New Evidence on Initial Transition from Career Job to Retirement in Japan

By

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Abstract

The interval in time between leaving a career job and exit from the labor force is especially long for Japanese employees and separation from the career job often takes place due to mandatory retirement in Japan. Using micro-level data compiled by the Japanese Government, we examine determinants of post-career work arrangements from two perspectives: work status and the route to a second job. We show that these determinants differ between male and female workers and that the customary function of career employers to place their workers in a second job has declined since the middle of the 1990s.

Keywords: mandatory retirement, postretirement arrangements, labor supply of the elderly, Japan.

JEL Classification Codes: J14, J26.

1. Introduction

It is often claimed that late retirement is one of the most distinguishing features of labor supply of the elderly in Japan and that it can be attributed to the long life expectancy of Japanese people. Indeed, the average effective retirement age is among the oldest in OECD member countries at 69.5 years for males and 66.5 years for females (OECD (2008)) and much later than in some European countries experiencing early retirement. Moreover, life expectancy at birth for Japanese is the longest in the world at 78.4 years for males and 85.3 years for females for births in 2003 (OECD (2007)).

However, the average effective retirement age denotes the very last stage of withdrawal from the labor market after what is often a prolonged retirement process and therefore ignores some important factors in the labor decision of the elderly.[i] Indeed retirement is a lengthy and gradual process involving shifting from a career job to intermediate stages of work concluded by eventual permanent exit of the labor force, as revealed by recent studies using large scale panel data represented by the Health and Retirement Study (HRS), English Longitudinal Survey on Ageing (ELSA), and the Survey on Health, Ageing and Retirement in Europe (SHARE). This process also occurs in Japan. The duration between leaving a career job and permanently exiting the labor force is especially protracted for Japanese workers (Seike and Yamada (2004)). The Japanese Study on Aging and Retirement (JSTAR), the first “world standard” panel data on health and retirement in Japan, reveals that one half of individuals in their mid-70s are in an intermediate stage that is neither full-time work nor complete retirement (Ichimura, Hashimoto, and Shimizutani (2009)).

In Japan, transition from a career job often begins at the time of mandatory retirement for company employees. The Japanese labor market has traditionally been characterized by the practice of “lifetime employment” and, as such, it once attracted a great deal of attention (i.e. Hashimoto and Raisian (1985)). The “delayed compensation argument” explains the

existence of mandatory retirement in a long-term employment practice, in which an upward age (tenure)-earnings profile relative to productivity profile is a device meant to encourage workers to exert more effort (Lazear (1979)). The argument insists that employment end at mandatory retirement to equalize the wage with the lifetime value of a worker's relative marginal products of labor.[ii]

In this study, we focus on the initial transition process from career job to retirement for Japanese workers, a period that usually starts at mandatory retirement, and explore the determinants of arrangements right after leaving the career job. In the multiple stages of a gradual retirement process, separation from the career job is a starting point to a wide variety of pathways toward retirement and is thus worth independent in-depth investigation. Further, this initial stage has important policy implications since the government has extended the age of public pension eligibility and encouraged firms to extend the mandatory retirement age, both developments that influence the labor supply decision of the elderly.

Among a number of empirical studies on retirement in Japan, Clark and Ogawa (1997) provided one of the first systematic estimates of the determinants of a "second job" for employees who experienced mandatory retirement.[iii] Using micro-level data from the 1987 *Survey of Mandatory Retirees* conducted by the Association for Older Worker Employment Development, they found that (1) employees with higher education and higher managerial status before mandatory retirement are more likely to remain in the labor force, and (2) move to a subsidiary or client firm is more common in large firms or for employees with longer years of tenure. They emphasized the importance of the role that career employers play in post-retirement arrangements in that many firms reemploy their retirees or assist them in finding a new job with subsidiaries and/or clients.

This study shares the spirit of the research by Clark and Ogawa (1997) and extends their analysis in three aspects.[iv] First, we provide new systematic evidence on the initial

transition from a career job since the 1990s, when substantial structural change occurred in the Japanese labor market. Of particular note, the sample contains individuals who left career jobs in a variety of years, which allows year-to-year examination of the difference in post retirement arrangements. Second, we explore the initial transition from the career job from two perspectives: the work status for all workers who left the career job and the route to a second job for those who continued to work. Third, in contrast to previous studies focusing only on male workers, since mandatory retirement is now more relevant for female workers than before, we provide evidence on both male and female workers. Our empirical investigation is empowered by a large micro-level dataset from the *Survey on Employment of the Elderly* compiled by the Japanese Government in 2000.

This paper proceeds as follows. The next section describes developments in mandatory retirement in Japan and Section 3 provides a brief description of the dataset used in this study. Section 4 presents the empirical results. The last section concludes.

2. Development of mandatory retirement in Japan

For the last three decades, the practice of mandatory retirement has prevailed in Japan. Moreover, along with social security reforms extending the age of eligibility, the mandatory retirement age has also been extended (Oshio, Shimizutani, and Oishi (2009)). In 1973, the government began to encourage firms to extend the mandatory retirement age. In 1986, the government legally obliged firms to extend the mandatory retirement age from 55 to 60 or over. In 1995, the government introduced a new type of wage subsidy to compensate for the reduced wages of older workers who continued to be employed after the mandatory retirement age. Since 2000, the government required firms to extend the mandatory retirement age to 65 and above by 2013 or to abandon it altogether. According to the *Survey on Employment Management*, the share of firms with a mandatory retirement program was 60

percent in 1980 and reached 90 percent in the mid-1990s and close to 100 percent after 2000. The dominant retirement age is now 60, and a small percentage of firms have started extending it further to 65 or over (Oshio, Shimizutani, and Oishi (2009)).

We should note that the firms in the sample of *Survey on Employment Management* are those with 30 or more employees and many smaller firms may not have a mandatory retirement program. Thus, we computed the proportions of employees who work for a firm that has mandatory retirement using micro-level data from *Survey of Employment of the Elderly* over a period of six years, as reported in Table 1. The sample in the table is the individuals who were aged 60 or over at the time of the survey in each year.

We make several observations. First, the proportion of individuals who were working at age 55, which is reported in the first column for each gender, increased over the two decades. Second, among the individuals who were employed at age 55, the proportion of individuals who left a firm at the mandatory retirement age, which is reported in the second column for each gender, increased over the two decades and now the figure exceeds 60 percent for males and reaches close to 40 percent for females. Third, there is also a non-trivial proportion of employees, approximately 20 percent of males and 40 percent of females, who left the firm at age 55 before the mandatory retirement age.[v] Combining the proportion of those who left the career job at the mandatory retirement age and those who left before the mandatory retirement age, the table shows that, regardless of number of employees, about 80 percent of firms had adopted the practice of mandatory retirement in 2004.

The findings show that mandatory retirement is more widespread in Japan for both males and females, and post retirement arrangements for a second job have gained importance in recent years.

