to work in jobs that are more consistent with their preferred hours; and (ii) workers are overcompensated for poor working conditions. We provide two theoretical models that are more consistent with the observed empirical patterns. The first is an equilibrium labor search model in which a job is a package of wages and working hours, while the second is a “rat-race” model in which professional employees are required to work inefficiently long hours. Finally, we offer suggestions for offering more flexible jobs (e.g., restricted regular employees) in the Japanese labor market.

I. Introduction

Employment arrangements for workers have become more diverse and now include regular employment, non-regular employment (e.g., part-time work, fixed-term contracts), and more recently, restricted regular employment. In this paper, we apply the compensating wage differential hypothesis to discuss whether restricted regular employment is a new employment arrangement that can accommodate the preferences of diverse workers in Japan.

In Section II, we first present a theoretical model of compensating wage differentials under the assumption of a perfectly competitive labor market. In a perfectly competitive labor market, workers who prioritize comfortable working conditions work in comfortable conditions, while those who place less priority on comfortable working conditions do not work under such conditions. Conversely, firms that can provide comfortable working conditions at low cost provide jobs in comfortable working conditions, while others do not provide such working conditions when the cost of providing them is too high. As a result, in equilibrium, a wage premium is paid for jobs that do not offer comfortable working conditions, and workers are fully compensated by their wage to work in jobs that do not offer comfortable working conditions. In this way, efficient matching is achieved, such that

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workers are matched to jobs that offer their desired working conditions, and employers hire workers to maximize their profit.

In Section III, however, using data from Japan and the United States, we show that a significant proportion of workers are not satisfied with their working conditions (namely, working hours in our example) and that they are either overemployed or underemployed. Furthermore, we show that the wage premium paid to work in predominantly male jobs (which tend to offer negative job characteristics) overcompensates for the negative job characteristics in such jobs. These results indicate that predictions from the compensating wage differential hypothesis that assume a perfectly competitive labor market are not consistent with the empirical evidence.

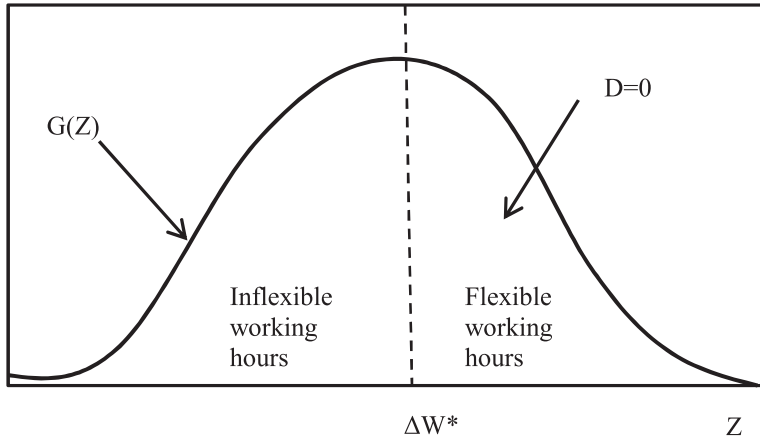
Section IV presents a model of compensating wage differentials that is more consistent with the observed empirical patterns. First, we present an equilibrium labor search model in which a job is a package of wages and working hours. Workers who prefer shorter working hours may not be able to work in these types of jobs due to the presence of frictions in the labor market, which results in inefficient matching. Second, we present a “rat-race” model in which firms cannot observe workers’ motivation, and workers work inefficiently long hours to show that they are high productivity workers, again resulting in inefficient matching.

In the final section, we discuss whether restricted regular employment is an employment arrangement that can accommodate diverging workers’ preferences. Restricted regular employment is an open-ended contract for a regular employee, but the nature of the work, workplace, and working hours is restricted. This employment arrangement is becoming popular in Japan because it is viewed as an employment arrangement with an open-ended contract but workers who want to balance work with home can do so more easily. Using the model on compensating wage differentials, we explain the sustainability of this employment arrangement and explain how the wage differences between regular employees and restricted regular employees will be determined.

II. What Is the Compensating Wage Differential Hypothesis?

The compensating wage differential hypothesis posits that workers’ wages are higher for jobs that offer disamenity than for those that do not offer disamenity. That is, a wage premium is paid to workers to compensate for the disamenity of their work. Under this hypothesis, workers who place a priority on comfortable working conditions opt for comfortable working conditions even if the wages are lower, while those who place less priority on such working conditions choose jobs with higher wages even though comfortable working conditions are not provided. Additionally, firms that can provide comfortable working conditions at low cost will provide jobs with comfortable working conditions, while other firms will not provide such working conditions when the cost of doing so is too high.

