

FLEXICURE EMPLOYMENT OF OLDER PEOPLE IN SUPER-AGED SOCIETIES

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Abstract

This paper examines the evolving state of employment of older Japanese people. Since the rapid increase in population aging, employment options, such as re-employment, are favored over inflexible retirement age extension. In order to meet these needs, the Japanese government has created new employment policies. This study shows newer models for the re-employment of the aging population in Japan. Specifically, it shows that employment practices promoting balance between flexibility and security (i.e., flexicurity) provide successful alternatives to the re-employment of older people. Data are drawn from longitudinal research on employment conditions among older people conducted by the Japanese government. Using this data, the probability of being employed and wage rate is analyzed, including the degree of change that each factor has on the probability of older people being employed. Results indicate that super-aged societies, like Japan, should promote labor markets that balance flexibility and security for re-employing older people.

Keywords: old workers, reemployment, flexicurity, super-aged societies, Japan.



1. Introduction

Japan has become a super-aged society on an unprecedented global level. According to the estimates published by the National Institute of Population and Social Security Research (2012), the working-age (ages 15 to 64) population ratio in Japan is expected to decline by 12.9 percentage points from 2010 to 2060 because of the effects of the aging population and a falling birth rate. Meanwhile, the elderly population ratio is expected to increase consistently from 23.0% to 39.9% in 2060 (an increase of 16.9 percentage points).

However, employment of older people in Japan is a different issue compared to Western countries. In Japan, there is a mechanism in which people can have a lifelong career or simply work for a long period of time – rather than retiring from the labor market in early old age – to obtain personal fulfilments through work. In 2005, the Japanese government published the 6th International Study on Living and Consciousness of Senior Citizens (White Paper on Labor and Economy, 2005), stating that 40.3% of Japanese respondents in their 60s said that the ideal retirement age is around 65, while 31.3% said it is around 70. More than 80% of respondents reported that 65 or older is the ideal retirement age. Compared to other countries surveyed, such as the United States, Germany and Sweden, the ideal retirement age for Japanese is higher than the ideal age reported in most countries¹.

Given these circumstances, Japan has implemented a variety of labor market policies to accommodate the aging population. Unlike other OECD countries, Japan did not introduce an early retirement program during past economic downturns, and it has still not done so during the current recession and period of increasing unemployment rate. In the past, Japan's retirement age system stated that employment would be terminated when a worker reached the age of 60. Given the increased average life expectancy and the corresponding growth of the older population, there was a desire to extend the retirement age because people wanted to continue working past the age of 60. Japan enacted the Law Concerning Stabilization of Employment of Older Persons, and has subsequently amended it several times since the law was enacted in the 1970s. Specifically, the law was amended in 2004 to mandate companies to do one of the following items: 1) eliminate the mandatory retirement age; 2) increase the mandatory retirement age to 65; or 3) implement a program for re-employment after retirement. A survey was jointly conducted in 2008 by Nippon Keizai Shimbun (Nikkei Inc.) and JoongAng Ilbo (JoonAng Media Network) on the employment of older people among 211 Japanese and South Korean companies to determine the effects of this new amendment. According to the results, 95.2% (n = 119) of the Japanese companies offered a re-employment program for retirees while only 2.4% (n = 3) had

1 South Koreans also report an ideal retirement age of 65. Source: *LABORSTA* by International Labour Organization (ILO). *LABOUR STATISTICS PORTAL* by OECD for information on France and South Korea. For more details, see: <http://www.mhlw.go.jp/wp/hakusyo/roudou/05/dl/02-02b.pdf>.

extended their mandatory retirement age since 2005. Of the remaining companies that had not yet extended their retirement age, only 9.2% planned to do so in the future (Lee, 2011). These results indicate a significant shift in the direction of elderly employment policies in Japan. Specifically, there is a movement away from the stabilization of employment for the aged population and towards an approach that emphasizes the flexible nature of employment for the elderly.

In Japan, reemployment programs that allow balancing of the flexibility and security of work are becoming more prevalent. In this study, I analyzed the effect of reemployment as a new alternative for employment in the super-aged society as well as the effect of female employment aiming to utilize female human resources and promote the male-female joint participation in the labor market.

