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Non-Traditional Retirement Path with Discontinuous Disutility

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Ⅰ. Introduction

The retirement decision of older workers often includes some combination of post-career bridge employment and partial retirement. Until very recently, it had been assumed that early and permanent retirement would be the continuing trend. But some evidence(Ruhm(1990, 1991) & Quinn, Burkhauser, & Myers(1991)) has arisen indicating that a rather significant proportion of the male population aged 55 and older continued to work after retiring from their career-jobs during 1970~80. The Information Paper(U.S. Senate Special Committee On Aging, 1985) reports that for almost half of social security retiree beneficiaries, retirement was more of a transition

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process involving a gradual cessation of work activity. Thus, the presumption that abrupt total retirement will be the prevalent trend in the future may not be warranted. Alternative routes to retirement other than the traditional transition from full-time work to full-time leisure are common among American workforce. These findings suggest that a substantial numbers of older Americans are willing and able to continue to work despite the financial disincentives that often penalize the decision to do so. These bridge-jobs last long enough to be of interest. Bridge jobs are generally located in different industries or occupations from career positions and wages are usually lower than those of career jobs. This section of paper analyze different motives of taking bridge-jobs for different types of individuals.

Ⅱ. Career-Bridge Path with Discontinuous Disutility of Work.

In traditional retirement model that does not consider the bridge-job period, the individual worker's problem is to find the optimal R(retirement time) which maximizes lifetime earnings net of the disutility of work. The value of life-time earnings is the sum of wage payments until retirement, pension benefits, and social security benefits. Worker's total compensation during employment, W, is assumed to be constant over time for simplicity. Worker's compensation can be divided into a wage payment αW and contributions to the pension fund, $(1-\alpha)W$. Pension benefits and social security payments are constant each period until death at the time T. Two types of pension formulas are considered here. The first is the defined contribution type, which is essentially a savings plan. Let $P(R,(1-\alpha)W)$ denote the per period value of pension benefits given retirement at time R and contribution during employment of $(1-\alpha)W$ per period. The second is the defined benefit plan, which contribution and benefit do not necessarily cancel out. Workers who join a firm with a defined benefit pension plan agree to a wage package that defers some of compensation until the end. We assume all private pension plans are defined contribution plans.[1] Equation(2-1) then

1) Pension plans are either defined benefit or defined contribution in nature. The vast majority of

denotes the value of lifetime income when there is no discounting.

$$V = \int_0^R (W-(1-\alpha)W-\alpha\theta W-D(t))dt + \int_R^T ((P(R,(1-\alpha)W)+g(R,\alpha W))dt \cdots (2\text{-}1)$$

The fraction θ denotes the social security tax rate on wage income to support social security benefits, $g(R,\alpha W)$ and $D(t)$ denotes the disutility of work in period t. We assume $D'(t)>0$, such that the disutility of work grows as the worker ages. We assume that the fraction α of compensation is restricted to the case $[\ \underline{\alpha},\ \overline{\alpha}\ ]$, with $\underline{\alpha} > 0$ and $\overline{\alpha} < 1$.

For a defined contribution plan, the value of contributions is the same as the value of benefits.[2] Thus, two terms in the value function(2-1) cancel out(e.g. $\int_0^R (1-\alpha)Wdt = \int_R^T P(R,(1-\alpha)W)dt)$). The objective function becomes;

$$\int_0^R (W-\alpha\theta W-D(t))dt + \int_R^T g(R,\alpha W)dt \quad \cdots\cdots (2\text{-}2)$$

In non-traditional retirement model, the worker's career is divided into career-job period(B) and bridge-job period(R-B). Also workers experience a fresh start in a bridge-job. There is a discontinuity in disutility of work following a change of job. It is also assumed that the wage of bridge-job(W_B) has a distribution as $W_B \sim G(\overline{W_B},\ \rho^2_{WB})$. With the bridge-job option, the expected value function is given as below and worker's problem is to choose optimal B and R.

$$\int_0^B (W-\alpha\theta W-D(t))dt + V^R + \int_R^T g(R,\alpha W)dt \quad \cdots\cdots (2\text{-}3)$$

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employees in the United States are covered by defined benefit plans, reflecting the fact that most large employer and almost all union-negotiated plans have utilized this approach. However, there has been a growing interest in the defined contribution concept-in fact, approximately 80 percent of all new plans established since mid-1970s utilize the defined contribution approach.