Papers that analyze the compensating wage differential hypothesis include Rosen



Source: Goldin and Katz (2011).

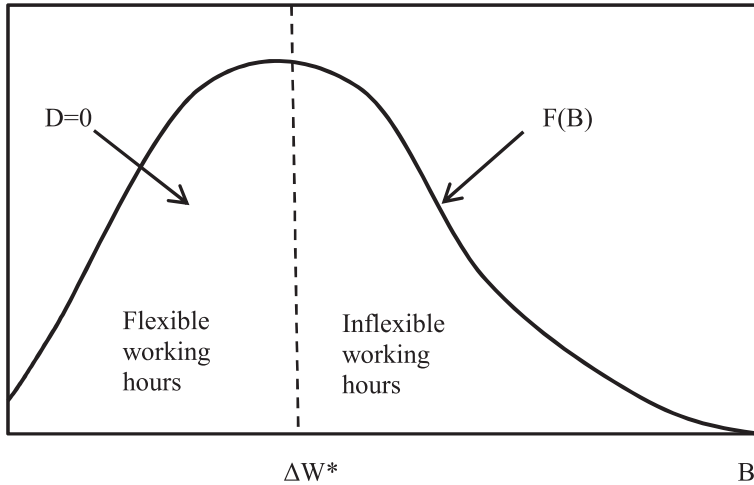
Figure 1. The Amount of Consumption That Workers Require to Work in Jobs with Inflexible Working Hours: $G(Z)$ Distribution

(1986) and Goldin and Katz (2011). In this section, the compensating wage differential hypothesis will be explained by following Goldin and Katz (2011).¹

There are two types of jobs on the labor market—jobs with flexible working hours ($D=0$) and jobs with inflexible working hours ($D=1$). Workers consider not only wages but also the flexibility of hours on the job. They obtain utility from consumption C and working hours inflexibility D , such that the utility for workers is expressed as $u=U(C, D)$. All workers prefer jobs with flexible working hours ($D=0$) over jobs with inflexible working hours ($D=1$). However, the degree of aversion to inflexible working hours differs by worker.

Let the consumption when one works in a job with flexible working hours ($D=0$) be C_0 and let the consumption when one works in a job with inflexible working hours ($D=1$) be C^* . The condition required for workers to evaluate jobs with inflexible working hours as equal to jobs with flexible working hours is $U(C^*, 1)=U(C_0, 0)$. Because jobs with inflexible working hours ($D=1$) are disliked more than jobs with flexible working hours ($D=0$), consumption satisfies the condition $C^* \geq C_0$. Therefore, $Z=C^*-C_0 \geq 0$ is the compensating variation, which is the amount of consumption demanded by a worker when working in a job with inflexible working hours. Because the degree of aversion to working hours inflexibility differs by worker, the compensating variation Z will also differ by worker. Figure 1 displays the distribution of compensating variation Z in the labor market as $G(Z)$. Conversely, the wage premium earned by workers who work in jobs with inflexible working hours ($D=1$) compared to jobs with flexible working hours ($D=0$) is the compensating wage differential, expressed as $\Delta W (=W_1-W_0)$.

¹ Other papers and textbooks that provide explanations of the compensating wage differential hypothesis include Otake (1998), Ota and Tachibanaki (2004), Omori (2008), and Borjas (2013).



Source: Goldin and Katz (2011).

Figure 2. The Cost for Firms to Provide Jobs with Flexible Working Hours: $F(B)$ Distribution

On the one hand, workers belonging to the $\Delta W < Z$ field on the right of the $G(Z)$ distribution in Figure 1 prefer jobs with flexible working hours to jobs with inflexible working hours. For them, the wage premium ΔW earned for working in jobs with inflexible working hours does not sufficiently compensate for the disamenity of the job, and they therefore prefer to work in jobs with flexible working hours ($D=0$). On the other hand, workers belonging to the $Z \leq \Delta W$ field on the left of the $G(Z)$ distribution in Figure 1 are less averse to working in jobs with inflexible working hours. For them, the wage premium ΔW earned for working in jobs with inflexible working hours sufficiently (or more than sufficiently) compensates for the disamenity of the job, and they thus prefer to work in jobs with inflexible working hours ($D=1$). As a result, workers who are more averse to jobs with inflexible working hours (i.e., workers with larger Z) tend to work in jobs with flexible working hours.