As an analytical concept, I have used 'flexicurity' of labor, which is popular in Europe. The concept of flexicurity was systematized by Wilthagen (1998) in the Netherlands. The European Union defined it as 'an integrated strategy for enhancing, at the same time, flexibility and security in the labor market' (European Commission, 2007), and announced flexicurity as their future strategy (European Union, 2007).

Specifically, flexicurity includes hiring/termination flexibility (external-numerical flexibility), work hour flexibility (internal-numerical flexibility), a variety of employment possibilities (functional flexibility), wage flexibility, employment security within the same company (job security), security in employment possibilities within the labor market including job change (employment security²), income security³, and work-life balance security (combination security; Wilthagen and Tros, 2004).

Further, I have analyzed other flexicurity factors using a three step process. First, using the inductive model, I analyzed the probability of employment in order to verify the specific personal factors that improve the employment security. Second, the wage function is estimated to verify the form of employment that improves income security. However, because the wage rate variable used in this study is only applicable to employed individuals, it is likely to cause sampling bias for women with a lower employment rate than men. Therefore, I have used Heckman 2SLS (two stage least squares) estimation model, which controls factors such as retirement experience that influence the reservation wage, to conduct the estimation.

Finally, a marginal structural model analysis is performed in order to verify the impact that the form of employment improving income security has on employment security. Because work-life balance security around work and household chores pertains especially to women's employment, it was analyzed throughout the entire process.

2 Because employment security is related to the overall employment security in the labor market and leads to proactive labor market policies and active life for older people, it can be said that it is a higher concept than job security, which is centered on the internal labor market. Heyes (2011) also prioritized 'security in the labor market' over job security.

3 Although Wilthagen and Tros (2004) included the concept of income security during the period of unemployment, this paper defines income security mainly based on wages.

2. Literature review

In this paper, I discuss the types of re-employment from the perspective of flexicurity and analyze how the probability of being employed and wage rates in a super-aged society are affected by the Japanese government. I also discuss how re-employment is viewed as a new potential countermeasure for businesses.

Through his analysis of industries and occupations, Hutchens (1988) demonstrated that the employment opportunity is limited among older people; however, he did not analyze the limitation of employment opportunity among women and disabled individuals.

In addition, the internal labor market theory that has supported the existing Japanese retirement system was theoretically based on deferred compensation (Lazear, 1979). However, Heywood *et al.* (1999) explained that delayed compensation more effectively deters shirking among young workers than among older workers. In addition, Daniel and Heywood (2007) presented weaker evidence that firms, which require greater specific human capital, also hire a smaller share of older workers. Recent studies by Heywood, Jirjahn and Tsertsvardze (2010) have also demonstrated the significant role of deferred compensation and internal labor markets as a negative predictor of hiring older workers.

Regarding the flexicurity concept, previous studies have examined whether it can be applied to countries other than the Netherlands and Denmark. The one that analyzed Spain – the country with serious segmentation of labor market similar to Japan – is interesting. According to Golsch (2003), the Spanish labor market is highly segmented with ‘insiders’ in permanent positions, and ‘outsiders’ (unemployed and inactive) and work-insecure employees on temporary posts. In other words, it indicates that the job insecurity does not seem to play a role for women. However, the subjects of this study are only young people aged 16-38. In another study, Kahn (2012) provided an analysis of the employment of new entrants (disproportionately women, youth and immigrants). According to this study, making labor markets more flexible reduces demand-side barriers faced by these groups, at the expense of higher levels of economic insecurity for incumbents and higher levels of wage inequality. Through their research on older people in Taiwan, Chang and Yen (2011) found that part-time employment is significant and positively associated with life satisfaction, while elderly with full-time employment have lower life satisfaction. According to Heyes (2011), the economic crisis has demonstrated the dangers inherent in prioritizing ‘security in the labor market’ over job security. Ultimately, the course of the recovery from the jobs crisis will depend on the policy choices of the governments. These will in turn be influenced by political and social struggles and the nature of accommodations reached within other countries and at the international level. Therefore, it suggests that studies and discussions are required at the international and policy levels in each country. Studies that analyzed the labor market in relation to the governance include Hobbs and Njoya (2005). They identified how reflexive governance approach has influenced regulatory developments at the European level, and illustrated the

potential significance of this approach for the regulation of employment relations in the UK. This review therefore suggests that a reflexive approach for regulating employment relations presents many positive opportunities, but the hopes invested in such an approach remain to be fulfilled yet. Another study on flexicurity is the one by Muffels and Luijkx (2008). According to this study, using comparative panel data for 14 European countries, they create dynamic outcome indicators for flexibility and employment security to assess the differences across countries and welfare regimes in balancing the two. The findings, that human capital investments promote upward mobility, also support the notion of the 'flexible employment relationship'. However, there is a limit that says our analyses were restricted to male transition patterns.