3. Data description

We use micro-level data from the *Survey of Employment of the Elderly* compiled by the Ministry of Labour, Health and Welfare, Government of Japan. The survey has been conducted every four or five years. The individuals in the sample were aged between 55 and 69 and randomly chosen from all regions in Japan. We utilize micro-level data from the 2000 survey which asks the respondents about an objectively described work status before and immediately after their leave from career jobs in a clearly defined time frame and the details about how they went about finding a second job.[vi] The sample size of the 2000 survey is 19,595. Of the respondents, we use the samples whose information before and right after separation from the career job is available in the data.

We perform two sets of regressions to explore determinants of post retirement arrangements after leave from career jobs. First, we examine work status within a month after separation. The survey provides three status choices: (1) working, (2) unemployed (seeking a job) and (3) being out of the labor force (not intending to work). Second, we explore the route to a second job for those who continued working. The survey asked the respondents who continued to work about how they found the second job. The survey provides seven arrangements from which to choose: (1) extended employment (same firm), (2) re-hired by the same employer, (3) employment by other firm (by introduction of the career employer), (4) employment by other firm (no introduction by the career employer), (5) self-employed, (6) part-time job, family business, volunteer work, etc. and (7) others.

Before turning to the estimation, we will preview the proportions of each work status and route to the next job. The upper panel of Table 2 reports the results for males and the lower those for females. Reported are the figures for all individuals (upper section) and those who left the career job after mandatory retirement age (lower section). Looking at the work status, for male workers, the proportion of working is dominant, exceeding 40 percent, followed by that of unemployed (job seekers), while that of being out of the labor force is

least represented. Comparing the two panels, the proportion of working is larger and that of job seekers is smaller for workers who left at the mandatory retirement age than those who left prior to that. For female workers, the proportion of job seekers is dominant, followed by that of working. While the share of pre-mandatory retirement workers is larger for female than male workers, the proportion of working is larger for female workers who left at mandatory retirement. These figures imply that a worker, whether male or female, who continued working until mandatory retirement is more likely to find a second job right after the retirement age.

Turning to various routes to a second job, the highest share for male workers is extended employment in the same firm at 27 percent, followed by reemployment by the employer (22 percent). The proportion of workers employed by other firms by introduction of the employer occupies 21 percent. The sum of these three categories is 70 percent for all workers and 76 percent for workers who left their career jobs at mandatory retirement, implying that career employers are eager to provide their workers with a second job, especially those workers who quit at mandatory retirement age.

For female workers, the proportions of extended employment and reemployment in the same firm are large with the sum of the two categories at 70 percent for female workers who worked until mandatory retirement age, a percentage much larger than that of all workers (54 percent). The difference between male and female workers in terms of mandatory retirement implies that career employers are more likely to provide a second job to female workers who work until mandatory retirement age than to those who leave earlier. Two possibilities may account for the difference: (1) only able female workers work until mandatory retirement, and (2) female workers are underpaid relative to productivity before mandatory retirement. The third largest category for female workers is part-time job/family business/volunteer work and the fourth is employment by other firm unrelated to the career job. The proportion of

employment by other firms introduced by the career employer, which is the third largest for male workers, is small.

These observations show the differences in post retirement arrangements between male and female workers, and between those who left before the mandatory retirement age and those who left at the mandatory retirement age. In what follows, we will use the sample of all workers regardless of whether they experienced the mandatory retirement age for the estimation because of the non-trivial portion of pre-mandatory retirement workers, especially for females.

Table 3 reports summary statistics of the variables used in the regression analysis as independent variables. The average age is 63–64 years old. In terms of educational attainment, which is a proxy for wage before mandatory retirement and reservation wage after mandatory retirement, the proportion of senior high school graduates or two-year college graduates is dominant, followed by that of junior high school graduates for males while the order of the two is reversed for females. Turning to health status and physical ability to work, about 70 percent responded that they are healthy and about 20 percent reported that they are not.[vii] In contrast, 40 percent of male respondents reported that they are physically able to work on a full time basis and another 50 percent are able to work depending on work conditions. For females, the proportion of physical ability to work on a full time basis is smaller at 20 percent and that of those able to work depending on work conditions is large at 50 percent.

Looking at job types before leave from the career job, the dominant is production workers which exceeds 30 percent for both sexes and the second largest is management for males and administration for females (20 percent each). We also see a difference in years of tenure for career jobs between males and females. Of male workers, 60 percent worked for the firm more than 30 years and another 20 percent for more than 20 years. In contrast, years of tenure is more evenly allocated for each category of females of whom 50 percent worked

for the firm more than 20 years. The firm size is also larger for male workers. One quarter of male workers worked for a firm with 1,000 or more employees while one half of female workers worked for a firm with 5-99 employees. The share of individuals who worked until the mandatory retirement age is 74 percent for males and 50 percent for females.

Moreover, the survey provides detailed information on pension income which the respondent received at the time of the survey. Monthly pension benefits for Employer's Pension Insurance are about 169,000 yen for males and 91,000 yen for females. With regard to Employer's Pension Insurance, the pension benefits are earnings tested but the unique advantage of the 2000 survey is that it asks the respondents whose pension benefits were reduced about full benefits without the earnings test.[viii] While the benefits from Basic Pension Insurance are about 50,000 yen for both sexes, those from Mutual Aid Insurance whose recipients are former government officials are high at around 200,000 yen. Lastly, since the survey asked the respondents the year in which they left their career jobs and their current age at the time of the survey, it is possible to identify the year each individual in the sample left the career job. While the proportion of those who left their career jobs in the 1980s occupies about 10 percent, a majority of the individuals in the sample quit their career jobs in the second half of the 1990s.

4. Estimation results

In this section, we first examine the determinants of the choice of each work status and then we turn to explore what determines the route to a second job for continuing workers. Since the alternatives may not be independent of each other, we performed a Hausman test of the assumption of the IIA (Independence of Irrelevant Alternatives) and confirmed that the assumption is satisfied for all the regressions in this study.

First, we employ a multinomial logit model to use the three work statuses right after

leave from the career job as the dependent variable. We assume that the utility of an individual i facing j choices is expressed as below:

$$U_{i,j} = \mu_{i,j} + \varepsilon_{i,j} \quad (1)$$

where $\mu_{i,j}$ is expressed as a function of explanatory variables and $\varepsilon_{i,j}$ is a disturbance. $j = 1$ refers to the case if individual i was "working," $j = 2$ refers to the case that individual i was "seeking a job" (unemployed) and $j = 3$ refers to the case that individual i was "out of the labor force." If the j disturbances are independent and identically distributed with type I extreme value distribution (McFadden (1974)), then the probability that individual i chooses j is written as:

$$P_{i,j} = \frac{\exp(X_i \beta_j)}{\sum_{j=1}^{3} \exp(X_i \beta_j)} \quad , \quad j = 1, 2, 3. \quad (2)$$

where X_i is a matrix including factors affecting the individual's labor supply decision, which are reported in Table 3 and β is a matrix of parameters.

In what follows, in order to compare the effect of each explanatory variable on the outcome, we will proceed with our discussion using the estimated results of the relative risk ratio (RRR), which is defined as the ratio of the marginal odds ratio with respect to choice j (j=unemployed or out of labor force) relative to the marginal odds ratio with respect to choice of the base case (working, in this case). Put simply, RRR means the propensity of being unemployed or out of the labor force relative to that of working.