Next, let us examine the actions of firms in the labor market. Firms offer jobs with wages and inflexible or flexible working hours ($D=1$ or $D=0$). Firms can provide jobs with inflexible working hours at no cost, but they incur a cost B when providing jobs with flexible working hours. Such costs are incurred because, to provide flexible working hours, for example, firms must change personnel allocations and secure equipment for accessing internal networks. Here, the cost B of providing jobs with flexible working hours differs across firms. Figure 2 displays the distribution $F(B)$ of the cost of providing jobs with flexible working hours in the labor market. Firms pay a wage premium ΔW to workers who perform jobs with inflexible working hours.

In this situation, firms belonging to the $\Delta W \leq B$ field on the right of the $F(B)$ distribu-

tion in Figure 2 will earn a higher profit by paying the wage increment ΔW to workers while maintaining inflexible working hours than by incurring cost B to make working hours flexible. This result occurs because the cost B incurred in providing jobs with flexible working hours is too high for these firms. Therefore, this type of firm opts to provide jobs with inflexible working hours ($D=1$). Conversely, firms belonging to the $B < \Delta W$ field on the left of the $F(B)$ distribution in Figure 2 provide jobs with flexible working hours at a low cost B . For these firms, incurring the cost B to make jobs more flexible and hence not paying the wage increment ΔW provides them with a higher profit than providing inflexible working hours and paying the wage increment ΔW to the workers. Therefore, this type of firm provides jobs with flexible working hours ($D=0$). Thus, firms who can provide more flexible working hours at a lower cost tend to provide jobs with flexible working hours.

Now let us consider the equilibrium in a perfectly competitive labor market. When the number of workers who prefer to work in jobs with inflexible working hours exceeds the number of vacancies for jobs with inflexible working hours, it creates a labor oversupply, and the wage premium ΔW paid for jobs with inflexible working hours decreases. Conversely, when the number of workers who prefer to work in jobs with inflexible working hours falls short of the number of vacancies for jobs with inflexible working hours, the opposite occurs, and the wage premium ΔW increases. In equilibrium, therefore, the wage premium ΔW^* paid for jobs with inflexible working hours is adjusted so that the number of workers who prefer to work in jobs with inflexible working hours (the $Z \leq \Delta W$ field on the left of the $G(Z)$ distribution in Figure 1) is equal to the number of vacancies for jobs with inflexible working hours (the $\Delta W \leq B$ field on the right of the $F(B)$ distribution in Figure 2).

We have explained a model in which there are only two types of jobs on the labor market, i.e., jobs with flexible working hours ($D=0$) and jobs with inflexible working hours ($D=1$). Next, we consider a situation in which the inflexibility D of working hours differs across jobs. Here, too, workers work in jobs that provide wages and a degree of inflexibility of the working hours that maximizes their own utility, while firms provide wages and a degree of inflexibility of the working hours that maximizes their profit. In other words, in equilibrium, workers who place a high value on flexible working hours work for firms that provide such jobs at a lower cost. Accordingly, in a perfectly competitive labor market equilibrium, Pareto efficient matching is established (i.e., a situation in which the economic welfare of workers or firms can no longer be arbitrarily raised without also lowering the economic welfare of firms or workers, respectively). In the case of jobs with flexible working hours ($D=0$) and jobs with inflexible working hours ($D=1$), as discussed above, wages are higher in the latter. Similarly, in cases where the inflexibility D of working hours differs from job to job, wages in the labor market and the inflexibility of working hours show an upward-sloping relationship. This relationship is known as the Hedonic wage function. The slope of the Hedonic wage function expresses the increase in the equilibrium wage when the inflexibility D of working hours is increased by one unit. It expresses the compensating variation necessary to be received by a worker when working in a job with inflexible work-

ing hours.

So has this type of efficient matching been achieved in reality? To achieve efficient matching, workers must be able to choose working hours and working conditions that will maximize their own utility. In the next section, we empirically answer this question.