2) Note that for a defined benefit pension plan, contributions and benefit do not necessarily cancel out. Workers who join a firm with a defined benefit pension plan agree to a wage package that defers some of compensation until the end.

where $V^R = \int [\text{Max} \int_B^R W_B - \theta W_B - D(t-B)dt]dG(W_B)$

To examine the conditions under which workers will accept a bridge-job the constraint($R \geq B$) is added to the value function. The Lagrangian for this case is;

$$L = \int_0^B (W - \alpha\theta W - D(t))dt + V^R + \int_R^T g(R, \alpha W)dt + \lambda(R-B) \quad \cdots\cdots (2\text{-}4)$$

$$\frac{\partial L}{\partial R} = W_B(1-\theta) - D(R-B) - g(R, \alpha W) + \int_R^T g_1(R, \alpha W)dt + \lambda = 0$$

$$\frac{\partial L}{\partial B} = W(1-\alpha\theta) - \overline{W}_B(1-\theta) + \int_B^R D'(t-B)dt - D(B) - \lambda = 0$$

$$\frac{\partial L}{\partial \lambda} = (R-B) \geq 0$$

$$\lambda = 0, \ \lambda(R-B) = 0$$

Then, condition for bridge-job becomes,

$$W = \frac{D(B) - \int_B^R D'(t-B)dt + \overline{W}_B(1-\theta)}{(1-\alpha\theta)} \quad \cdots\cdots (2\text{-}5)$$

$$W_B = \frac{D(R-B) + g(R, \alpha W) - \int_R^T g'(R, \alpha W)dt}{(1-\theta)} \quad \cdots\cdots (2\text{-}6)$$

The condition for no bridge-job is,

$$W > \frac{D(B) - \int_B^R D'(t-B)dt + \overline{W}_B(1-\theta)}{(1-\alpha\theta)} \quad \cdots\cdots (2\text{-}7)$$

$$W_B < \frac{D(R-B) + g(R, \alpha W) - \int_R^T g'(R, \alpha W)dt}{(1-\theta)} \quad \cdots\cdots (2\text{-}8)$$

Ⅲ. Critical Level of Disutility and Choice of Bridge-job

Now, rather than assuming worker differ in the potential wage to be received at a bridge-job, we assume workers differ in how quickly the disutility of a position grows. In particular, assume that D(t) has the following functional form.

$$D(t) = bt \quad (b \sim U(\bar{b}, \rho^2_b) \quad \cdots\cdots (2\text{-}9)$$

Further, assume that workers vary in the extent to which their career-job becomes more distasteful over time. In particular, assume that across al workers, $(b \sim U(\bar{b}, \rho^2_b)$. Then there exists a critical parameter that determines which workers will move to bridge-job. In particular, combining equation(3-13) into equation(3-8), a person who takes bridge-job the critical level of b at which a bridge-job is;

$$b^* = \frac{W(1-\alpha\theta) - W_B(1-\theta)}{R} \quad \cdots\cdots (2\text{-}10)$$

Unless with $b > b^*$ will have $B < R$ and thus will choose a bridge-job, we thus have the following proposition.

Proposition 1) For workers with a given level of W and $\bar{W}_B$ a greater proportion of workers will take bridge-job as the level of α goes up. With given levels of α and θ, a lower proportion of workers will take bridge-jobs as the level of total compensation (W) increases and higher proportion of workers will take bridge-jobs as the level of increases.

Proof) From equation 2-11), $\frac{\partial b^*}{\partial \alpha} < 0$, $\frac{\partial b^*}{\partial W} > 0$, and $\frac{\partial b^*}{\partial W_B} < 0$

It is implicitly assumed in proposition 1 that workers' move to a bridge-job is

voluntary. The reason for this is that the career-job becomes more distasteful to workers as workers spend more time on the same job. As the proportion of wage to total compensation increases, which is α, a bridge-job becomes a more attractive choice for some workers. As the level of bridge-job wage (W_B) goes up, bridge-job becomes an attractive choice to more workers.

Proposition 2) With given level of W_B, As the level of career-job wage (W) increases the duration of bridge-job (R-B) decreases. Among bridge-job takers workers with high career-job wage (W) takes bridge-job at later time than workers with low career-job wage(W).

