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Insecurity of Employment and Work-Life Balance: From the viewpoint of compensating wage differentials

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Insecurity of Employment and Work-Life Balance: From the Viewpoint of Compensating Wage Differentials*

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(Abstract)

This paper presents survey-based evidence on the "fair" compensating wage differentials for insecurity of employment and lack of work-life balance (WLB). We present facts about individual perceptions of the desirable compensating differentials and then estimate the effects of working hours and wages on job satisfaction. The fair wage premiums for insecurity of employment and lack of WLB are both around 10% to 20%. The actual relative wages of nonstandard workers seem to be lower than those in the hedonic equilibrium. If "short-hour regular jobs" are characterized by both strong employment protection and WLB, the relative wage discount of 10% to 20% coincides with the average worker's perception of fairness. Working hours have a negative effect on job satisfaction and the wage level has a positive effect on job satisfaction, but the magnitudes of the effects differ between male and female workers. In order to achieve diversity of working styles, work schedule flexibility should be accompanied by a wage adjustment, which would contribute to the adoption and diffusion of WLB practices.

Keywords: compensating wage differential, nonstandard employment, work-life balance, job satisfaction

JEL Classification：J28, J31

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1. Introduction

The purpose of this paper is to present survey-based evidence on the "fair" compensating wage differentials for insecurity of employment for nonstandard workers and lack of work-life balance (WLB) for typical standard workers in Japan.

Under the trends of increasing female labor participation, decreasing birthrates, and workers' changing values, work-life balance attracts the attention of policy makers in many advanced countries. In Japan, the Work-Life Balance Charter and the Action Program towards Work-Life Balance were established in 2007. The key phrase was "diversity in working styles." The Action Program set numerical targets for advancement of the labor participation rate and labor productivity per hour, the reduction of excessive working hours, the take-up rate of paid annual leave, diffusion of the "short-time standard worker system," etc.[1] The New Growth Strategy, adopted by the Cabinet in June 2010, declared to realize work-life balance by increasing the take-up rate of paid annual leave to 70% and reducing the number of employees working more than 60 hours a week by 50% by 2020.

At the same time, the polarization of jobs caused by the increase in non-standard workers is becoming a serious policy agenda. According to the Labor Force Survey, the number of temporary agency workers in Japan increased from 80 thousand in 1999 to 1,400 thousand in 2008. After the global economic crisis in the autumn of 2008, the sudden firing of temporary agency workers became a political issue, and the Democratic Party's Cabinet proposed the revision of the Worker Dispatching Law to make the regulations more stringent.[2] In the New Growth Strategy, provision of the Secondary Safety Net and job training programs for nonstandard workers are included as policy measures to solve the polarization problem. The globalization of economic activities, rapid technological innovation, a shortened product life cycle, and market deregulation contribute to instability in firm performance, which compels firms to flexibly adjust their labor input, increasing the demand for nonstandard workers (see Morikawa, 2010). At the same time, workers' preference towards a more flexible working schedule also contributes to the increase in nonstandard workers.

Under these circumstances, the introduction and diffusion of a moderate work style that falls between traditional standard work, in which one's job is secured but lacks flexibility, and nonstandard work, which is flexible but unsecured, is advocated by the Government. The Action

[1] The Charter and the Action Plan were revised in 2010.
[2] The revision is still under review by the Diet.

Plan mentioned above set targets to increase the percentage of workplaces where short-time standard work is available to 10% by 2012 and 25% by 2017.

Although it should be noted that work-life balance is not identical to the reduction of working hours, according to the Survey of the Nation's Life (Cabinet Office), a large number of people have given priority to increasing income over increasing leisure. In the 2009 Survey, the number of people who wanted to increase income was about 50% higher than the number of people who prioritized leisure. That is, the majority of people give more importance to getting more income than free time. It is difficult to find a job with both high compensation and sufficient flexibility, because working conditions and wages are closely linked. From the viewpoint of individual workers, it is a matter of preference between favorable working conditions with flexibility and higher wages with inflexible working schedule. In order to improve work-life balance or a moderate work style, we should deepen our understanding of the trade-off between working conditions and wages quantitatively.

This paper presents survey-based evidence on the compensating wage differentials for insecurity of employment and lack of work-life balance that individual workers perceive as fair and desirable. In addition, by using a job satisfaction index, we estimate the trade-off between wages and working hours.