In this study, I have analyzed whether the concept of flexicurity can be applied to the labor market in a super-aged society by considering older men and women in East Asia – particularly Japan – and derive recommendations for policy.

3. Data and identification strategy

3.1. Data

In this study, I examined the effect of longitudinal factors on employment of older people by drawing on data collected by the Japanese government. In particular, I used data from the 1988, 1992, 1996, 2000, and 2004 Survey on Employment Conditions of Older Persons, conducted by Japan's Ministry of Health, Labor and Welfare (MHLW). These surveys targeted older individuals between the ages of 55 and 69 with the goal of understanding the actual state of employment and unemployment among older people, their attitudes toward work, and the employment conditions and plans for older people at business locations. Overall, these surveys aimed to provide useful information for the development of employment and work measures for older people in the future. This study examined older people after the retirement, from ages 60 to 69. The latest data was not included in this study because it takes a long time to obtain the data from the Japanese government agency.

'Choosing to work' and 'wage rate' are the dependent variables. Choosing to work is based on the survey question 'Did you work to earn money?' and 'Yes' was coded as 1, while 'No' was coded as 0. Wage rate is the hourly wage calculated by dividing monthly income by hours worked. Intention to continue working is based on the question 'Do you wish to continue doing your current job in the future?' which was asked only to current workers. 'I would like to quit working' was coded as 0, and all other responses were coded as 1.

Gender, age, health condition, retirement experience, non-work/pension income, pension income, number of household members, size of the last employer before retirement, job type before and after the retirement, current occupation, and dummy fiscal year were used as explanatory variables.

Pension income is the actual sum of the pension income. For the data in the survey years, when 'self' was included in the number of household members, an adjustment was made by subtracting 'self'. For the survey years before 1996 when the question

about 'whether the job type of respondent was the same before and after the retirement' was not asked, the variable same job type before and after the retirement was created by comparing the current and prior job types. In this case, the data was coded as 1 when the job types were the same. Current occupation was categorized into the following groups: white-collar, blue-collar, service, and agriculture; forestry and fisheries were excluded⁴.

The reason for using each variable in accordance with the specific analysis process is as described below.

In the first step using the induction model, the need and direction for redesigning the employment system and social security system were analyzed. The social security systems in East Asia, including Japan, are weaker compared to the ones in developed countries in Europe because of the security provided by family where traditionally children look after their retired parents (Shinkawa and Pempel, 1996). However, whether such logic still applies to Japan's super-aged society must be verified. The probability of employment among older people based on the number of household members is analyzed to determine whether the intention to work and the probability of employment decline due to children's support depend on the number of household members. In particular, the probability of employment and the wage rate among people with relatively low income – women, employees at small-scale workplaces, and blue-collar workers – were analyzed, and the need for redesigning the employment system and social security system was examined to present directions.

In the second step, the wage function estimate and specific redesigns of reemployment system were analyzed. In order to redesign the employment policy and system to allow people to attain fulfilment through work by having a lifelong career or work on long-term basis, I need to examine how the reemployment system should be practiced in Japan. There are legal systems related to the employment of older workers such as those at retirement age. Such forms were created partly due to the so-called firm-specific human capital; that is, they were created because working for one company for a long period of time enables the worker to learn company-specific techniques. Also, the recruiting expenses increase for the company because it is expensive to train new workers. The opportunity cost for the worker increases as well because it is difficult to get a new job at another company. Japan's lifetime employment system and the resulting mutual trust between the company and workers had created a virtuous cycle of trust. However, new aspects have emerged recently due to the changes in the lifetime employment system and retirement age. Therefore, using the wage rate⁵,

4 White-collar jobs include government employees, officers, managers, professionals, and office workers. Blue-collar jobs include craftsmen, machine and equipment operators, and manual labor. Service jobs include services, sales, and so on.