III. Are Workers Satisfied with Their Working Conditions?

In a perfectly competitive labor market, individuals choose their consumption and leisure time to maximize their utility, given their wage rate. However, Altonji and Paxson (1988), among others, using data from the United States, find that many workers are not perfectly matched to jobs that have their desired working hours.² In this section, we examine whether Japanese workers are perfectly matched to jobs that have their desired working hours using the 2012 Japanese Longitudinal Survey on Employment and Fertility (LOSEF), which is a survey conducted as part of the “Economic Analysis of Intergenerational Issues,” supported by Grant-in-Aid for Specially Promoted Research from the Japan Society for the Promotion of Science (PI: Noriyuki Takayama). The LOSEF surveyed 7,114 men and women between the ages of 20 and 50 in 2012.

To capture a job’s working hours constraints, we construct binary variables of overemployment and underemployment based on the respondents’ responses. Specifically, we allocate one to the overemployment variable if the respondent answered “No” to “(Not counting overtime hours,) could you reduce the number of paid hours in your regular work schedule?” and “Yes” to “Would you like to do so even if your earnings were reduced in the same proportion?” and zero otherwise. We allocate one to the underemployment variable if the respondent answered “No” to “Could you increase the number of paid hours in your regular work schedule?” and “Yes” to “Would you like to do so if your earnings were increased in the same proportion?” and zero otherwise.³

Table 1 shows the number and ratios of workers who are overemployed, underemployed, and are satisfied with their working hours by gender and employment status from the LOSEF sample. In total, 11.3 percent of men are overemployed and 8.2 percent of women are overemployed, while those who are underemployed account for 11 percent of both genders. In sum, approximately 20 percent of workers are in some way dissatisfied with their working hours. A total of 12.1 percent of women who are regular employees are overemployed, while 10.7 percent of women who are non-regular employees are

² Furthermore, using the U.S. Panel Study of Income Dynamics (PSID), Altonji and Paxson (1988) show that people who report overemployment or underemployment tend to change employers to work in positions that are more in line with their preferred hours.

³ Hara and Sato (2008) reveal a gap between hope and reality in terms of working hours among regular employees who work 50 or more hours per week and have burdens of responsibility in their work. Hara and Sato use the question “Would you like to reduce or increase your working hours?” and present three response options: “Want to increase,” “Don’t want to change,” and “Want to reduce.”

Table 1. The Relationship between Hours Constraints and Employment Status

| | Overemployed | Underemployed | Satisfied | Total |
|---------------|---------------|---------------|----------------|-----------------|
| Men | | | | |
| Regular | 320 (12.1) | 298 (11.3) | 2020 (76.6) | 2638 (100.0) |
| Non-regular | 25 (6.9) | 39 (10.7) | 299 (82.4) | 363 (100.0) |
| Self-employed | 14 (8.1) | 12 (7.0) | 146 (84.9) | 172 (100.0) |
| Total | 359 (11.3) | 349 (11.0) | 2465 (77.7) | 3173 (100.0) |
| Women | | | | |
| Regular | 109 (11.1) | 78 (8.0) | 793 (80.9) | 980 (100.0) |
| Non-regular | 82 (6.0) | 183 (13.4) | 1103 (80.6) | 1368 (100.0) |
| Self-employed | 6 (11.1) | 1 (1.9) | 47 (80.6) | 54 (100.0) |
| Total | 197 (8.2) | 262 (10.9) | 1943 (80.9) | 2402 (100.0) |

Note: The upper row shows the number of observations and the lower row (in parentheses) shows the share (%).

underemployed.

We estimate a probit model that relates the overemployment and underemployment indicators to the demographic and employment characteristics in Table 2. Women are 3.1 percent more likely to be overemployed than men, while conversely, men are 3.0 percent more likely to be underemployed than women. Married workers are more likely to be overemployed and less likely to be underemployed. Women and married workers are overemployed, perhaps because they have greater family responsibilities. Non-regular employees are more likely to be underemployed. In conclusion, similar to the U.S., Japanese workers are also not perfectly matched to their desired working conditions.

Many studies have found that there is a positive relationship between wages and occupations with higher proportions of men.⁴ Usui (2009) examines whether the wage premium associated with working in predominantly male jobs compensates for the negative job characteristics of such jobs.

To examine this question, Usui (2009) uses the idea of labor search models. Workers who voluntarily quit to take another job move to jobs that give them higher total utility, but

⁴ Men tend to be employed in jobs that pay higher wages, that require higher skill levels, and that have more demanding working conditions than women. This phenomenon is known as occupational segregation by gender.