According to the analysis, from the workers' perspective, the fair compensating wage differential for insecurity of employment is between 10% and 20% of total compensation. This figure suggests that the actual relative wages of nonstandard workers may be lower than those in the hedonic equilibrium and that raising their relative wage level could be justified under increasing demand for a labor force with lower adjustment costs. On the other hand, the fair wage differentials for a lack of work-life balance resulting from various restrictions specific to traditional standard employees is also between 10% and 20%. If short-hour regular jobs are characterized by a combination of both strong employment protection and work-life balance, the relative wage discount of 10% to 20% coincides with the average worker's perception of fairness, which in turn will contribute to the adoption and diffusion of jobs that support work-life-balance. As expected, working hours have a negative effect and wage levels have a positive effect on the job satisfaction index. Quantitatively, a combination of a 10% reduction in working hours and a 6% to 12% reduction in the hourly wage has a neutral effect on subjective job satisfaction. However, male workers have a stronger preference for high wages than female workers, suggesting that it is more difficult to reduce the working hours of male workers.

The rest of this paper is structured as follows. Section 2 briefly reviews the literature on compensating wage differentials and on work-life balance. Section 3 describes the data employed and

the method of analysis. Section 4 reports the results. Section 5 presents conclusions with policy implications.

2. Literature Review

Compensating wage differentials (or equalizing differentials) is the wage premium or discount required to equalize the benefit to workers of jobs with different working conditions such as risks to health, exposure to pollution, stressful work, or lack of flexibility. Rosen (1986) is a representative survey on this issue. The traditional empirical approach is to estimate a hedonic wage equation augmented by job characteristics such as the physical risks of a job and to measure the wage premium or discount of the job attributes. The application of the compensating differentials is wide-ranging through labor economics, but we briefly review the literature directly related to this paper.

Li (1986), Moretti (2000), and Del Bono and Weber (2008) are examples of estimations of compensating wage differentials for insecurity of jobs. Li (1986) estimates the wage function using panel data on individuals in the U.S. and finds significant compensating wage differentials corresponding to inter-industry differences in the risk of unemployment. Moretti (2000), using data on U.S. agricultural workers, estimates compensating wage differentials for the risk of unemployment. According to the results, there exists a compensating differential of 15.5% of the average wage for seasonal workers who face a higher risk of unemployment. Del Bono and Weber (2008), using Australian longitudinal social security records, investigate the existence of compensating wage differentials for seasonal jobs. They find that employers pay a wage premium of about 11% for seasonal jobs.

As for part-time work, Booth and Wood (2008) investigate part-time/full-time hourly wage gaps using Australian panel data (Household, Income and Labour Dynamics in Australia : HILDA). After controlling for unobserved individual heterogeneity, they find that male and female part-timers earn an hourly wage premium. They interpret the results to mean that the part-time pay premium is a compensating wage differential for the lack of holiday and sick pay entitlements.

Altonji and Paxson (1988), Kostiuk (1990), Lanfranchi et al. (2002), Villanueva (2007), Heywood et al. (2007), and Booth and van Ours (2008) are examples related to compensating differentials for the restriction of working time and for lack of work-life balance. Altonji and Paxson (1988) analyze the trade-off between work hours and wages using the Panel Study of Income Dymanics (PSID) data

on U.S. job changers. Specifically, their empirical analysis investigates how wage changes are affected by interactions between the change in hours and over-employment/under-employment at the old job and at the new job. They find that an individual requires a compensating wage premium to work at a job that offers unattractive hours. Kostiuk (1990) analyzes compensating differentials for shift work—work with nonstandard hours—in the U.S. and finds a wage premium for shift work after correcting for the bias caused by individuals' self-selection. Lanfranchi et al. (2002) also estimate compensating wage differentials for shift work using French matched employer–employee data for full-time blue-collar male workers. They find a significant shift premium: the wage rate for shift workers was 16% higher than that for day workers. Villanueva (2007) estimates compensating wage differentials for jobs with disamenities, such as a heavy workload and an unpleasant working schedule, in Germany using longitudinal data (German Socio-Economic Panel: GSOEP) on voluntary job changes. According to the results, compensating wage differentials for a heavy workload are between 3.5% and 4.8%, and for an unpleasant work schedule they are between 0% and 5.1%. Heywood et al. (2007) estimate the wage function using U.K. linked employer-employee data (Workplace Employment Relations Survey: WERS) and investigate compensating wage differentials for family-friendly work practices at business establishments. The practices include job sharing, parental leave, the ability to work at home, flexible working hours, a nursery or support for childcare, and the ability to take time off and make up for it later. They find that family-friendly practices are related to a compensating wage discount of about 20%, suggesting that there is a trade-off between paying higher wages and providing family-friendly practices. They conclude that the provision of family-friendly practices does not appear to be costless and that much of the cost appears to be borne by the workers whom the practices are designed to assist. The motivation for their analysis is very close to that of this paper.