Proof) From the Proof of Proposition 1, we already know that $\frac{\partial b^*}{\partial W} > 0$. As the critical level of b increases workers' departure from career-job is delayed. $\frac{\partial B}{\partial b^*} > 0$. With given value of R, $\frac{\partial(R-B)}{\partial W} < 0$.

Ⅳ. General Training, Specific Training, and Labor Turnover

Usually, transition from career-job to bridge-job involves change in occupation, industry or both. For this reason, most workers earn less in bridge-job. The ratio between bridge-job wage (W_B) and career-job wage (W) will affect the decision to take bridge-jobs. This ratio $\frac{W_B}{W}$ is partially determined by the level and types of human capital investment (on-the-job training) that worker had on career-job.

Basically there are two types of on-the-job training. One is general training and the other is specific training. The differences are well presented in Becker(1993). According to Becker(1993), general training is useful in many firms besides those providing it. Perfectly general training would be equally useful in many firms and marginal products would rise by the same extent in all of them. Training that increases productivity more in firms providing it will be called specific training. Completely specific training can be defined as training that has no effect on the

productivity of trainees that would be useful in other firms. Much on-the-job training is neither completely specific nor completely general but increases productivity more in the firms providing it and falls within the definition of specific training. The rest increases productivity by at least as much in other firms and falls within a definition of general training. The willingness of workers or firms to pay for specific training should closely depend on the likelihood of labor turnover. Turnover becomes important when costs are imposed on workers or firms, which are precisely the effects of specific training. A firm is hurt by the departure of a trained employee because an equally profitable new employee could not be obtained. In the same way an employee who pays for specific training would suffer a loss from being laid off or leaving because he could not find an equally good job elsewhere. Rational firms pay generally trained employees the same wage and specifically trained employees a higher wage than they could get elsewhere. Firms are not too concerned about the turnover of employees with general training and have no incentive to offer them a premium above wages elsewhere. Employees with specific training have less incentive to quit and firms have less incentive to fire them than employees with no training or general training, which implies that quit and layoff rates are inversely related to the amount of specific training. Turnover should be least for employees with extremely specific training and most for those receiving such general training that productivity is raised less in the firms providing the training than elsewhere. The likelihood of taking other jobs would be inversely related to the amount of specific training that worker received.

V. Empirical Test

The prior analysis , in particular proposition 5, identifies several factors that determine the likelihood of a bridge-job. The objective of this section is to test the predictions cited in proposition 1 and 2. The data set is the New Beneficiary Survey 1982 by Social Security Administration. This data set is merged with EOPP

(Employment Opportunity Pilot Projects) Survey data on training. The New Beneficiary Survey collected information concerning recent recipients of social security benefits and his/her spouse. Information collected in the survey includes demographic data on the respondents and spouse as well as other persons in the household, employment history, health information, and the current income of the respondent and spouse in the three months preceding the interview. Questionnaire data were collected in October through December of 1982 from a cross-section sample drawn from the Social Security Administration's Master Beneficiary Record(MBR). The sample included retired workers, disabled workers, and wives and widows who were new beneficiaries of social security benefits (first payment in mid-1980 through mid-1981). Data for a comparison sample of individuals who had established entitlement to Medicare and were eligible for, but had not yet received, monthly social security cash benefits were also collected. The total number of logical records are 18,599. For the purpose of our analysis, the sample was restricted to retired, (not self-employed), male workers. About forty-six percent(8,497) of the sample is female. After deleting female workers, self-employed, workers who had not worked more than 30 hours per week on the longest job, and workers whose longest job was not the main job or longest job was current-job, the sample size falls to 5,177. From this sample, those who had started bridge-job before age 55 are deleted. With these deletions, the total number of observations for the working data set is 2,692. Out of these 2,692 observations, 19 % experienced a bridge-job. About 80% of the sample were covered by a private pension system in their career-job. Among those bridge-job takers, 60% (305) of them were covered by a private pension in their career-job.