5 Recent research also showed that the gap between worker's marginal productivity and wage is not so large and the traditional method using wage as a proxy variable for productivity can be used as a first-order approximation. See Kodama and Odaki (2012), 'A New Ap-

which is a proxy variable for labor productivity, this paper verifies whether revitalizing the occupational labor market that can balance the flexibility and security – rather than turning workers to the external labor market where the existing internal labor market-like reemployment in the same company and the accumulated older human resources cannot be utilized – will lead to the best outcome for Japan which has become a super-aged society.

In the third step, marginal structural model analysis, the effect each factor, including market wage rate, has on the probability of employment among older people was verified. In particular, I verified whether the employment forms that were demonstrated in the second step of wage function estimate to increase income security would also have a positive impact on employment security.

The following section provides an analysis of the probability of being employed and wage rates, which are variables commonly used to assess if companies are re-employing older people.

3.2. Methodology

The detailed equation of the reduced form is shown below as follows:

$$y_{1i}^* = \beta_1 x_{1i} + \varepsilon_{1i} \quad y_{1i}^* = \beta_1 x_{1i} + \varepsilon_{1i} \quad [\text{Formula 1}]$$

$$y_{2i} = \beta_2 x_{2i} + \varepsilon_{2i} \quad y_{2i} = \beta_2 x_{2i} + \varepsilon_{2i} \quad [\text{Formula 2}]$$

$$y_{1i} = I(y_{1i}^* > 0), \quad i = 1, 2, \dots, N$$

Where:

x_i : Gender, age, health condition, retirement experience, non-work/pension income, pension income, number of household members, size of the last employer before retirement, job type before retirement, and dummy fiscal year;

y_{1i} denotes whether one is employed or not;

y_{2i} denotes the wage rate;

$I(A)$ represents the indicator function; if A is true, $I(A)$ will show 1, if not true, it will show 0.

y_{1i}^* is not observed; it only indicates the direction (sign). y_{2i} is observed only when y_{1i} is 1. The Heckman two-step estimation is used because while there are many men of productive age who work, the employment rates are lower among older people, especially among women, compared to men of productive age. The estimation is used in order to resolve sample selection bias that could affect the employment rate due to retirement experience and pension income.

The instrumental variables used to identify Formulas 1, 2, and 3 were the following: health condition, retirement experience, non-work/pension income, pension income, and number of household members. The variable number of household members

proach to Measuring the Gap between Marginal Productivity and Wages of Workers', RIETI Discussion Paper Series 12-E-028 for more information.

was used because although an increased number of family members to be supported would motivate people to work and affect the probability of being employed, it would not affect wage. The other variables were used in accordance with Parsons (1980). I assume that the error terms ε_{1i} and ε_{2i} take a bivariate standard distribution of

$$[(\varepsilon)_{1i}, \varepsilon_{2i}] \sim NID((0,0), (1, \sigma^2), \rho\sigma)$$

The analysis is started with the estimation of Formula 1, followed by the calculation of the inverse Mills' ratio to be incorporated in Formula 2. Detail is shown in Formula 3.

$$E(y_{2i}|x_{1i}, x_{2i}, y_{1i} = 1) = \beta_2 x_{2i} + E(\varepsilon_{2i}|x_{1i}, x_{2i}, y_{1i} = 1)$$

$$y_{2i} = \beta_2 x_{2i} + E(\varepsilon_{2i}|x_{1i}, x_{2i}, y_{1i} = 1) + \varepsilon_{2i}$$

$$y_{2i} = \beta_2 x_{2i} + E(\varepsilon_{2i}|x_{1i}, x_{2i}, y_{1i} = 1)\rho\sigma\lambda_i + \varepsilon_{2i} \quad [\text{Formula 3}]$$

$$\lambda_i = \frac{\varphi(\beta_1 x_{1i})}{\Phi(\beta_1 x_{1i})}$$

w_i : Japan: gender, age, size of the last employer before the retirement, and dummy fiscal year; South Korea: gender, age, education level, and dummy fiscal year.

Here, σ refers to the standard error of ε_{2i} and ρ refers to the correlation between ε_{1i} and ε_{2i} . λ is inverse Mill's ratio, the variable that determines whether selectivity exists. When this variable is significant, the null hypothesis 'there is no selectivity in the wage function' can be rejected to interpret that the wage function has selectivity.

ϕ is the standard normal probability density function, and Φ is the standard normal cumulative distribution function. In addition, a wage equation that takes sample selection bias into consideration will be estimated in order to see the effect of having the same job type and employer before and after retirement on the wage rate.