Booth and van Ours (2008) analyze the relationship between working hours and job satisfaction. They estimate a fixed-effects ordered logit model to investigate the effects of working hours on job satisfaction using panel data on individuals in the U.K. (British Household Panel Survey: BHPS). According to their fixed-effect estimation results, working hours have a significant negative effect on women's job satisfaction, but they do not have a significant effect on men's job satisfaction. Their study is an important reference for this paper in regards to methodology.[3] However, their results cannot be interpreted as indicating a trade-off between wages and hours. Although they use family

[3] Booth and van Ours (2009) conduct a similar analysis for Australia by employing individual level panel data (HILDA).

income as an independent variable, individual wages are not included in the estimation, possibly due to the unavailability of data. Usui (2008) estimates ordered probit models to analyze differences in preference for job amenities between male and female workers using longitudinal data on individuals in the U.S. (National Longitudinal Survey of Youth: NLSY), which include information on individuals' overall job satisfaction and their satisfaction with wages and job amenities. She finds that both men and women report higher overall job satisfaction in predominantly male jobs and that most of the pay premium for women can be interpreted as a compensating differential. Her study is also similar to this paper in methodology.

Although the focus of their analyses is not on compensating wage differentials, Bloom and Van Reenen (2006) and Bloom et al. (2009) present interesting empirical analyses on the effects of work-life balance from the viewpoints of management quality and firm productivity. Bloom and Van Reenen (2006), on the basis of their original survey, investigate the relationships among work-life balance, management quality, and productivity of manufacturing firms in the U.S., France, Germany, and the U.K. According to their results, better work-life balance is significantly related to higher productivity, but this relationship is a result of omitted variable bias. In other words, the relationship between WLB and productivity disappears once the measure of management quality is controlled for, indicating that the quality of management is the fundamental factor behind both WLB and productivity. Based on these results, Bloom and Van Reenen (2006) conclude that the mandatory introduction of WLB regulations is not justified because one of the promised benefits—higher firm performance—may not materialize. At the same time, they argue that, from the viewpoint of firms, the absence of a strong negative association between WLB and productivity may justify the costs of introducing greater flexibility.

With these previous studies in mind, this paper empirically analyzes the compensating wage differentials for insecurity of employment and WLB to shed light on the trade-off between working conditions and wages in Japan.

3. Data and Methods

The data used in this paper come from a survey of working-aged individuals (from age 20 to 59) conducted by the Ministry of Economy, Trade and Industry (METI) in 2006.[4] The purpose of the

[4] The author was responsible for the design of the survey.

survey was to collect information on Japanese people's preferences and attitudes towards various aspects of equity and efficiency. The total number sampled was 3,399, of which 1,658 were male and 1,741 were female. The major survey items used in this paper include desirable compensating wage differentials for insecurity of employment and lack of work flexibility, job satisfaction, annual labor income, and weekly working hours. Information on individual characteristics such as sex, age, marital status, and work status (self-employed, executive, standard employee, contract worker, temporary agency worker, part-timer, etc.) is also used. As the data on wages are as per annual labor income, we divide wages by annual working hours to calculate the hourly wage rate.[5]

The specific question on the fair and desirable compensating wage for insecurity of employment is: "How much additional wage is necessary for you to accept insecurity of employment as a nonstandard worker?" The choices are 1) no compensation is necessary, 2) 5%, 3) 10%, 4) 30%, 5) more than 50%, 6) other, and 7) don't know. The question on the fair and desirable compensating wage for restrictions specific to standard employees is "How much additional wage is necessary for you to accept restrictions specific to standard employees, such as regional transfer and position changes?" The choices are the same as for the question above. The restrictions specific to standard employees do not necessarily result in a lack of work-life balance, but the question captures the typical disamenities of the traditional working style of standard employees.

First, we observe statistical properties such as the mean and median of the desirable compensating wage differentials aggregated by individual characteristics for 1) insecurity of employment and 2) restrictions specific to standard employees.[6] Then, we estimate an ordered probit model and OLS to investigate the effects of various individual characteristics on the fair compensating wage differentials. Explanatory variables include sex (female = 1), age group dummies (4 categories), marital status (married = 1), a dummy for whether the individual has children (has children = 1), log hourly wage, weekly working hours dummies (4 categories), and working status (7 categories).[7] In the OLS estimations, the response "5) more than 50%" is treated as 50%. The equations that are estimated are indicated below. Of course, larger coefficients for individual characteristics mean that those types of individuals perceive a higher wage premium to be fair and desirable.

$$\Pr(y_i = j) = F(\text{female, marriage, children, age dummies, ln wage, hours dummies, working}$$

[5] Data on weekly working hours are taken from the survey to calculate annual hours.
[6] In calculating aggregate statistics, responses of "6) other," and "7) don't know" are excluded.
[7] In the estimations, housewives, students, and the unemployed are excluded from the sample.