The employment history Section of the data contains detailed information on each job that the beneficiaries held since 1951 for up to a maximum of 26 full-time and part-time positions. For each job listed, values were assigned to indicate whether the job listed was current, last, longest, or identified by participants as their main. Each of these values is a separate variable and a set appears for each job listed on the grid. If a job was current a code of 1 appears for that variable. If the job was not current a code of '0' appears. If it was the last job as of May 1980, a code of '2' appears for the variable indicating last job and conversely, a "0" appears if the job

was not the last job. For the variable indicating longest job a '3' appears if the job was longest, or a '0' if the job was not the longest. If a job was both the current job and the last job or the longest job, the information on this job will be found in the current employment section only. If the last job was not the current job but was the longest job, the information on this job will be found in the last employment section only. If the longest job was not the main-job then these observations are excluded from data set. If the longest job is also current job then these observations are also deleted. If workers had more than one jobs for some period, the main job need to be identified. They were asked which job was the main job at that period. If workers are working at the bridge-job at the time of interview, wage information is found in current-job section of the survey. If workers have finished bridge-job before interview, wage information is found in last- job section of the survey. The information on wages of longest and last job are workers' self-stated wage level that workers received at the time of leaving the respective jobs. If bridge-job is current-job, the wage is in current level. Since wages of last-job and longest-job are indexed by 1967 scale, wages of current -job is divided by the scale ratio of 2.8, which came from the wage index in Economic Report to President, to reflects the increase wage levels between 1967 and 1982. When the wage ratio of bridge-job and career-job is greater than 1, it is classified as 'improved' in wage. According to this method, about 31 % of bridge-job takers received higher wage in bridge-job than in career-job. The average tenure of career-job for those who experienced bridge-job was 23 years. For those who have not experienced bridge-job, the average tenure was 27 years. Out of 509 total bridge-job takers, 403 workers(78%) had one bridge-job, 82 workers(16%) had two bridge-jobs, and 24 workers(4.7%) had three bridge-jobs. For non bridge-job takers, the average number of jobs that they had throughout their working career was 2.09. Excluding bridge-job, the average number of job for this group of bridge-job takers was 3.24. The average tenure of a bridge-job was 6.47 years. The average number of bridge-jobs were 1.28. About twenty-four percents of bridge-job takers had a bridge-job tenure of 1 to 3 years. 32.4 percent of bridge-job takers had bridge tenure of 4 to 6 years. 24.9 percents of bridge-job takers had bridge tenure of 7 to 10 years. About nineteen percent of

bridge-job takers had a bridge tenure more than 10 years. About 45% of bridge-job takers are from the manufacturing industry both durable and non-durable. For bridge-job takers, comparisons were made for occupations and industries in career-job and in bridge-job in Table 1.

Only 19% of bridge-job takers had same occupation and industry as career-job. The majority of bridge-job takers (61 %) had different occupation and industry with career-job. According to Table 1, The chance of improving wage level in bridge-job are higher when workers moved to same occupation than workers who moved to different occupation. The percentage was 41 % and 27 % respectively. Table 2 shows the educational background of the total sample and bridge-job takers.

Table 1 Occupation & Industry Comparison

Bridge-job Occupation vs. Career-job Occupation	Bridge-job Industry vs. Career-job Industry	Frequency
Different	Different	313(83)
Same	Same	98(43)
Same	Different	45(15)
Different	Same	53(18)
		509(159)

Table 2 Highest Grade Completed for Sample Group

Years of Education	Frequency (non bridge-job takers)	Frequency (bridge-job takers)
0~ 9	641(29.3%)	148(29.1%)
10~13	1,065(48.7%)	230(45.2%)
14~16	331(15.1%)	93(18.2%)
16+	146(6.6%)	38(7.5%)
Total	2,183(100.0%)	509(100.0%)

1. Variables for the Empirical Test

The first variable created from the first data set denotes whether workers retired

with bridge-job or without bridge-job. The variable termed Status equals '1' if the worker finished his career-job (longest and main) at age 55 and older and held another job before retirement. If the worker finished career-job before 55 and had another job before retirement, then these observations were deleted. If Status is '0', then it indicates that the worker did not have another job after finishing career-job. The variable Education indicates the highest grade completed by each workers. The variable "Wage" represents the salary of the career-job at the time of the leaving. The variable "HoursWork" indicates hours worked per week in career-job. If HoursWork is less than 35 then these observations are deleted from the data. The dummy variable 'Manufacturing' equals one if the workers' career-job was in the manufacturing industry. WholeSaleReta indicates work's career job was in the whole-sale industry or retail industry. OtherIndustry is the rest of industries. The dummy variable 'Pension' is created to indicate whether a worker is covered by a private pension or not. The variable 'SPIncome' represents income of spouse. SPIncome is made by averaging 20 years of reported income record of spouse between the time of survey and back to 20 years. The variable 'NPerson' indicates the size of household. The variable 'CTenure' indicates the tenure of career-job up to age of 55.