The structural equation calculates a new estimated wage rate based on the estimation results of Formula 3, and then incorporates it in Formula 1 in order to show the impact of wage rate.

4. Empirical evidence and implications

In order to explore the determinants of re-employing older people, the authors regressed Formulas 1 and 2 of the reduced form related to the probability of being employed, and then calculated the wage equation for the changes in workplace and job type related to re-employment. Model 1 shows the analysis of the wage rate change when the job type is the same before and after retirement. Model 2 shows the estimation results for the wage rate when the employer is the same before and after retirement. Below, the survey data was divided by age groups so that the analysis could be performed.

Table 1 shows that the estimation results of the inverse Mills' ratio by age group and gender are statistically significant, indicating there were sampling biases in terms of the variables working/not working. If OLS estimates are conducted without mak-

ing corrections, the results will have sampling bias. In this case, a two-step estimation was conducted.

Table 1: Reduced form (age 60–69)

	Age 60-64		Age 65-69	
	Probability of employment	Wage equation	Probability of employment	Wage equation
Gender (Male = 1)	0.825 (0.032)**	0.461 (0.042)**	0.553 (0.031)**	0.525 (0.062)**
Age	-0.027 (0.009)**	-0.020 (0.012)	-0.059 (0.009)**	0.005 (0.018)
Health condition (Poor = 1)	-0.717 (0.028)**		-0.853 (0.027)**	
Retirement experience (Yes = 1)	-0.010 (0.028)		-0.146 (0.028)**	
Non-work/pension income (in 10K yen)	-0.008 (0.002)**		0.001 (0.002)	
Pension income (in 10K yen)	-0.043 (0.003)**		-0.023 (0.003)**	
Number of household members	0.009 (0.008)		0.025 (0.007)**	
Size of the last employer before the retirement (Reference = Less than 30 employees)				
30 to 299 employees	-0.141 (0.034)**	-0.012 (0.043)	-0.173 (0.033)**	-0.157 (0.063)*
300 employees or more	-0.029 (0.036)	0.082 (0.043)#	-0.236 (0.036)**	-0.029 (0.067)
Job type prior to the retirement (Reference = Blue-collar)				
White-collar	0.174 (0.031)**	0.680 (0.038)**	0.144 (0.031)**	0.952 (0.057)**
Service	0.246 (0.035)**	0.285 (0.045)**	0.144 (0.034)**	0.517 (0.069)**
Dummy fiscal year (Reference = 1988)				
1992	-0.304 (0.049)**	0.127 (0.056)*	-0.023 (0.051)	0.272 (0.094)**
1996	-0.338 (0.050)**	0.296 (0.058)**	-0.027 (0.052)	0.467 (0.096)**
2000	-0.469 (0.055)**	0.538 (0.070)**	-0.153 (0.055)**	0.602 (0.107)**
2004	-0.291 (0.049)**	0.363 (0.056)**	-0.198 (0.052)**	0.392 (0.099)**
Inverse Mills Ratio		0.121 (0.062)#		0.096 (0.097)
_cons	2.375 (0.567)**	1.497 (0.734)*	4.147 (0.583)**	-0.122 (1.189)
log-likelihood	-7039.381	-9705.944	-7248.463	-8745.277
chi2	1975.229		1668.119	
R-square (pseudo R-square)	0.123	0.100	0.103	0.087
Observation	11615	5980	11996	4578

Note: # $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, figures in brackets () are standard errors

The overall sample population shows that the probability of being employed is significantly higher among men as opposed to women, and that the probability decreases as age increases. Furthermore, while a prominent gender effect appeared among samples in their early 60s, the age effect was largely seen among those in their late 60s. The probability of being employed decreases when health condition is poor or when the respondent had retirement experience. It similarly declines as non-work/pension income or pension income increases. Interestingly, the number of household members was not significant. The results of the estimations conducted separately for men and women are similar to the overall results; however, while the increased number of household members positively affected the probability of being employed among men, it had a negative effect on the probability of being employed among women. Therefore, I can conclude that men are more likely to be breadwinners than women, and moreover, that the capability of children to support their fathers is not very high in Japan.

In addition, the results indicate that the smaller the size of the last employer before retirement, the smaller the probability of being employed and the lower the wage rate. The probability of being employed and the wage rate are both higher for those who had a blue-collar job before retirement compared to white-collar workers and service workers. When the dummy fiscal year variables are included, I can see a trend that the probability of being employed decreases and the wage rate increases over time.