status dummies)

$$j = 1, 2, 3, 4, 5$$

$$Y_i = \beta_0 + \beta_1 \text{ female} + \beta_2 \text{ marriage} + \beta_3 \text{ children} + \beta_4 \text{ age dummies} + \beta_5 \ln \text{wage} + \beta_6 \text{ hours dummies} + \beta_7 \text{ working status dummies} + u_i$$

Next we compare the effects of wages and working hours on the job satisfaction index. The specific question in the survey is simple: "Are you satisfied with your job?" The choices are 5 categories ranging from satisfied = 5 to unsatisfied = 1.[8] As the dependent variable is composed of ordered data, it is natural to employ an ordered probit estimator. We use age group dummies, working status dummies, log hourly wage, and log weekly working hours as independent variables.[9] The basic job satisfaction equation to be estimated is as follows.

$$\Pr(y_i = j) = F(\ln \text{wage}, \ln \text{hours}, \text{age dummies}, \text{working status dummies})$$

$$j = 1, 2, 3, 4, 5$$

We expect the coefficient for wages to be positive and the coefficient for hours to be negative, but the relative sizes are our main interest here. In addition to this basic equation, the female dummy or the interaction terms of female*log wages and female*log hours are used as independent variables to determine the difference between male and female workers. Although working hours are only one dimension of work-life balance, we can infer the trade-off between wages and hours quantitatively from the estimated coefficients of the above equation.

4. Results

4-1 Compensating Wage Differentials

Figure 1 and Table 1 indicate the distribution of the fair/desirable compensating wage premium for insecurity of employment for nonstandard workers. The median, mean, and mode of the distribution are 10%, 19.7%, and 30%, respectively.[10] By individual characteristics, female

[8] In the original survey satisfied = 1 and unsatisfied = 5, but we reverse the order in this paper.
[9] We estimate with firm size dummies and industry dummies, but these variables are statistically insignificant.
[10] As explained in Section 3, "more than 50%" is treated as 50% in calculating the mean.

workers and workers aged 20–29 perceive a somewhat lower wage premium to be fair. On the other hand, a higher wage premium is supported by contract workers and temporary agency workers—both of which are usually categorized as nonstandard workers. However, the differences among workers' observable characteristics are small. The ordered probit and OLS estimation results that explain the fair/desirable compensating wage premium by individual characteristics are presented in Table 2. According to the OLS results, contract workers and temporary agency workers perceive a wage premium that is about 4% to 5% higher as desirable. High wage earners also think a higher wage premium is appropriate.

For the compensating wage premium for restrictions specific to standard employees, the median, mean, and mode of the distribution are 10%, 18.5%, and 30%, respectively (see Figure 2 and Table 3). By individual characteristics, those who have children and standard workers perceive a somewhat higher wage premium to be desirable. On the other hand, a lower wage premium is supported by executives and workers with shorter working hours. Again, the differences among workers' observable characteristics are relatively small. Table 4 shows the ordered probit and OLS estimation results to explain the fair/desirable compensating wage premium for the restrictions specific to standard employees by individual characteristics. High wage earners perceive a lower wage premium to be appropriate, which is different from the results for insecurity of employment. According to the OLS results, standard employees of private companies perceive a wage premium that is about 2% higher as desirable. The coefficients for working hours are insignificant, suggesting that those who actually work longer do not necessarily support higher compensating wages for lack of work-life balance.

How can one interpret these results on the compensating wage differentials? First, on condition that the workers' skill levels and job characteristics are the same, a wage premium of about 10% to 20% for insecurity of employment of nonstandard workers corresponds to the average worker's perception of fairness. Most of the recent estimations of wage functions in Japan have found a significant wage penalty for nonstandard workers after controlling for observable worker characteristics such as age, tenure, and education and for employer characteristics including industry and firm size.[11] One possible reason for the estimated wage penalty is unobservable differences in workers' productivity. Unfortunately, however, previous studies have not reached reliable estimates of the "pure" size of wage differentials adjusted for unobservable differences in worker productivity.

[11] According to the author's own estimation using micro data from the Basic Survey on Wage Structure (Ministry of Health, Labour and Welfare), nonstandard workers' hourly wages are about 30% lower than those of standard full-time workers after controlling for observable worker characteristics.

Since it is beyond the scope of this paper to investigate the pure size of wage differentials, I cannot evaluate whether the size of the fair/desirable wage premium described above is economically rational or not. However, globalization, rapid technological change, a shortened product life cycle, and market deregulation have contributed to instability in firm performance, which increases the demand for nonstandard workers in order to flexibly adjust labor input. According to Morikawa (2010), among highly volatile firms, the use of nonstandard workers has a positive effect on productivity, suggesting that some increase in wages for those workers is efficient from the viewpoint of firms. Therefore, it is natural to reconsider the wage level for nonstandard workers who lack employment security on both efficiency and equity grounds.