Table 4 (1) reports the estimation results for males. Older males are more likely to leave the labor force and higher educated males, especially university graduates or above, are significantly less likely to be unemployed or to leave the labor force. In other words, higher educated males tend to continue work after mandatory retirement, which is consistent with what was reported by Clark and Ogawa (1997). While males who report they are sick are more likely to leave the labor force, those who report not being able to work on a full time

basis are more likely to be unemployed or out of the labor force, and the size is larger for the latter, implying that males with physical limitations are more likely not to be working immediately after leave from a career job.[ix]

We also observe that the category of career job affects work status right after leaving. Males who were in managerial positions, worked as security guards, those who worked in transportation and communication, and production workers are more likely to be unemployed. In most cases, the effect of years of tenure or firm size at the career job on work status is not significant, which contrasts to the results for females which is discussed later. Former government employees are also less likely to be unemployed because they are not eligible to receive unemployment insurance benefits when leaving the government but instead receive a lump-sum retirement bonus. Male workers who left after the mandatory retirement age are more likely to be working.

Moreover, we see that full pension benefits are associated with work status right after leave from the career job. Male workers with larger full pension benefits are more likely to be unemployed or to leave the labor force, implying that pension income has a discouraging effect on working immediately following leave from the career job, data that is found in other studies (i.e. Oshio, Oishi, and Shimizutani (2008)) .[x] Positive and significant effects are observed in the Employer's Pension Insurance and the company-provided pension insurance for the unemployed and Employer's Pension Insurance, Mutual Aid Insurance and individual pension insurance for those leaving the labor force. Lastly, we observe significant effect of year dummies in 1991 and all years since 1993 for both unemployed and leave from labor force (except those in 1994 for being unemployed). This result shows that during the economic turndown beginning in the second half of the 1990s elderly males were less able to find a second job once they left the career job. A closer look shows that the size of the RRR for unemployment is largely unchanged for being unemployed in the second half of the 1990s

while that for leaving the labor force increased substantially in recent years.[xi]

Turning to the results for female workers reported in Table 4 (2), older females are more likely to continue to work, and educational attainment is not significantly associated with work status for females, in contrast to that of males.[xii] While females who reported they are sick tend to be unemployed, the pattern of self-reported physical ability to work is similar to those for male workers. The career job type does not significantly affect work status except that females who were in charge of administration are more likely to be unemployed and those in charge of agriculture, forestry, and fishery are less likely to leave the labor force. We note that, unlike male workers, for female workers years of tenure are related to work status. The estimated size of RRR for unemployment is an inverse U shape, showing that females with less than 10 years or 25 or more years of tenure are more likely to continue to work right after leave from the career job and females with longer years of tenure are less likely to leave the labor force. The pattern of the inverse U shape may be accounted for by the fact that after completing their education, some females work a lifetime for a firm while others return to work after raising their children and continue working until the mandatory retirement age. The effect of firm size is mostly insignificant for the unemployed but it is significant for smaller firms for the status of being out of labor force, probably because labor income from the career job is smaller.

Female workers who quit the career job at the mandatory retirement age are more likely to be working, which is consistent with male workers. In contrast to the case of males, for females, the effects of pension income on work status and year dummies are not significantly estimated. The effect of insignificant year dummies may be explained by the fact that female labor force participation has been on an upward trend and is less affected by short run fluctuations of labor market conditions except in 1997 which witnessed a particularly severe economic turndown at the time of the Asian financial crisis.

In sum, we observe that the determinants of work status right after leave from a career job vary between male and female workers in terms of age, educational attainment, previous job type, firm size, years of tenure, and year left the career job, which has to date been unexplored. In contrast, the effect of self-reporting health status and physical ability to work and experience of mandatory retirement is largely consistent between males and females. Moreover, we observe that the opportunity for males to work right after leaving the career job has been decreasing since the second half of the 1990s, implying that elderly males are less able to find a second job as the economic situation experienced decline.

We turn to explore the determinants of the route to a second job for continuing workers. As stated above, our dataset provides seven choices for routes to the next job. Following Clark and Ogawa (1997), we consolidated them into four groups: extended employment or reemployment in the same firm, employment at other firms introduced by the career firm (related firm), employment at other firms not introduced by the career firm (unrelated firm) and "others" including the remaining choices, i.e., self employment, part-time job/family business/volunteer work (we call the last category "self-employed" for short).[xiii] The empirical strategy is the same as (2) and the variables used in the regressions are identical except the dependent variables to replace three choices for work status to four choices for route to a second job.

Table 5 reports the estimation results.[xiv] In Table 5 (1) showing the results for males, we see that older males are less likely to be employed at a related firm and more educated males, especially university graduates and above, are more likely to work for other firms either related or unrelated to the career employer. Self-reported health status or physical ability to work has insignificant effect. Male workers who were in charge of management and security guards are more likely to be employed at related firms. Further, male workers who were in charge of administration are less likely to be employed at an unrelated firm. Male

workers who were in charge of services are less likely to be self-employed or have other non-firm status.

While years of tenure is irrelevant, male workers who were employed at smaller firms are less likely to be self-employed and male workers who were employed at larger firms with 1,000 or more employees or by governments are more likely to be employed at a related firm and less likely to be self-employed. Workers who quit the career job at mandatory retirement age are less likely to be employed at firms other than the same firm or be self-employed. Pension benefits affect the labor supply decision as reported in Table 4 but not the route to a second job. Lastly, the chance of being employed at related firms has substantially declined since 1995 and that of being employed at unrelated firms has declined since 1998. While the latter might be explained by severe labor market conditions, the former suggests a change in the role of career employers in the placement of their male workers after leaving the career job. Since the RRR measures the relative risk ratio compared to extended or reemployment at the same firm, one possibility is that reemployment by the same firm has been partly encouraged by government policy to promote labor supply of the elderly and partly motivated by a lower salary at reemployment. However, we should note that the likelihood to be unemployed or leave the labor force have increased since the mid-1990s, which is observed in Table 4. A combination of these results shows the weaker function of career employers to place their male workers in a second job, clearly observed in placement in related firms, probably because of the change in the long-term inter-firm relationship in Japan, and it is also more difficult for workers to find a second job by themselves.

Table 5 (2) reports the estimation results for female workers. We see that older females are less likely to be employed at another firm, either related or unrelated. The effects of educational attainment, health status, physical ability to work, and job type are insignificantly estimated except for female workers who were in charge of sales or production; such workers

are less likely to be employed at an unrelated firm. Firm size of career the job is irrelevant for employment at related firms but is related to employment at unrelated firms or self-employed. In particular, female workers who were employed at a larger firm are less likely to be self-employed. This is also the case for female workers who quit the career job at the mandatory retirement age. Lastly, female workers were less likely to be employed at an unrelated firm in recent years, reflecting severe labor market conditions since the mid-1990s.

In sum, we see that the route to a second job depends on a variety of factors which differ between male and female workers. In addition, similar to the determinants of work status, route to a second job has been changing especially since the mid-1990s. For male workers, employment at other firms, regardless of whether they are related or unrelated, has become less popular since the mid-1990s. Female workers are less likely to be employed at an unrelated firm in recent years. Combining the results reported in Table 4, the results for male workers show that the function of career employers to place their workers in a second job has been changing since the mid-1990s, which was dominant before then as revealed by Clark and Ogawa (1997) using data from the 1980s.