Data from the 1982 EOPP(Employment Opportunity Pilot Projects) Survey is merged with the Social Security Administration data set. In 1980, the Department of Labor funded an extensive survey. The survey interviewed employers at 23 sites across country. Approximately 5,700 employers were involved in this survey. In 1982, the National Institute of Education and the National Center for Research in Vocational Education funded a follow-up survey of the employers who took part in the original 1980 EOPP survey. The second wave contacted about 70 percent of the original respondents completed surveys for the second wave. The 1982 EOPP data set improved on the 1980 EOPP survey by obtaining more complete information on both the research and training activities of employers with regard to the most recently hired new employee. Restricting the analysis to employers who provided complete information on permanent new hires in the two year span following the 1980 survey provides a data set of 1,294 employers. The 1982 EOPP survey asked for the total

Table 3. Variables for Measure of Training

Occupation	Proportion-Specific-Training	Total-Training	Total-Specific-Training	Total-General-Training
Managerial	.24447853	184.23704	48.434628	137.17731
Professional	.25129412	160.72483	36.882028	124.90851
Technician	.2886028	139.34965	39.11013	100.72809
AdminSupport	.33677551	81.172336	26.299932	55.580803
Service	.34250001	66.933333	15.282667	51.650666
Production	.33135532	190.76695	57.632371	134.47539
Operation	.32113176	97.771717	32.951895	65.056252
Total	.30407244	128.20996	37.48628	91.354777

number of hours typically spent during the first three months employment ① by specially trained personnel providing formal training to the most recently hired workers, ② by line supervisors and management personnel providing formal training to the most recently hired workers, ③ by workers away from other tasks in providing the new worker with informal individualized training and extra supervision and, ④ by the worker watching others perform tasks. These sums provide direct measures of the total amount of on-the-job training. The occupations of the workers are grouped into seven different sectors(Managerial, Professional, Technician, AdminSupporting, Service, Production, and Operator). Four variables concerning on the job-training are created for each of those sectors of occupations using the EOPP data set. Total-Specific-Training indicates proportion of training that is specific. Total-Training indicates total training that worker received. Total-Specific-Training indicates total specific training that worker received. Total-General-Training indicates total general training that worker received.

2. Empirical model and the Determinants of Bridge-job Choices

The main purpose of the empirical testing is to test Proposition 1 of the paper. Proposition 5 states that as the level of total compensation (W) increases, fewer workers will take bridge-jobs. It also states that a greater proportion of workers will

take bridge-job as the level of α(wage/total compensation) goes up with a given level of W(total compensation from career-job) and W_B(total compensation from bridge-job). If a person does not have pension, α equal to 1.

The binary logit arises from the assumption that $\varepsilon_n = \varepsilon_{jn} - \varepsilon_{in}$ is logistically distributed.

$$F(\varepsilon_n) = \frac{1}{1+e^{-\mu\varepsilon_n}} \qquad \mu>0, \quad -\infty<\varepsilon_n<\infty,$$

$$f(\varepsilon_n) = \frac{\mu e^{-\mu\varepsilon_n}}{(1+e^{-\mu\varepsilon_n})^2} \qquad \cdots\cdots (2\text{-}11)$$

Under the assumption that ε_n is logistically distributed, the choice probability for alternative i is given by

$$P_n(i) = Pr(U_{in} \geq U_{jn}) = \frac{1}{1+e^{-\mu(V_{in}-V_{jn})}}$$

$$= \frac{e^{\mu V_{in}}}{e^{\mu V_{in}}+e^{\mu V_{jn}}} = \frac{e^{\mu\beta' X_{in}}}{e^{\mu\beta' X_{in}}+e^{\mu\beta' X_{jn}}}$$

$$= \frac{1}{1+e^{-\mu\beta(X_{in}-X_{jn})}} \qquad \cdots\cdots (2\text{-}12)$$

In our empirical model , we have 12 parameters. The meaning of each variable is already explained in data section of the paper.