Second, a wage premium of about 10% to 20% for restrictions specific to standard workers corresponds to the average worker's perception of fairness, although the restrictions cannot be interpreted as a synonym for work-life balance.[12] In other words, according to the average worker's perception of fairness, workers free from such restrictions should accept wage discounts of 10% to 20%. The introduction and diffusion of the short-time standard worker as a "moderate work style" are advocated by the Government. If such short-time workers enjoy both employment security and work-life balance, it is suggested that the simultaneous adjustment of their wage level is effective in the smooth introduction and expansion of this practice.

4.2 Wages, Working Hours, and Job Satisfaction

In this subsection, we report the results on job satisfaction. Table 5 presents the ordered probit estimation results. As explained in Section 3, hourly (log) wage is calculated using data on annual labor income and weekly working hours taken from the survey. In the basic equation, the estimated coefficients are statistically significant and are equal to 0.168 for wages and -0.205 for hours (see Table 5 (1)). When a female dummy is added as an explanatory variable (see Table 5 (2)), the coefficients are 0.208 for wages and -0.119 for hours: the effect of wages becomes somewhat larger and the effect of hours becomes smaller. The coefficient for the female dummy is positive and highly significant, indicating that, ceteris paribus, female workers have higher job satisfaction. When the interaction terms female dummy*log wages and female*log hours are included (see Figure 5 (3)), the coefficient for the interaction of female*log wages is negative and significant,

[12] Regional transfer and position changes are the only restrictions on standard employees featured in the survey.

indicating that the effect of wages on job satisfaction is larger for male workers. The coefficient for female*log hours is small and insignificant. The different effects of working hours on job satisfaction by sex are not clearly detected from this result.

The higher the wage level and the shorter the working hours, the higher the job satisfaction. For the purpose of keeping job satisfaction unchanged, some reduction of (hourly) wages is justified as a negative compensation for the shortening of working hours. Table 6 calculates the marginal effects of wages and hours on the job satisfaction level. According to this table, when working hours are shortened by 10%, the reduction of hourly wages that does not affect job satisfaction is in the range of 6% to 12%. Although it is difficult to make a simple comparison with the subjective fair compensating wage differentials, the results here are consistent with the figures discussed in Subsection 4.1.

By individual characteristics, temporary agency workers' job satisfaction is significantly lower, and the coefficient for part-timers is negative and significant in some specifications. The negative coefficients of these types of workers after controlling for wages and working hours can be interpreted to mean that the actual wages are lower than those in the hedonic equilibrium. This result is qualitatively consistent with the findings in Subsection 4.1, suggesting that the current wage level for nonstandard workers may not be high enough to compensate for the disamenities of their jobs.

Although it should be noted that a reduction in work hours and work-life balance are not the same notion, a simultaneous reduction in hours and wages as a result of enhancing flexibility in a work schedule to balance work and family life does not, on average, necessarily have deleterious effects on individual utility. The introduction of work-life balance and the simultaneous adjustment of the wage level are necessary to maintain hedonic equilibrium.

Of course, the results should be interpreted with reservations, because the subjective job satisfaction index is not free from measurement error. In addition, the results presented here indicate an average cross-sectional relationship, and unobservable individual characteristics or preferences are not controlled for.

5. Conclusion

This paper presents evidence on compensating wage differentials from the viewpoint of workers' perceptions of fairness for 1) insecurity of employment for nonstandard workers and 2) lack of

work-life balance for typical standard workers in Japan. We first use individual-level survey data to observe the statistical properties of the fair/desirable compensating wage premium for these disamenities. Then we estimate job satisfaction equations to quantitatively assess the trade-off between working hours and wages.

According to the analysis, for average Japanese workers, the fair wage premiums for the insecurity of nonstandard employment and the lack of work-life balance specific to standard employment are both within the range of 10% and 20%. This result suggests that the actual relative wages for nonstandard workers may be too low and that, given the increasing demand for nonstandard workers, raising their relative wages should be considered. On the other hand, in order to introduce and to diffuse the short-time standard worker as a "moderate work style," if such workers enjoy both employment security and work-life balance, a simultaneous reduction in hourly wages by 10% to 20% seems justified. According to the estimation results, working hours have negative effects and wages have positive effects on job satisfaction. Quantitatively, when working hours are shortened by 10%, the reduction of hourly wages that renders the change in hoursis neutral for job satisfaction is in the range of 6% to 12%.

Expanding work-life-balance practices without changing relative wages is difficult not only from the standpoint of firms' costs but also from the standpoint of the individuals' sense of fairness. The combination of both flexibility of working schedule and flexibility of wages is the realistic course of action to be pursued.