5. Concluding remarks

In this study, we provide new systematic empirical evidence on determinants of arrangements immediately after mandatory retirement. Our empirical results show that the determinants of work status right after leave from the career job and route to a second job are different between male and female workers. Moreover, we observe that conditions pertaining to the opportunity to work and the route to a second job have been changing since the second half of the 1990s. This change means that the role of career employer placing employees in a second job, which was emphasized by Clark and Ogawa (1997) using a dataset from the 1980s, has declined since the middle of the “lost decade” of the 1990s.

We hope that further research from various perspectives will develop our empirical findings. First, future research should provide more evidence on the initial transition from career job using a more recent dataset to examine the function of career employers. Second, further research could evaluate change in income before and after leave from the career job and change in consumption for welfare implications. Such new studies will reveal new systematic facts on the labor market of the elderly in Japan and extract implications for employment policy to stimulate the labor supply of the elderly.

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Table 1 Proportion of male and female workers leaving career jobs before and after mandatory retirement age

Year	Males			Females		
	Employed at age 55	Left at mandatory retirement	Pre-mandatory retirement	Employed at age 55	Left at mandatory retirement	Pre-mandatory retirement
1983	70.8%	50.6%	-	50.8%	20.7%	-
1988	70.0%	58.0%	22.0%	58.4%	29.9%	41.0%
1992	71.2%	60.1%	20.1%	60.3%	33.3%	38.4%
1996	74.8%	58.3%	19.9%	58.3%	33.6%	38.0%
2000	77.1%	61.4%	18.9%	61.6%	38.3%	35.6%
2004	83.0%	61.1%	24.6%	61.1%	36.0%	43.6%

Note: Author's calculation using micro-data from *Survey on Elderly Employment* in each year.
The sample is the individuals who were aged 60 or over in each year.
The first column for each gender shows the proportion of the individuals who were employed a
The figures in the column of "Left at mandatory retirement" refer to the proportion of those wh
experienced mandatory retirement age among those who were employed at age 55.
Those in the column of "pre-mandatory retirement" is the proportion of those who left the job
before mandatory retirement age amoung those who were employed at age 55.

Table 2 Work status immediately after leaving career job

(1) Males

Left career job (N=3919)					
1	Working	44.2%	1	Extended employment (same firm)	27.4%
			2	Re-hired by employer	22.2%
			3	Employment by other firm (by introduction)	20.9%
			4	Employment by other firm (no introduction)	13.9%
			5	Self-employed	3.4%
			6	Part-time job, family business, volunteer work, etc	4.6%
			7	Others	7.7%
2	Unemployed	38.4%			
3	Out of labor force	17.5%			
Left after mandatory retirement age (N=2888)					
1	Working	47.7%	1	Extended employment (same firm)	30.9%
			2	Re-hired by employer	25.4%
			3	Employment by other firm (by introduction)	20.5%
			4	Employment by other firm (no introduction)	11.0%
			5	Self-employed	2.0%
			6	Part-time job, family business, volunteer work, etc	3.7%
			7	Others	6.5%
2	Unemployed	35.8%			
3	Out of labor force	16.5%			

(2) Females

Left career job (N=2221)					
1	Working	25.8%	1	Extended employment (same firm)	31.6%
			2	Re-hired by employer	22.8%
			3	Employment by other firm (by introduction)	4.7%
			4	Employment by other firm (no introduction)	14.5%
			5	Self-employed	1.4%
			6	Part-time job, family business, volunteer work, etc	15.6%
			7	Others	9.3%
2	Unemployed	38.5%			
3	Out of labor force	35.6%			
Left after mandatory retirement age (N=1116)					
1	Working	34.1%	1	Extended employment (same firm)	41.2%
			2	Re-hired by employer	28.3%
			3	Employment by other firm (by introduction)	5.4%
			4	Employment by other firm (no introduction)	9.2%
			5	Self-employed	0.5%
			6	Part-time job, family business, volunteer work, etc	9.4%
			7	Others	5.9%
2	Unemployed	36.8%			
3	Out of labor force	29.0%			

Note: Author's calculation using micro-level data from *Survey on Employment of the Elderly* .

Table 3 Summary statistics of the variables used in the estimation

	Male		Female	
	mean	S.D.	mean	S.D.
Age	63.76	3.45	63.42	3.59
Education				
Dummy for junior high school graduates *	0.38	0.48	0.50	0.50
Dummy for senior high school graduates or two-year c	0.42	0.49	0.47	0.50
Dummy for university graduates or above	0.20	0.40	0.02	0.15
Health status				
Dummy for "healthy" *	0.72	0.45	0.66	0.47
Dummy for "not healthy"	0.19	0.39	0.24	0.43
Dummy for "sick"	0.09	0.29	0.09	0.29
Physical ability to work				
Dummy for "able to work on full time basis" *	0.42	0.49	0.20	0.40
Dummy for able to work depending on conditions"	0.47	0.50	0.54	0.50
Dummy for "not able to work"	0.12	0.32	0.26	0.44
Job type before leave from career job				
Dummy for "expert or technical" *	0.10	0.30	0.10	0.30
Dummy for "management"	0.20	0.40	0.02	0.13
Dummy for "administration"	0.11	0.31	0.19	0.39
Dummy for "sales"	0.07	0.26	0.12	0.33
Dummy for "services"	0.03	0.17	0.17	0.37
Dummy for "security guard"	0.03	0.17	0.00	0.04
Dummy for "transportation and communication"	0.11	0.31	0.01	0.10
Dummy for "production workers"	0.34	0.47	0.38	0.49
Dummy for "agriculture, forestry, and fishery"	0.01	0.12	0.01	0.10
Years of tenure before leave from career job				
Dummy for 0-4 years *	0.02	0.15	0.05	0.22
Dummy for 5-9 years	0.05	0.22	0.13	0.34
Dummy for 10-14 years	0.09	0.28	0.18	0.38
Dummy for 15-19 years	0.07	0.25	0.15	0.36
Dummy for 20-24 years	0.12	0.32	0.18	0.39
Dummy for 25-29 years	0.08	0.28	0.10	0.30
Dummy for 30 or more years	0.57	0.50	0.20	0.40
Firm size of career job				
Dummy for 1-4 employees *	0.03	0.17	0.06	0.24
Dummy for 5-29 employees	0.16	0.36	0.25	0.43
Dummy for 30-99 employees	0.16	0.37	0.24	0.43
Dummy for 100-299 employees	0.15	0.36	0.17	0.37
Dummy for 300-999 employees	0.11	0.31	0.09	0.29
Dummy for 1,000 or more employees	0.26	0.44	0.13	0.34
Dummy for government employees	0.14	0.34	0.07	0.25
Experience of mandatory retirement (dummy variable)	0.74	0.44	0.50	0.50
Pension benefits (yen)				
Employer's pension insurance	16.89	6.58	9.12	4.38
Basic pension insurance	4.96	1.37	4.69	1.59
Mutual pension insurance	20.87	5.94	17.64	6.04
Company-provided pension insurance	9.94	7.23	5.06	4.59
Personal pension insurance	6.80	5.00	6.96	5.97
Year to leave career job				
Dummy for 1980s *	0.10	0.30	0.13	0.33
Dummy for 1990	0.03	0.17	0.03	0.18
Dummy for 1991	0.05	0.22	0.05	0.23
Dummy for 1992	0.06	0.24	0.06	0.24
Dummy for 1993	0.07	0.25	0.07	0.25
Dummy for 1994	0.08	0.27	0.07	0.25
Dummy for 1995	0.08	0.28	0.09	0.28
Dummy for 1996	0.10	0.31	0.09	0.29
Dummy for 1997	0.12	0.32	0.10	0.30
Dummy for 1998	0.13	0.33	0.13	0.34
Dummy for 1999	0.12	0.33	0.11	0.32
Dummy for 2000	0.08	0.27	0.08	0.28

Note: * refers to the variables which are used as the base case in the estimation.