While it has been pointed out that because East Asia, including Japan, has social securities provided by family⁶, the conclusion drawn from the induction model indicates that there is a positive effect on being employed as the number of male household member increases, and parents are working to support unemployed family members rather than being supported by children. Because the traditional family security is no longer functioning, it is necessary to redesign the social security and employment systems. It also indicates that various measures, such as vocational training and job referral, are required for older people especially in the classes including women, workers in small-scale workplaces, and blue-collar workers because their probability of employment and wage rate are low.

In order to determine what form of re-employment after retirement has a positive effect on wages for older workers, an analysis was conducted using two-stage least squares in order to correct sampling biases. Estimations were run by including the employer variable (same employer before and after the retirement) and the job type variable (same job type before and after the retirement), and excluding the variables that affect only the probability of being employed but not the wage rate.

The most notable result of the analyses shown in Table 2 is that the wage rate is higher if the re-employment occupation is the same as the occupation before retirement. Among those with the same job type, the wage rate becomes even higher if the

6 Shinkawa and Pempel (1996) indicated that families in Japan play a more important role in the sectors of unemployment and personal social services relatively to those of Western countries.

worker was re-employed by a different company as opposed to being re-hired by the same company. The results of the long-term data analysis in these estimates indicate that, of all forms of re-employment, being re-employed in the same type of job by a different company allows for a balance between flexibility and security, and importantly, provides the largest positive impact on wage increase.

Table 2: Estimated wage equation (age 60–69)

	Age 60-64		Age 65-69	
	Model 1	Model 2	Model 1	Model 2
Gender (Male = 1)	0.520 (0.066)**	0.464 (0.066)**	0.439 (0.099)**	0.392 (0.098)**
Age	-0.021 (0.017)	-0.026 (0.017)	0.010 (0.025)	0.002 (0.025)
Size of the last employer before the retirement (Reference = Less than 30 employees)				
30 to 299 employees	0.123 (0.073)#	0.109 (0.073)	0.101 (0.105)	0.033 (0.104)
300 employees or more	0.230 (0.070)**	0.188 (0.070)**	0.242 (0.103)*	0.187 (0.102)#
Job type prior to the retirement (Reference = Blue-collar)				
White-collar	0.606 (0.052)**	0.613 (0.051)**	0.794 (0.080)**	0.870 (0.079)**
Service	0.339 (0.068)**	0.272 (0.067)**	0.554 (0.105)**	0.585 (0.103)**
Dummy fiscal year (Reference = 1988)				
1992	0.039 (0.071)	0.062 (0.071)	0.031 (0.109)	0.006 (0.110)
1996	0.111 -0.076	0.182 (0.077)*	0.202 (0.113)#	0.212 (0.115)#
2000	0.549 (0.094)**	0.677 (0.096)**	0.459 (0.137)**	0.535 (0.138)**
2004	0.311 (0.078)**	0.427 (0.084)**	0.203 (0.129)	0.278 (0.133)*
Same occupation before and after the retirement (= 1)	0.144 (0.048)**		0.330 (0.072)**	
Inverse Mills Ratio	0.226 (0.087)**	0.179 (0.086)*	0.188 (0.143)	0.264 (0.141)#
Same employer before and after the retirement (= 1)		-0.107 (0.053)*		0.007 (0.079)
_cons	1.295 (1.044)	1.783 (1.026)#	-0.692 (1.660)	-0.007 (1.645)
log-likelihood	-4972.877	-4778.065	-4068.380	-3942.881
R-square	0.097	0.100	0.087	0.085
Observation	3055	2985	2163	2120

Notes: 1) The estimate is for those who have experienced retirement and are currently employed.

2) # $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, figures in () are standard errors

As a conclusion from the wage function estimate, I found that, in redesigning the employment policy and system to enable people to attain fulfilment through work by having a lifelong career or work on long-term basis, reemployment in the occupation-

al labor market improves employment security related to employment possibilities within the labor market than turning workers to the external labor market where the existing internal labor market-like reemployment within the same company and the accumulated older human resources cannot be utilized. However, this tendency was not observed among women; it indicates that women's career does not command a premium as much as men's career because women's career is interrupted by early retirements due to marriage and childcare.