Table 2. Probit Estimate of Determinants of Hours Constraints

| Independent variable | Overemployed | | | Underemployed | | |
|-------------------------|--------------|----------------|-----------------|---------------|----------------|-----------------|
| | (1) | | | (2) | | |
| | Coefficient | Standard error | Marginal effect | Coefficient | Standard error | Marginal effect |
| Female | 0.139 ** | 0.063 | 0.030 | -0.120 ** | 0.061 | -0.029 |
| Married | 0.125 * | 0.064 | 0.027 | -0.147 ** | 0.062 | -0.037 |
| Divorced/separated | -0.015 | 0.121 | -0.003 | 0.106 | 0.114 | 0.027 |
| Less than high school | 0.009 | 0.191 | 0.002 | -0.095 | 0.189 | -0.022 |
| Some college | 0.010 | 0.075 | 0.002 | -0.121 * | 0.072 | -0.029 |
| University | -0.054 | 0.070 | -0.012 | -0.084 | 0.067 | -0.021 |
| Non-regular employment | -0.087 | 0.073 | -0.018 | 0.116 * | 0.070 | 0.029 |
| Self-employment | 0.006 | 0.138 | 0.001 | -0.102 | 0.141 | -0.024 |
| Experience | -0.003 | 0.013 | -0.001 | 0.018 | 0.013 | 0.004 |
| Experience ² | 0.002 | 0.004 | 0.0003 | -0.002 | 0.004 | -0.0004 |
| Hours per week | 0.021 ** | 0.002 | 0.005 | -0.002 | 0.002 | -0.001 |
| Constant | -2.079 ** | 0.164 | | -0.898 ** | 0.154 | |
| Log Likelihood | -1605.55 | | | -1671.59 | | |
| Pseudo R ² | 0.046 | | | 0.016 | | |
| N | 4060 | | | 3793 | | |

Note: All models include an indicator variable for region and city size. Robust standard errors are in parentheses.

* $p < 0.05$, ** $p < 0.01$.

those who are involuntary laid off have to accept jobs from the representative distribution of job offers.

Suppose that the wage premium paid in predominantly male jobs overcompensates for the negative job characteristics of such jobs. In this overcompensating case, the typical move to more predominantly male jobs increases the workers' total utility. When workers voluntarily quit to take predominantly female jobs, they receive a high job-match-specific error component because they are more selective of their new jobs. Therefore, the coefficient of the change in the proportion of men in an occupation on the change in wages using the quit sample is a downward-biased estimate of the wage premium paid for predominantly male jobs. Next, due to prior job shopping, workers in predominantly female jobs tend to have an unusually good job-match-specific error component. If these workers are laid off and they move to predominantly female jobs, they incur a greater wage loss, on average, because layoffs are less selective of their new jobs compared to their previous jobs. The coefficient of the change in the proportion of men on the change in wages using the layoff sample is an upward-biased estimate of the wage premium. As a result, the coefficient of the change in the proportion of men on the wage-change using the quit sample provides a lower bound of the wage premium, while that using the layoff sample provides an upper bound.

When the premium paid for male jobs undercompensates for negative job characteristics, the direction of the bias for quits and layoffs is reversed. Thus, the coefficient of the

change in the proportion of men on the wage-change using the quit sample provides an upper bound of the wage premium, while that using the layoff sample provides a lower bound.

Using the U.S. National Longitudinal Survey of Youth 1979 (NLSY79) and the Panel Study Income Dynamics (PSID), Usui (2009) finds that the estimated wage premium paid for predominantly male occupations using the quit sample was smaller than that using the layoff sample. Therefore, the wage premiums paid for predominantly male jobs overcompensate for the negative working conditions in the predominantly male occupations.⁵

Furthermore, using job satisfaction data from the National Longitudinal Survey of Youth 1979 (NLSY79), Usui (2008) finds that (i) when moving to predominantly male occupations, men are more satisfied with their wages and working conditions (workplace environment, friendliness of coworkers, work motivation, etc.), while women are more satisfied with their wages but less satisfied with the working conditions; and (ii) when moving to predominantly male occupations, men and women are both satisfied with their jobs overall, but this effect is significant for men and not for women. For women, therefore, the wage premium paid for working in a predominantly male occupation compensates for the negative job characteristics of that job.