Table 4 Determinants of work status among employed, unemployed, and out of labor force

(1) Males

	Unemployed				Out of labor force			
	coefficient	RRR	S.E.		coefficient	RRR	S.E.	
Age	-0.014	0.986	0.018		0.090	1.094	0.027	***
Education								
Dummy for junior high school graduates	-	-	-		-	-	-	
Dummy for senior high school graduates or two-year college	-0.164	0.848	0.082	*	-0.183	0.833	0.107	
Dummy for university graduates or above	-0.422	0.656	0.090	***	-0.358	0.699	0.122	**
Health status								
Dummy for "healthy"	-	-	-		-	-	-	
Dummy for "not healthy"	-0.231	0.794	0.087	**	0.091	1.095	0.143	
Dummy for "sick"	-0.151	0.860	0.152		0.315	1.370	0.262	*
Physical ability to work								
Dummy for "able to work on full time basis"	-	-	-		-	-	-	
Dummy for "able to work depending on conditions"	0.758	2.134	0.193	***	1.108	3.029	0.376	***
Dummy for "not able to work"	0.648	1.912	0.346	***	1.817	6.154	1.251	***
Job type before leave from career job								
Dummy for "expert or technical"	-	-	-		-	-	-	
Dummy for "management"	-0.145	0.865	0.151		-0.332	0.718	0.136	*
Dummy for "administration"	0.241	1.272	0.238		0.000	1.000	0.205	
Dummy for "sales"	0.001	1.001	0.201		-0.049	0.953	0.238	
Dummy for "services"	0.274	1.316	0.347		-0.230	0.795	0.281	
Dummy for "security guard"	0.523	1.688	0.511	*	-0.902	0.406	0.138	***
Dummy for "transportation and communication"	0.395	1.484	0.283	**	-0.241	0.786	0.186	
Dummy for "production workers"	0.457	1.579	0.270	***	0.159	1.172	0.237	
Dummy for "agriculture, forestry, and fishery"	0.560	1.750	0.668		0.921	2.513	1.058	**
Years of tenure before leave from career job								
Dummy for 0-4 years	-	-	-		-	-	-	
Dummy for 5-9 years	-0.224	0.799	0.246		-0.214	0.808	0.326	
Dummy for 10-14 years	-0.404	0.667	0.191		-0.611	0.543	0.210	
Dummy for 15-19 years	-0.311	0.733	0.217		-0.135	0.874	0.340	
Dummy for 20-24 years	-0.262	0.769	0.215		-0.258	0.772	0.287	
Dummy for 25-29 years	-0.170	0.844	0.243		-0.297	0.743	0.286	
Dummy for 30 or more years	-0.347	0.707	0.186		-0.282	0.754	0.264	
Firm size of career job								
Dummy for 1-4 employees	-	-	-		-	-	-	
Dummy for 5-29 employees	0.371	1.450	0.355		0.206	1.229	0.372	
Dummy for 30-99 employees	0.348	1.416	0.349		0.132	1.141	0.349	
Dummy for 100-299 employees	0.350	1.419	0.353		0.200	1.221	0.381	
Dummy for 300-999 employees	0.823	2.278	0.584	***	0.176	1.192	0.396	
Dummy for 1,000 or more employees	0.356	1.427	0.351		0.025	1.025	0.319	
Dummy for government employees	-1.000	0.368	0.123	***	0.105	1.110	0.375	
Experience of mandatory retirement	-0.651	0.522	0.052	***	-0.810	0.445	0.055	***
Pension benefits (yen)								
Employer's pension insurance	0.013	1.013	0.005	**	0.016	1.016	0.008	**
Basic pension insurance	0.052	1.053	0.064		0.077	1.081	0.075	
Mutual aid insurance	-0.046	0.955	0.010	***	0.036	1.037	0.010	***
Company-provided pension insurance	0.017	1.018	0.009	**	0.012	1.012	0.013	
Individual pension insurance	0.036	1.037	0.032		0.061	1.063	0.038	*
Year to leave career job								
Dummy for 1980s	-	-	-		-	-	-	
Dummy for 1990	-0.027	0.973	0.260		-0.184	0.832	0.287	
Dummy for 1991	0.438	1.549	0.348	*	0.778	2.177	0.556	***
Dummy for 1992	0.151	1.164	0.241		0.408	1.504	0.381	
Dummy for 1993	0.399	1.490	0.303	*	0.435	1.545	0.403	*
Dummy for 1994	0.306	1.357	0.265		0.906	2.474	0.606	***
Dummy for 1995	0.681	1.975	0.379	***	0.699	2.011	0.519	***
Dummy for 1996	0.564	1.757	0.330	***	1.109	3.033	0.740	***
Dummy for 1997	0.545	1.725	0.325	***	1.282	3.604	0.900	***
Dummy for 1998	0.437	1.548	0.294	**	1.216	3.372	0.854	***
Dummy for 1999	0.681	1.976	0.387	***	1.537	4.653	1.248	***
Dummy for 2000	0.649	1.914	0.411	***	1.528	4.608	1.393	***
Constant	0.268				-7.915			
Log likelihood	-3542.747							
Number of observations	3919							

Note: A multinominal logit model is used. ***, **, and ** refer to significance of 1%, 5%, and 10%, respectively.
The figures are expressed in terms of coefficients, relative risk ratios (RRR) and their standard errors.