There are a number of limitations to this study. The present paper analyzes only the labor supply side and does not deal with the demand-supply equilibrium in the labor market. From firms' perspective, rational wage differentials depend on both the costs related to the flexible working schedule and the possible productivity-enhancing effects of work-life balance. If work-life-balance practices have positive effects on workers' productivity, it is natural for the gains to be distributed to workers. In this sense, innovations in human resources management are expected to enhance the motivation and productivity of the short-time standard worker. As was discussed in Bloom and Van Reenen (2006), if the quality of management is the fundamental variable behind both work-life balance and productivity, an effective corporate governance mechanism to upgrade management quality is also essential for realizing WLB without sacrificing wages.

Because the sample size is only about 3,000 and the survey items are limited, the possibility of measurement error or omitted variable bias cannot be eliminated. In addition, the effects of unobservable individual characteristics are not controlled for because of the cross-sectional nature of the survey. Bearing these limitations in mind, the quantitative results should be interpreted with some

caution.

References

Altonji, Joseph G., and Christina H. Paxson (1988), "Labor Supply Preferences, Hours Constraints, and Hours-Wage Trade-Offs," *Journal of Labor Economics*, Vol. 6, No. 2, pp. 254-276.

Bloom, Nick and John Van Reenen (2006), "Management Practices, Work-Life Balance, and Productivity: A Review of Some Recent Evidence," *Oxford Review of Economic Policy*, Vol. 22, No. 4, pp. 457-482.

Bloom, Nick, Tobias Kretschmer, and John Van Reenen (2009), "Work-Life Balance, Management Practices, and Productivity," in Richard B. Freeman and Kathryn L. Shaw eds., *International Differences in the Business Practices and Productivity of Firms*, Chicago and London: The University of Chicago Press, Ch. 1, pp. 15-54.

Booth, Alison L., and Margi Wood (2008), "Back-to-Front Down Under? Part-Time/Full-Time Wage Differentials in Australia," *Industrial Relations*, Vol. 47, No. 1, pp. 114-135.

Booth, Alison L., and Jan C. van Ours (2008), "Job Satisfaction and Family Happiness: The Part-Time Work Puzzle," *Economic Journal*, Vol. 118, February, pp. F77-F99.

Booth, Alison L., and Jan C. van Ours (2009), "Hours of Work and Gender Identity: Does Part-Time Work Make the Family Happier?" *Economica*, Vol. 76, February, pp. 176-196.

Del Bono, Emilia, and Andrea Weber (2008), "Do Wages Compensate for Anticipated Working Time Restrictions? Evidence from Seasonal Employment in Austria," *Journal of Labor Economics*, Vol. 26, No. 1, pp. 181-221.

Heywood, John S., W. Stanley Siebert, and Xiangdong Wei (2007), "The Implicit Wage Costs of Family Friendly Work Practices," *Oxford Economic Papers*, Vol. 59, No. 2, pp. 275-300.

Hwang, Hae-shin, W. Robert Reed, and Carlton Hubbard (1992), "Compensating Wage Differentials and Unobserved Productivity," *Journal of Political Economy*, Vol. 100, No. 4, pp. 835-858.

Kostiuk, Peter F. (1990), "Compensating Differentials for Shift Work," *Journal of Political Economy*, Vol. 98, No. 5, Pt. 1, pp. 1054-1075.

Lanfranchi, Joseph, Henry Ohlsson, and Ali Skalli (2002), "Compensating Wage Differentials and Shift Work Preferences," *Economics Letters*, Vol. 74, No. 3, pp. 393-398.

Li, Elizabeth H. (1986), "Compensating Differentials for Cyclical and Noncyclical Unemployment: The Interaction between Investors' and Employees' Risk Aversion," *Journal of Labor Economics*, Vol. 4, No. 2, pp. 277-299.

Moretti, Enrico (2000), "Do Wages Compensate for Risk of Unemployment? Parametric and

Semiparametric Evidence from Seasonal Jobs," *Journal of Risk and Uncertainty*, Vol. 20, No. 1, pp. 45-66.

Morikawa, Masayuki (2010), "Volatility, Nonstandard Employment, and Productivity: An Empirical Analysis Using Firm-Level Data," RIETI Discussion Paper, 10-E-025.

Rosen, Sherwin (1986), "The Theory of Equalizing Differences," in O. Ashenfelter and R. Layard eds. *Handbook of Labor Economics, Vol.1*, The Netherlands: Elsevier Science Publisher BV, Ch. 12, pp. 641-692.

Usui, Emiko (2008), "Job Satisfaction and the Gender Composition of Jobs," *Economics Letters*, Vol. 99, No. 1, pp. 23-26.