In conclusion, the wage premium in predominantly male jobs overcompensates for the poor working conditions, and therefore, both men and women overall prefer predominantly male occupations to predominantly female occupations. Therefore, we find empirical evidence that workers are also not perfectly matched to their desired working conditions.

IV. Why Is an Efficient Equilibrium Not Achieved?

In a perfectly competitive labor market, workers are matched to jobs that offer wages and working conditions that maximize their own utility, and firms employ workers by offering wages and working conditions that maximize their own profit. However, empirical results using Japanese and U.S. data reveal that a significant proportion of workers are not satisfied with their working hours. Furthermore, Usui (2009) indicates that the wage premium paid for predominantly male jobs overcompensates for the poor working conditions in such jobs, indicating that workers' total utility is higher in predominantly male jobs. Therefore, constructing a model of compensating wage differentials in the framework of a perfectly competitive labor market is not consistent with the empirical results. In this section, we provide two theoretical models that show that an equilibrium can arise in which workers are not necessarily located in jobs that offer them their desired working conditions.

First, we consider a model of compensating wage differentials in the framework of search frictions. The model is constructed by Usui (2015), and it extends the equilibrium

⁵ When quits and layoffs are used to estimate the wage premium paid for working in predominantly male jobs, these estimates represent the upper and lower bounds, respectively, of the estimated true wage premium paid for predominantly male jobs. Using the NLSY and the PSID, the estimated wage premium paid for predominantly male jobs is larger compared to that of previous studies.

search model of Burdett and Mortensen (1988) so that the utility of a worker depends on not only salary but also working hours. Firms make a tied salary/hours offer to maximize their steady-state profit flow. Workers search for jobs while unemployed and employed and move to jobs that offer better tied salary/hours packages. Firms obtain a greater number of workers if they offer them higher utility, but their profit earned per worker decreases.

There are men and women in the labor market, and women are assumed to have a stronger aversion to working hours than men do. Because of the presence of search frictions, jobs are not completely segregated by gender. Men and women quit and move to jobs that offer them higher utility. Because women are more averse to long working hours, they prefer jobs with shorter working hours even if the wages are lower. Jobs with these short working hours are provided by firms with low marginal productivity. Conversely, because men are less averse to long working hours, they prefer jobs that offer higher wages and require longer working hours. These jobs are offered by firms with higher marginal productivity. However, because of the presence of search frictions, in equilibrium, there are more women in jobs that offer shorter working hours, but there remain some women in jobs that offer long working hours who are looking forward to the opportunity to change to jobs with shorter working hours. Meanwhile, there are more men in jobs that offer longer working hours, but there remain some men in jobs that offer shorter working hours who want to change to jobs with longer working hours. Therefore, workers job shop to move to jobs that give them higher utility in the framework of a search under conditions of search frictions.

Usui (2015) shows, by further introducing a model of taste-based discrimination against women à la Becker (1971), that firms experience a disutility from hiring women. In response, firms make their job offers unappealing to women by requiring more working hours. Women who are more averse to long working hours prefer to be unemployed rather than to work in such jobs. As a result, the number of women employed at such jobs declines.

Next, we use the rat-race model to explain why some workers work inefficiently long hours. The rat-race model is used to explain situations in which workers in specialist professions such as attorneys, business consultants and researchers could, at shallow points in their careers, find themselves working long hours to the detriment of their family formation and private lives. First, in pioneering research by Akerlof (1976), the rationale of adverse selection, arising under conditions in which asymmetry of information exists, is used to show theoretically that overwork occurs. In addition, Landers, Rebitzer and Taylor (1996, 1997) use the example of attorneys to show that, in equilibrium, a situation arises in which attorneys work beyond the working hours that maximize their own utility based on the wages provided.

The rat-race model of Landers, Rebitzer and Taylor (1996, 1997) assumes that there are two types of attorneys in the labor market, namely, those who are averse to long working hours and those who are not so averse to long working hours. It also assumes that there are two phases of employment and two employment formats (individual law offices and

large law firms) for attorneys. When setting up and working in individual law offices, attorneys' wages are consistent with marginal productivity in both the 1st and 2nd phases of employment. Conversely, when working for large law firms, attorneys work as untenured associates in the 1st phase, and their wages are consistent with marginal productivity. In the 2nd phase, they are promoted from associate to partner, and their productivity increases due to the acquisition of knowledge about specific clients. Due to asymmetry of information, attorneys' preferences for working hours cannot be observed in large law firms. However, because longer working hours equate with greater productivity for large law firms, such firms prefer to employ attorneys who are not so averse to long working hours. Thus, to maximize their profits, large law firms offer long working hours to the extent that attorneys who dislike long working hours appear to be considered unprofitable. If this condition is satisfied, only those attorneys who are not so averse to long working hours will work for large law firms. Conversely, attorneys with an aversion to long working hours will work for individual law offices. Landers, Rebitzer and Taylor (1996, 1997) show that there is an equilibrium that satisfies this condition. Specifically, this equilibrium leads to inefficient working hours, such that attorneys who are not averse to long working hours in reality work beyond the working hours that would maximize their own utility based on the wage paid.