Table 4 Determinants of work status among employed, unemployed, and out of labor force

(2) Females

	Unemployed				Out of labor force			
	coefficient	RRR	S.E.		coefficient	RRR	S.E.	
Age	-0.054	0.947	0.024	**	-0.046	0.955	0.026	*
Education								
Dummy for junior high school graduates	-	-	-		-	-	-	
Dummy for senior high school graduates or two-year college	-0.169	0.845	0.110		0.012	1.012	0.141	
Dummy for university graduates or above	-0.522	0.593	0.263		-0.655	0.520	0.214	
Health status								
Dummy for "healthy"	-	-	-		-	-	-	
Dummy for "not healthy"	-0.071	0.931	0.142		-0.048	0.953	0.151	
Dummy for "sick"	-0.515	0.597	0.158	*	-0.128	0.880	0.217	
Physical ability to work								
Dummy for "able to work on full time basis"								
Dummy for "able to work depending on conditions"	0.684	1.983	0.279	***	0.980	2.664	0.442	***
Dummy for "not able to work"	0.939	2.557	0.555	***	2.159	8.663	1.986	***
Job type before leave from career job								
Dummy for "expert or technical"	-	-	-		-	-	-	
Dummy for "management"	0.066	1.068	0.534		-0.005	0.995	0.459	
Dummy for "administration"	0.629	1.876	0.475	**	-0.054	0.947	0.228	
Dummy for "sales"	-0.121	0.886	0.249		-0.210	0.811	0.221	
Dummy for "services"	0.203	1.225	0.324		-0.345	0.708	0.184	
Dummy for "security guard"	-				-			
Dummy for "transportation and communication"	-0.111	0.895	0.537		-0.664	0.515	0.318	
Dummy for "production workers"	0.408	1.504	0.377		-0.049	0.952	0.233	
Dummy for "agriculture, forestry, and fishery"	-0.443	0.642	0.373		-0.968	0.380	0.223	*
Years of tenure before leave from career job								
Dummy for 0-4 years	-	-	-		-	-	-	
Dummy for 5-9 years	-0.751	0.472	0.157	**	-0.474	0.622	0.215	
Dummy for 10-14 years	-0.542	0.581	0.188	*	-0.534	0.586	0.198	
Dummy for 15-19 years	-0.497	0.608	0.201		-0.215	0.807	0.278	
Dummy for 20-24 years	-0.421	0.656	0.213		-0.620	0.538	0.184	*
Dummy for 25-29 years	-0.568	0.567	0.194	*	-0.861	0.423	0.154	**
Dummy for 30 or more years	-0.855	0.425	0.142	**	-0.854	0.426	0.149	**
Firm size of career job								
Dummy for 1-4 employees	-	-	-		-	-	-	
Dummy for 5-29 employees	0.274	1.315	0.392		-0.600	0.549	0.152	**
Dummy for 30-99 employees	0.412	1.510	0.452		-0.650	0.522	0.148	**
Dummy for 100-299 employees	0.405	1.499	0.462		-0.732	0.481	0.142	**
Dummy for 300-999 employees	0.442	1.556	0.517		-0.513	0.599	0.194	
Dummy for 1,000 or more employees	0.541	1.718	0.548	*	-0.489	0.613	0.189	
Dummy for government employees	-0.662	0.516	0.245		-0.517	0.596	0.222	
Experience of mandatory retirement	-0.696	0.499	0.064	***	-0.941	0.390	0.053	***
Pension benefits (yen)								
Employer's pension insurance	-0.001	0.999	0.013		-0.007	0.993	0.014	
Basic pension insurance	-0.072	0.930	0.054		0.094	1.099	0.059	*
Mutual aid insurance	-0.069	0.934	0.025	**	0.074	1.077	0.018	***
Company-provided pension insurance	0.008	1.008	0.038		0.043	1.044	0.041	
Individual pension insurance	0.051	1.053	0.069		0.107	1.113	0.071	*
Year to leave career job								
Dummy for 1980s	-	-	-		-	-	-	
Dummy for 1990	-0.178	0.837	0.320		0.098	1.103	0.403	
Dummy for 1991	0.007	1.007	0.325		0.161	1.175	0.350	
Dummy for 1992	-0.047	0.954	0.272		-0.312	0.732	0.210	
Dummy for 1993	0.192	1.212	0.346		0.047	1.048	0.303	
Dummy for 1994	0.416	1.516	0.447		0.529	1.697	0.501	*
Dummy for 1995	0.493	1.637	0.450	*	0.527	1.695	0.476	*
Dummy for 1996	0.277	1.319	0.350		-0.048	0.953	0.265	
Dummy for 1997	0.390	1.477	0.400		0.154	1.167	0.331	
Dummy for 1998	0.585	1.794	0.478	**	0.224	1.251	0.354	
Dummy for 1999	0.215	1.240	0.342		-0.176	0.839	0.248	
Dummy for 2000	0.227	1.255	0.376		-0.154	0.857	0.283	
Constant	3.534				3.720			
Log likelihood	-2111.487							
Number of observations	2218							

Note: A multinominal logit model is used. ***, **, and ** refer to significance of 1%, 5%, and 10%, respectively.
The figures are expressed in terms of coefficients, relative risk ratios (RRR) and their standard errors.