Villanueva, Ernesto (2007), "Estimating Compensating Differentials Using Voluntary Job Changes: Evidence from Germany," *Industrial and Labor Relations Review*, Vol. 60, No. 4, pp. 544-561.

Table 1 Desirable Compensating Wage Premium for Insecurity of Nonstandard Employment by Individual Characteristics

Personal Characteristics		Median	Mean	N
Total		10	19.7	2,847
Sex	Male	10	21.1	1,433
	Female	10	18.2	1,414
Age	20-29	10	16.6	410
	30-39	10	19.6	868
	40-49	10	20.6	699
	50-	10	20.5	870
Working status	Self-employed	10	19.5	311
	Executive	30	21.7	126
	Standard worker (private company)	10	20.3	999
	Standard worker (government)	10	20.1	220
	Contract worker	30	21.9	100
	Temporary agency worker	30	21.1	78
	Part-timer	10	16.9	332
	Housewife	10	19.6	528
	Student	10	12.0	25
	Not in workforce	10	18.8	124
Hours per Week	Less than 35 hours	10	18.2	375
	35 to 45 hours	10	19.5	839
	45 to 60 hours	10	20.8	650
	More than 60 hours	10	19.7	983

Table 2 Desirable Compensating Wage Premium for Insecurity of Nonstandard Employment (Estimation Results)

	(1) Ordered probit			(2) OLS		
Female	-0.156	(0.061)	***	-3.512	(0.967)	***
Married	0.029	(0.063)		0.013	(0.995)	
With children	0.003	(0.057)		0.025	(0.903)	
30-39	0.132	(0.078)	*	2.557	(1.241)	**
40-49	0.205	(0.085)	**	3.817	(1.350)	***
50-59	0.168	(0.085)	**	3.322	(1.343)	**
log wage	0.073	(0.036)	**	0.997	(0.573)	*
35-45 hours	-0.034	(0.091)		-0.924	(1.453)	
45-60 hours	-0.001	(0.099)		-0.448	(1.565)	
More than 60 hours	0.004	(0.109)		-0.170	(1.733)	
Executive	0.089	(0.119)		2.421	(1.878)	
Standard worker (private company)	0.040	(0.078)		0.893	(1.231)	
Standard worker (government)	0.057	(0.102)		0.850	(1.623)	
Contract worker	0.245	(0.129)	*	4.343	(2.040)	**
Temporary agency worker	0.339	(0.146)	**	5.276	(2.334)	**
Part-timer	0.029	(0.104)		0.345	(1.659)	
_cons				19.770	(2.411)	***
Nobs	2,054			2,054		

(Notes) Standard errors in parentheses. *significant at 10%; ** significant at 5%; *** significant at 1%.

Table 3 Desirable Compensating Wage Premium for Restrictions on Standard Employees by Individual Characteristics

Personal Characteristics		Median	Mean	N
Total		10	18.5	2,971
Sex	Male	10	19.1	1,505
	Female	10	17.9	1,466
Age	20-29	10	18.4	427
	30-39	10	20.6	899
	40-49	10	19.0	730
	50-	10	16.2	915
Working status	Self-employed	10	16.9	326
	Executive	10	15.7	131
	Standard worker (private company)	10	19.3	1,043
	Standard worker (government)	10	18.2	233
	Contract worker	10	16.9	103
	Temporary agency worker	10	19.4	79
	Part-timer	10	16.2	337
	Housewife	10	20.2	553
	Student	10	16.5	26
	Not in workforce	10	20.4	137
Hours per Week	Less than 35 hours	10	16.1	374
	35 to 45 hours	10	18.0	873
	45 to 60 hours	10	18.8	685
	More than 60 hours	10	19.7	1,039

Table 4 Desirable Compensating Wage Premium for Restrictions on Standard Employees by Individual Characteristics (Estimation Results)

	(1) Ordered probit			(2) OLS		
Female	-0.185	(0.060)	***	-3.582	(0.907)	***
Married	0.043	(0.062)		0.443	(0.938)	
With children	0.143	(0.056)	***	2.051	(0.847)	**
30-39	-0.003	(0.076)		0.835	(1.166)	
40-49	-0.080	(0.083)		-0.199	(1.266)	
50-59	-0.204	(0.083)	**	-2.124	(1.267)	*
log wage	-0.074	(0.036)	**	-1.209	(0.541)	**
35-45 hours	0.041	(0.091)		1.095	(1.381)	
45-60 hours	0.054	(0.097)		0.779	(1.483)	
More than 60 hours	-0.007	(0.108)		-0.024	(1.640)	
Executive	-0.115	(0.117)		-1.487	(1.764)	
Standard worker (private company)	0.158	(0.076)	**	1.952	(1.154)	*
Standard worker (government)	0.117	(0.100)		1.131	(1.515)	
Contract worker	0.072	(0.126)		0.634	(1.914)	
Temporary agency worker	0.148	(0.146)		2.525	(2.214)	
Part-timer	0.011	(0.104)		0.282	(1.575)	
_cons				14.319	(2.294)	***
Nobs	2,133			2,133		