As mentioned above, I found that being re-employed by a different company with the same type of job positively affects wage rates for older workers. However, if this result had a negative impact on the probability of being employed, then the benefits for older people decrease even with a positive impact wage rate. In this section, therefore, I analyzed the effect of wage rate on the probability of being employed. I also examined the marginal effect of the probability of being employed in order to specifically confirm the degree of change each factor has on the probability of being employed. The analysis was performed below by dividing the survey data according to age groups. The results are shown in Table 3.

Findings show that, although the probability of being employed becomes higher as the wage rate increases among many of the age groups, the opposite pattern was observed among women in their early 60s (-0.236 , $p=0.101$). Based on this, I can see that the substitution effect of wage rate is generally higher than the income effect in Japan. I can also see that, of all re-employment types for older people, being re-employed by a company with the same type of job generally has a positive outcome for older workers.

The conclusion from the marginal structural model analysis is that the employment form demonstrated in the second step of wage function estimate to increase income security also has a positive impact on the employment security. However, opposite tendency was observed among women, suggesting the state of Japanese labor market where women in managerial or professional positions with high wages are more likely to be terminated and/or less likely to be re-hired than men.

One of the previous studies that provide a theoretical description of the retirement age system is Lazear (1979). According to his theory of deferred compensation contract, employers pay young workers less than their productivity, and pay older workers more than their productivity in order to provide incentives to work. Moreover, Lazear's theory states that employers force workers to retire when they reach the predetermined breakeven point between their productivity levels and wages. The theory of human capital outlined by Becker (1962) explains the retirement age system by arguing that companies only pay for employees to learn firm-specific skills because there is no incentive for them to pay for employees to develop general skill training.

The theories outlined in these studies explain how the labor market in Japan is closely related to long-term employment and seniority-based wages. Yet these theories were developed many years ago, and there is a limit to how well they explain the dynamics of today's labor markets. There is a need for more theoretical discussions about the re-employment of older people, which is a new form of employment in Japanese society.

Table 3: Structural & marginal analysis: Age 60-69

	Age 60-64		Age 65-69	
	Probability of Employment	Marginal Effect	Probability of Employment	Marginal Effect
Estimated wage rate	0.260 (0.046)**	0.103	0.161 (0.033)**	0.062
Gender (Male = 1)	0.701 (0.035)**	0.274	0.466 (0.033)**	0.173
Age	-0.023 (0.009)*	-0.009	-0.060 (0.009)**	-0.023
Health condition (Poor = 1)	-0.729 (0.028)**	-0.284	-0.861 (0.027)**	-0.309
Retirement experience (Yes = 1)	-0.016 (0.028)	-0.006	-0.148 (0.028)**	-0.057
Non-work/pension income (in 10K yen)	-0.008 (0.002)**	-0.003	0.001 (0.002)	0.000
Pension income (in 10K yen)	-0.044 (0.003)**	-0.017	-0.024 (0.003)**	-0.009
Number of household members	0.008 (0.008)	0.003	0.025 (0.007)**	0.009
Size of the last employer before the retirement (Reference = Less than 30 employees)				
30 to 299 employees	-0.145 (0.034)**	-0.058	-0.150 (0.033)**	-0.057
300 employees or more	-0.052 (0.036)	-0.021	-0.234 (0.036)**	-0.089
Dummy fiscal year (Reference = 1988)				
1992	-0.342 (0.049)**	-0.136	-0.066 (0.052)	-0.025
1996	-0.417 (0.051)**	-0.165	-0.102 (0.054)#	-0.039
2000	-0.600 (0.056)**	-0.234	-0.242 (0.055)**	-0.090
2004	-0.382 (0.053)**	-0.151	-0.261 (0.054)**	-0.098
_cons	2.079 (0.572)**		4.205 (0.583)**	
log-likelihood	-7053.423		-7250.495	
chi2	1947.145		1664.055	
pseudo R-square	0.135		0.103	
Observation	11615		12611	

Note: # $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, figures in () are standard errors

The employment system and practices in Japan have developed in relation to the retirement age system that is centered on seniority wages and oriented toward the internal labor market. The internal labor market refers to the process by which labor resource allocation and price formation work together within a corporate organization. The labor resources that enter a company are limited to young employees such as new college graduates, while employees who leave the company are limited to those who have reached the mandatory retirement age. This system limits contact with the exter-

nal labor market, and internal promotions through on-the-job training and continuation of employment are often practiced. These corporations adopt a seniority-based wage system, raising wages in stages based on internal training and promotion. In this way, the retirement age system is strongly connected to the internal labor market.