Table 5 Determinants of the routes to a second job

(1) Male workers

	Employment by other firm (by introduction)				Employment by other firm (no introduction)				Self-employed / Part-time job, family business, volunteer work, etc.			
	coefficient	RRR	S.E.		coefficient	RRR	S.E.		coefficient	RRR	S.E.	
Age	-0.148	0.862	0.034	***	-0.039	0.962	0.039		0.044	1.045	0.052	
Education												
Dummy for junior high school graduates	-	-	-		-	-	-		-	-	-	
Dummy for senior high school graduates or two-year college	0.506	1.659	0.387	**	0.389	1.475	0.320	*	0.120	1.128	0.310	
Dummy for university graduates or above	0.851	2.343	0.633	***	0.689	1.992	0.556	**	0.095	1.100	0.397	
Health status												
Dummy for "healthy"	-	-	-		-	-	-		-	-	-	
Dummy for "not healthy"	0.040	1.041	0.247		0.040	1.041	0.253		0.138	1.148	0.325	
Dummy for "sick"	0.247	1.280	0.518		0.116	1.123	0.460		-0.075	0.928	0.464	
Physical ability to work												
Dummy for "able to work on full time basis"	-	-	-		-	-	-		-	-	-	
Dummy for "able to work depending on conditions"	-0.101	0.904	0.162		-0.168	0.845	0.161		0.208	1.231	0.304	
Dummy for "not able to work"	-0.361	0.697	0.309		-0.391	0.676	0.279		0.036	1.036	0.491	
Job type before leave from career job												
Dummy for "expert or technical"	-	-	-		-	-	-		-	-	-	
Dummy for "management"	0.711	2.035	0.536	***	-0.462	0.630	0.187		-0.487	0.614	0.225	
Dummy for "administration"	-0.148	0.863	0.265		-0.673	0.510	0.182	*	-0.620	0.538	0.238	
Dummy for "sales"	0.162	1.175	0.469		-0.374	0.688	0.286		-0.111	0.895	0.402	
Dummy for "services"	-1.030	0.357	0.288		-0.186	0.830	0.450		-1.567	0.209	0.181	*
Dummy for "security guard"	1.580	4.856	2.009	***	0.286	1.331	0.665		-0.570	0.566	0.427	
Dummy for "transportation and communication"	-0.245	0.783	0.301		0.507	1.661	0.577		-0.620	0.538	0.263	
Dummy for "production workers"	0.022	1.022	0.328		0.047	1.048	0.342		-0.671	0.511	0.211	
Dummy for "agriculture, forestry, and fishery"	-	-	-		-	-	-		-	-	-	
Years of tenure before leave from career job												
Dummy for 0-4 years	-	-	-		-	-	-		-	-	-	
Dummy for 5-9 years	0.631	1.880	1.180		-0.356	0.700	0.490		-0.371	0.690	0.688	
Dummy for 10-14 years	-0.191	0.826	0.496		-0.122	0.885	0.551		0.293	1.340	1.169	
Dummy for 15-19 years	0.010	1.011	0.617		-0.240	0.786	0.507		0.669	1.952	1.728	
Dummy for 20-24 years	-0.338	0.713	0.428		-0.054	0.947	0.579		0.445	1.561	1.345	
Dummy for 25-29 years	-0.198	0.821	0.507		-0.233	0.792	0.505		0.448	1.565	1.387	
Dummy for 30 or more years	0.151	1.163	0.644		-0.392	0.676	0.392		-0.193	0.825	0.688	
Firm size of career job												
Dummy for 1-4 employees	-	-	-		-	-	-		-	-	-	
Dummy for 5-29 employees	0.797	2.219	2.403		-0.018	0.982	0.550		-0.538	0.584	0.282	
Dummy for 30-99 employees	0.060	1.062	1.162		-0.294	0.746	0.417		-1.138	0.320	0.159	**
Dummy for 100-299 employees	0.528	1.696	1.821		-0.284	0.752	0.428		-1.244	0.288	0.150	*
Dummy for 300-999 employees	1.061	2.888	3.112		-0.346	0.708	0.420		-1.666	0.189	0.114	***
Dummy for 1,000 or more employees	2.279	9.771	10.289	**	0.099	1.104	0.618		-1.511	0.221	0.118	***
Dummy for government employees	2.347	10.456	11.252	**	0.572	1.772	1.062		-1.278	0.279	0.160	**
Experience of mandatory retirement	-0.776	0.460	0.102	***	-1.834	0.160	0.034	***	-2.138	0.118	0.029	***
Pension benefits (yen)												
Employer's pension insurance	-0.002	0.998	0.010		-0.006	0.994	0.012		-0.022	0.978	0.015	
Basic pension insurance	-11.264	0.000	424.128		-0.331	0.718	0.174		-0.118	0.889	0.122	
Mutual aid insurance	0.009	1.009	0.014		0.006	1.006	0.015		0.020	1.020	0.019	
Company-provided pension insurance	0.023	1.024	0.015		-0.008	0.992	0.022		-0.014	0.986	0.035	
Individual pension insurance	-0.012	0.988	0.066		0.022	1.022	0.083		-31.627	0.000	0.000	
Year to leave career job												
Dummy for 1980s	-	-	-		-	-	-		-	-	-	
Dummy for 1990	0.304	1.355	0.612		0.106	1.111	0.533		0.696	2.006	1.248	
Dummy for 1991	0.168	1.183	0.476		0.240	1.271	0.510		0.714	2.043	1.084	
Dummy for 1992	-0.705	0.494	0.193	*	-0.176	0.838	0.314		0.331	1.393	0.725	
Dummy for 1993	-0.560	0.571	0.212		0.011	1.011	0.371		0.518	1.680	0.843	
Dummy for 1994	-0.322	0.725	0.262		-0.316	0.729	0.271		0.019	1.019	0.545	
Dummy for 1995	-0.669	0.512	0.187	*	-0.403	0.668	0.256		0.691	1.995	0.972	
Dummy for 1996	-0.855	0.425	0.153	**	-0.790	0.454	0.170		-0.016	0.984	0.500	
Dummy for 1997	-1.582	0.206	0.079	***	-0.957	0.384	0.144	**	-0.230	0.795	0.409	
Dummy for 1998	-1.751	0.174	0.066	***	-1.060	0.347	0.131	***	0.217	1.243	0.601	
Dummy for 1999	-1.611	0.200	0.078	***	-1.593	0.203	0.087	***	-0.221	0.802	0.425	
Dummy for 2000	-2.019	0.133	0.058	***	-2.316	0.099	0.053	***	-0.956	0.384	0.255	
Constant	7.692				3.525				-1.596			
Log likelihood	-1465.781											
Number of observations	1562											

Note: A multinominal logit model is used. ***, ** and ** refer to significance of 1%, 5%, and 10%, respectively.
The figures are expressed in terms of coefficients, relative risk ratios (RRR) and their standard errors.