(Notes) Standard errors in parentheses. *significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5 Wages, Working Hours, and Job Satisfaction (Estimation Results)

	(1)			(2)			(3)		
log wage	0.168	(0.032)	***	0.208	(0.032)	***	0.298	(0.048)	***
log hours	-0.205	(0.063)	***	-0.119	(0.065)	*	-0.102	(0.069)	
Female				0.314	(0.055)	***			
Female*log wage							-0.155	(0.059)	***
Female*log hours							0.002	(0.033)	
30-30	-0.012	(0.070)		0.003	(0.070)		-0.007	(0.071)	
40-49	0.074	(0.073)		0.081	(0.073)		0.054	(0.074)	
50-59	0.056	(0.073)		0.069	(0.073)		0.042	(0.074)	
Executive	0.190	(0.109)	*	0.191	(0.109)	*	0.175	(0.110)	
Standard worker (private company)	-0.090	(0.069)		-0.100	(0.069)		-0.121	(0.070)	*
Standard worker (government)	0.114	(0.091)		0.103	(0.091)		0.072	(0.092)	
Contract worker	-0.114	(0.119)		-0.177	(0.120)		-0.171	(0.120)	
Temporary agency worker	-0.237	(0.131)	*	-0.356	(0.133)	***	-0.369	(0.133)	***
Part-timer	-0.031	(0.089)		-0.144	(0.091)		-0.173	(0.092)	*
Nobs	2,380			2,380			2,380		

(Notes) Ordered probit estimates with standard errors in parentheses. *significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6 Marginal Effects of Wages and Working Hours on Job Satisfaction

	(1) without female dummy		(2) with female dummy	
	log wage	log hours	log wage	log hours
5	0.025 ***	-0.030 ***	0.030 ***	-0.017 *
4	0.039 ***	-0.047 ***	0.049 ***	-0.028 *
3	-0.003 **	0.004 **	-0.004 **	0.002
2	-0.031 ***	0.038 ***	-0.039 ***	0.022 *
1	-0.030 ***	0.036 ***	-0.036 ***	0.021 *

(Notes) 5: most satisfied, 1: most unsatisfied. *significant at 10%; ** significant at 5%; *** significant at 1%.

Figure 1 Desirable Compensating Wage Premium for Insecurity of Nonstandard Employment

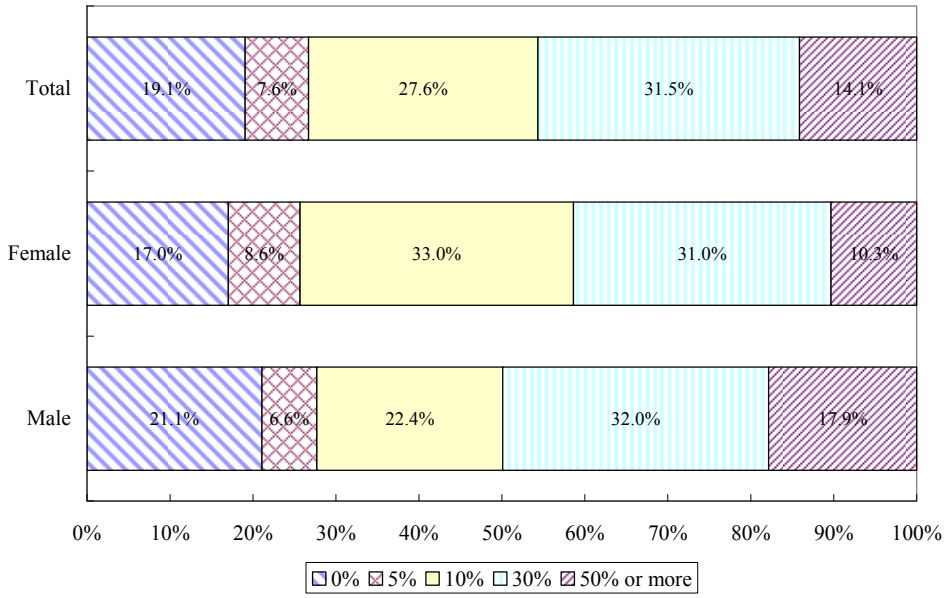

Figure 2 Desirable Compensating Wage Premium for Restrictions on Standard Employees