On the other hand, the external labor market is a labor trading system based on the price mechanism; companies are not involved in the development of individual skills and capabilities. One example of employment practices in this market is when employees leave their current employers for another company or a different line of work. Cases such as re-employment and job changes where existing occupational training and technical qualifications could be utilized in the new job are referred to under the term 'occupational labor market' in this paper.

Until recently, Japan's traditional employment systems and practices promoted an extremely inflexible labor market; however, this labor market is now changing because there are attempts to make the labor market more flexible. This is not to say that traditional labor market systems and practices in Japan have completely fallen by the wayside. While some changes have occurred, there are also inflexible aspects that continue to persist. It is necessary, therefore, to analyze how the re-employment of older people can provide balance between the security and flexibility of employment in these new labor markets.

5. Conclusions

This article investigates the determinants of re-employing older people with a flexicurity concept. The analysis of this study verified whether Japanese reemployment system can create flexicurity of labor by using a process involving three formulas.

First, the probability of employment was analyzed using induction model in order to verify whether personal factors improved employment security. The results indicated that the probability of employment was significantly higher for men compared to women. The probability declines with deteriorating health condition or with retirement experience. Similarly, the higher the non-work income and/or pension income, the lower the probability becomes. However, number of household members is partly significant. The results of separate estimations for men and women were not much different from the overall result. However, while age among men was not significant, and there was a significant positive impact as the number of male household members increased, the number of female household members had a negative impact. In other words, it shows that securing a job is difficult for women and they play only a supporting role rather than being the breadwinner for the family because their wages are low even if they work.

The probability of employment declines as size of the last employer before the retirement becomes smaller, but the wage rate rises as the size becomes larger. When job type before the retirement is white-collar or services, both the probability of employment and wage rate become significantly higher compared to blue-collar. Analysis of dummy fiscal years shows that the probability of employment is decreasing over time

while the wage rate is increasing. It suggests that various measures such as vocational training and job referral are required for older blue-collar workers at small companies.

In addition, the results of the wage function estimate to verify what form of employment actually increased income security demonstrated that the wage rate increases if the occupation before and after the retirement is the same. If the employer before and after the retirement is the same, the wage rate declines. The wage rate probably increases because when choosing the same occupation after the retirement, one would find a job with higher wages and long-term career. In the case of having the same employer, wage rate declines probably because lower wages were offered upon re-employment.

The fact that the wage rate increased upon finding a job within the same occupation implies that the occupation-specific human capital was enhanced. Since finding a job within the same occupation was possible, I can say there is flexibility, and from workers' perspective, there is security. These results suggest the possibility for the re-employment system in Japan to improve employment security within the labor market by providing job security within the same company and realize flexicurity for the entire labor market.

However, this trend was not prominent among women. It suggests that women's career does not command a premium as much as men's career because women's career is interrupted by retirements due to marriage and childcare. The government and companies need to consider measures such as childcare support to prevent career interruption.

Finally, even if the same-occupation reemployment at a company in the same industry had a positive impact on the wage rate, the employment security would still decline if it has a negative impact on the probability of employment. Therefore, the degree of change that various factors – including the labor market wage rate – have on the probability of employment for older people was analyzed. As a result, while the probability of employment turned out to be higher for the entire sample population when the estimated wage rate was higher, opposite trend was observed among women in their early 60s. Because managerial or professional jobs that reflect longer careers tend to earn higher wages, it suggests the condition of the Japanese labor market where women with such jobs are more likely to be terminated and/or less likely to be reemployed than men. It is necessary to design policies for women who often have part-time or contract jobs and struggle to develop their careers.

Using data of Japan, a super-aged society where long-term employment policy for older people is implemented, this study examined what chronological outcomes were obtained through the types of elderly reemployment. As a conclusion, I can see that the employment of older people in Japan will move toward reemployment that can balance the flexibility and security of employment rather than rigid extensions of the retirement age that have been done during the era of population aging and aged society. It became clear that of all reemployment measures, the revitalization of the occupational labor market that can balance the flexibility and security is particularly

needed. Therefore, information exchange among workers and matching job profiles via social network as well as vocational skill development are required.

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