Table 5 Determinants of the routes to a second job

(2) Female workers

	Employment by other firm (by introduction)				Employment by other firm (no introduction)				Self-employed / Part-time job, family business, volunteer work, etc.			
	coefficient	RRR	S.E.		coefficient	RRR	S.E.		coefficient	RRR	S.E.	
Age	-0.299	0.742	0.100	**	-0.184	0.832	0.062	**	0.064	1.066	0.079	
Education												
Dummy for junior high school graduates	-	-	-		-	-	-		-	-	-	
Dummy for senior high school graduates or two-year college	0.310	1.363	0.942		-0.077	0.926	0.343		0.052	1.053	0.388	
Dummy for university graduates or above	-0.369	0.692	1.080		-0.546	0.579	0.535		-0.081	0.922	1.214	
Health status												
Dummy for "healthy"	-	-	-		-	-	-		-	-	-	
Dummy for "not healthy"	-0.161	0.851	0.678		0.484	1.623	0.721		0.283	1.327	0.539	
Dummy for "sick"	-32.793	0.000	0.000		1.090	2.974	2.251		0.864	2.372	1.586	
Physical ability to work												
Dummy for "able to work on full time basis"	-	-	-		-	-	-		-	-	-	
Dummy for "able to work depending on conditions"	0.264	1.302	0.842		-0.307	0.736	0.281		0.302	1.352	0.539	
Dummy for "not able to work"	0.938	2.555	2.810		-0.855	0.425	0.310		-0.342	0.711	0.455	
Job type before leave from career job												
Dummy for "expert or technical"	-	-	-		-	-	-		-	-	-	
Dummy for "management"	-	-	-		-	-	-		-	-	-	
Dummy for "administration"	0.905	2.471	2.340		-0.898	0.407	0.240		-0.067	0.935	0.740	
Dummy for "sales"	-0.217	0.805	1.207		-2.892	0.055	0.041	***	-0.196	0.822	0.687	
Dummy for "services"	1.460	4.305	4.510		-0.954	0.385	0.227		0.546	1.726	1.345	
Dummy for "security guard"	-	-	-		-	-	-		-	-	-	
Dummy for "transportation and communication"	-	-	-		-	-	-		-	-	-	
Dummy for "production workers"	-0.823	0.439	0.553		-1.641	0.194	0.110	***	0.665	1.944	1.453	
Dummy for "agriculture, forestry, and fishery"	-	-	-		-	-	-		-	-	-	
Years of tenure before leave from career job												
Dummy for 0-4 years	17.567	0.000	.		-1.387	4.004	3.730		-0.907	2.476	2.497	
Dummy for 5-9 years	-	-	-		-	-	-		-	-	-	
Dummy for 10-14 years	16.688	0.415	0.463		-0.786	1.824	0.940		-0.087	2.269	1.234	
Dummy for 15-19 years	17.593	1.026	0.996		-2.224	0.433	0.270		-0.649	1.294	0.808	
Dummy for 20-24 years	16.952	0.541	0.536		-2.238	0.427	0.236		-0.692	1.239	0.692	
Dummy for 25-29 years	16.571	0.369	0.450		-2.511	0.325	0.226		-0.332	1.777	1.125	
Dummy for 30 or more years	15.733	0.160	0.186		-3.135	0.174	0.110	***	-0.969	0.939	0.570	
Firm size of career job												
Dummy for 1-4 employees	-	-	-		-	-	-		-	-	-	
Dummy for 5-29 employees	-1.800	0.165	0.247		-2.498	0.082	0.085	**	-1.787	0.167	0.148	**
Dummy for 30-99 employees	-1.922	0.146	0.216		-2.751	0.064	0.066	***	-2.922	0.054	0.049	***
Dummy for 100-299 employees	-2.148	0.117	0.177		-2.363	0.094	0.098	**	-3.710	0.024	0.023	***
Dummy for 300-999 employees	-35.335	0.000	0.000		-1.410	0.244	0.252		-2.370	0.093	0.089	**
Dummy for 1,000 or more employees	-4.533	0.011	0.026	*	-1.489	0.226	0.238		-3.026	0.048	0.048	***
Dummy for government employees	-2.755	0.064	0.108		-3.675	0.025	0.037	**	-4.401	0.012	0.021	***
Experience of mandatory retirement	-0.769	0.464	0.323		-2.154	0.116	0.043	***	-2.486	0.083	0.030	***
Pension benefits (yen)												
Employer's pension insurance	0.100	1.105	0.078		0.032	1.033	0.044		-0.001	0.999	0.043	
Basic pension insurance	0.343	1.409	0.416		0.152	1.164	0.218		0.036	1.037	0.159	
Mutual aid insurance	0.241	1.272	0.095	***	0.090	1.094	0.061		0.026	1.027	0.073	
Company-provided pension insurance	0.363	1.438	0.224	**	-0.016	0.984	0.127		-0.410	0.664	0.206	
Individual pension insurance	-14.360	0.000	1.695		0.170	1.186	0.219		-0.039	0.962	0.254	
Year to leave career job												
Dummy for 1980s	-	-	-		-	-	-		-	-	-	
Dummy for 1990	2.364	10.637	17.015		1.304	3.685	3.399		1.240	3.457	3.080	
Dummy for 1991	0.931	2.537	3.951		1.228	3.413	2.514	*	-0.234	0.791	0.689	
Dummy for 1992	0.694	2.001	2.677		0.407	1.503	1.085		1.020	2.772	1.920	
Dummy for 1993	-0.065	0.937	1.439		-0.130	0.878	0.671		1.058	2.880	1.967	
Dummy for 1994	0.398	1.488	2.095		0.019	1.019	0.816		1.038	2.823	2.112	
Dummy for 1995	0.317	1.373	1.724		-0.571	0.565	0.434		0.380	1.463	1.072	
Dummy for 1996	-0.463	0.630	0.956		-0.091	0.913	0.629		0.528	1.696	1.180	
Dummy for 1997	0.049	1.051	1.377		-1.592	0.203	0.175	*	-0.391	0.677	0.506	
Dummy for 1998	-1.080	0.339	0.467		-1.490	0.225	0.166	**	-0.939	0.391	0.295	
Dummy for 1999	-0.791	0.453	0.594		-1.552	0.212	0.156	**	-0.333	0.717	0.523	
Dummy for 2000	-1.678	0.187	0.298		-3.022	0.049	0.044	***	-0.935	0.393	0.338	
Constant	0.337				17.629				-1.228			
Log likelihood	-351.925											
Number of observations	476											

Note: A multinominal logit model is used. ***, **, and ** refer to significance of 1%, 5%, and 10%, respectively.
The figures are expressed in terms of coefficients, relative risk ratios (RRR) and their standard errors.
The base case for years of tenure is 5-9 years, not 0-4 years in all the other regressions.

[i] The average effective retirement age is defined as a weighted average of net withdrawals from the labor market at different ages over a five year period for workers initially aged 40 and over. Lazear (1986) discusses a wide array of definitions of "retirement" depending on the subject of analysis.

[ii] Recent empirical studies support that the long-term employment practice and the delayed compensation argument describes well the current Japanese labor market. Shimizutani and Yokoyama (2009) revealed that the long-term employment practice continues to prevail since the 1990s. Noguchi and Shimizutani (2008a, 2008b) provide empirical evidence that wages for regular workers under the long-term employment practice increase along with age at a pace faster than that for productivity in the child care market in Japan.

[iii] Seike and Yamada (2004) used the same survey collected in a different year and acknowledged that the sample of the survey is biased. Surprisingly, Seike and Yamada (2004) and Higuchi and Yamamoto (2002) did not refer to Clark and Ogawa (1997).

[iv] Tachibanaki and Shimono (1985) and Amemiya and Shimono (1989) are representative earlier works in Japan. In addition, previous studies on the choice of post retirement arrangements include Tachibanaki and Shimono (1994), Clark and Ogawa (1997), Mitani (2001), Higuchi and Yamamoto (2002) and Seike and Yamada (2004).

[v] A portion of pre-mandatory retirement workers was encouraged to use early the retirement advantage. The proportion of those workers who used early retirement advantage among all the workers who were employed at age 55 declined slightly from 4.7 percent in 1988 and 3.1 percent in 2000 for male workers and 3.0 percent to 2.5 percent for females.

[vi] The survey in years other than 2000 and 2004 does not ask the respondents about their work status right after separation from the career job. The 2004 survey has the information but did not ask regarding before workers' leave from career jobs. Another advantage of the 2000 survey is the availability of information on educational attainment.

[vii] A respondent was asked about health status and physical ability to work at the time of the survey, not at the time right after leave from the career job. We acknowledge the limitations of those measurements but they are the only variables available to control for health of the respondents.

[viii] The figures of pension income in Table 3 are the average of those who currently receive those benefits only.

[ix] We acknowledge that the estimated coefficients on subjective health status or self-reporting physical ability to work and thus they do not escape from endogeneity issues. Unfortunately, there is no information to remedy it in our dataset.

[x] The amount of the pension benefits is measured at the time of the survey. We interpret the type and current amount of pension benefit as the pension eligibility for each individual.

[xi] In 1995, a new subsidy program for continuing workers was introduced which compensates a part of the decline in wages if a firm continues to employ a worker in the same firm. Nevertheless, the relative risk ratio to be unemployed increased since the mid-1990s. We are not able to discern the effects of the program and condition in the year. In 1998, combined receipt of unemployment insurance benefits and public pension benefits has been prohibited, which discouraged workers to be unemployed if they were eligible to receive public pension benefits. Indeed, the estimated RRR declined in 1998 but increased in 1999 and 2000.

[xii] We excluded female workers whose career job type was security guard since the number is very small.

[xiii] We excluded the individuals who chose "miscellaneous" in the regressions.

[xiv] We excluded male individuals whose career job type was agriculture, forestry, and fishery and male and female individuals whose career job type was management, security guard, transportation and communication, or agriculture, forestry, and fishery since the number of the sample size for those categories is too small to obtain reliable estimates.