V. Possibility of the Further Diffusion of Diversification of Standard Employment

In recent years, restricted regular employees—who have an open-ended contract similar to a regular employee, but the nature of the work, workplace, working hours is restricted—have received increased attention as an employment arrangement that achieves a work-life balance. According to an employee survey conducted by the Ministry of Health, Labour and Welfare in 2012 (a survey on Diversification of Regular Employment), 63.2 percent of the respondents reported that they wanted to change their employment arrangement from regular employees to work-location-restricted regular employees in the next 5 years (Employment Measures for the Dispatched and Fixed-term Workers Department, Security Bureau, Ministry of Health, Labour and Welfare 2012).⁶ However, there is an issue of how to establish the terms of the employment arrangement between restricted regular employees and regular employees. In this section, we utilize the theoretical model of compensating wage differentials presented in Section II to discuss how to determine the different terms of employment between restricted regular employees and regular employees. Similarly to Goldin and Katz (2011), we consider that firms incur a cost when providing restricted regular employment.

Restricted regular employees have increased factors attributable to workers and firms.

⁶ Regular employees have no constraint or restriction on their job type, place of work, working hours, etc.

Let us first consider factors attributable to workers. As shown in Figure 1, the $G(Z)$ distribution shifts to the right if the number of workers preferring to work under a flexible employment arrangement as restricted regular employees increases. If that occurs, the number of workers belonging to the $\Delta W < Z$ field on the right of the $G(Z)$ distribution will increase. The number of workers preferring to work in restricted regular employment will increase, exceeding the number of vacancies in firms offering such arrangements. In the new equilibrium, therefore, restricted regular employment will increase, the wage premium ΔW^* paid to regular employees will increase, and the wage differential between restricted regular employees and regular employees will widen.

Next, let us consider factors attributable to firms. For firms, it has become possible to provide restricted regular employment without a major increase in cost. In that case, the $F(B)$ distribution will shift to the left in the model of compensating wage differentials in Figure 2. If that occurs, the number of firms belonging to the $B < \Delta W$ field on the left of the $F(B)$ distribution will increase, and the number of vacancies in firms providing restricted regular employment will exceed the number of workers wanting to perform those jobs. In the new equilibrium, therefore, restricted regular employment will increase, the wage premium ΔW^* paid to regular employees will decrease, and the wage differential between restricted regular employees and regular employees will narrow.

Thus, based on factors attributable both to workers and to firms, the number of workers working in restricted regular employment will increase. However, while the wage differential between restricted regular employees and regular employees will widen if more workers aspire to restricted regular employment, the wage differential will shrink if the cost for firms of providing restricted regular employment decreases.

To make restricted regular employment more widespread, firms will likely have to be able to provide such working arrangements at low cost. For example, in the case of work-location-restricted regular employees, it will be easier for firms to dismiss workers when closing business sites, as this arrangement does not necessitate staff relocation. However, there will be a greater risk of litigation in cases of dismissal. Therefore, if the government could prescribe fixed standards for addressing business site closures, firms would be able to reduce the litigation risk accompanying dismissals, and the provision of work-location-restricted regular employees could therefore increase. However, because reducing the litigation risk accompanying dismissals is not desirable from the workers' point of view, the number of workers hoping to become work-location-restricted regular employees might not increase in that case.

Moreover, firms may not necessarily be able to secure superior workers even if they provide restricted regular employment because, based on the rat-race model of Landers, Rebitzer and Taylor (1996, 1997), if firms cannot easily observe workers' work motivation, they screen workers by imposing unnecessarily difficult working conditions. Therefore, jobs in which restricted regular employment is provided could be limited to those in which it is easy for firms to observe workers' work attitude and motivation or those in which produc-

tivity is not increased by working long hours.

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