The results reported in table 3~6 confirms the claims made in proposition 1. The sign for variable Income is negative and significant. It implies that as W(wage in career-job) goes up, workers are less likely to take bridge-job. The sign for the variable Pension is also negative and significant. Workers covered by a private pension are less likely to take bridge-job. The sign of variable Prop.Specific-Training is negative as expected. Recall that we postulated that as the level of specific training increases, the wage ratio between bridge-job and career-job would be greater. Workers are less likely to take bridge-job when this ratio is larger. This prediction is confirmed by the negative and significant TotalSpecific-Training and positive and

significant TotalGeneral-Training. As the level of specific training increases workers are less likely to take bridge-job. As the level of general training increases, workers are more likely to take bridge-job. As the level of specific training increases, the ratio between W_B and W decreases. From 2-11), as ratio between W_B and W decreases, the critical level of b will increase. As we expected, though not significant, sign for NPerson is positive and sign for SPIncome is negative. As the size of household increases workers are more likely to take bridge-job. As the size of spouse income increases workers are not likely to take bridge-job. The variable Ctenure is positive and significant. Workers who has longer tenure up to age of 55 in career-job are more likely to take bridge-job.

Table 4. Determinants of Bridge-Job Choice 1982(using cut-off age of 55 for bridge-job)
Logit Model, 2 Outcomes: Status=0 Status=1,Coefficients for Status=0 set to zero

Variable	Coefficients	t-ratio	Coefficients	t-ratio
Constant	0.476037	0.630	-1.36465	-4.623
Education	0.865809E-01	4.536	0.870294E-01	4.535
Wage	-0.669977E-04	-9.37	-0.652275E-04	-9.188
Whole Sale Ret	0.144333E-02	0.007	0.594672E-01	0.285
Other Industry	0.251811	1.467	0.251448	1.464
NPerson	0.723150E-01	1.263	0.715207E-01	1.248
CTenure	0.292230E-01	5.412	0.306983E-01	5.663
SPIncome	-0.264417E-04	-1.033	-0.261012E-04	-1.020
Pension	-1.06819	-8.386	-1.09838	-8.641
Prop. Specific-Training	-5.53670	-3.068	-	-
Total-Training	0.821595E-03	0.641	-	-
Total Specific-Training	-	-	-0.260750E-01	-2.678
Total General-Training	-	-	0.126912E-01	3.276
N=2692				
Log-Likelihood		-1,175.1	Log-Likelihood	-1,175.6
Restricted(Slopes=0) Log-L		-1,305.3	Restricted(Slopes=0) Log-L	-1,305.3
Chi-Squared(10)		260.51	Chi-Squared(10)	259.40

Table 5. Determinants of Bridge-Job Choice 1982(using cut-off age of 52 for bridge-job)

Logit Model, 2 Outcomes: Status=0 Status=1, Coefficients for Status=0 set to zero

Variable	Coefficients	t-ratio	Coefficients	t-ratio
Constant	0.665993	0.965	-1.17427	-4.327
Education	0.906717E-01	5.231	0.935669E-01	5.347
Wage	-0.796359E-04	-11.815	-0.778045E-04	-11.628
Whole Sale Ret	-0.103541E-01	-0.054	0.387981E-01	0.203
Other Industry	0.341573	2.217	0.342235	2.219
NPerson	0.677596E-01	1.275	0.679712E-01	1.279
CTenure	0.368627E-01	7.298	0.381582E-01	7.526
SPIncome	-0.977663E-05	-0.426	-0.931412E-05	-0.406
Pension	-1.13913	-9.797	-1.16771	-10.067
Prop. Specific-Training	-5.45137	-3.294	-	-
Total-Training	0.139060E-02	1.201	-	-
Total Specific-Training	-	-	-0.218708E-01	-2.422
Total General-Training	-	-	0.117723E-01	3.287
N=2870				
Log-Likelihood		-1,370.1	Log-Likelihood	-1,371.9
Restricted(Slopes=0) Log-L		-1,579.5	Restricted(Slopes=0) Log-L	-1,579.5
Chi-Squared(10)		418.77	Chi-Squared(10)	415.21

Table 6. Determinants of Bridge-Job Choice 1982(using 57 as a cut-off age for bridge-job)
Logit Model, 2 Outcomes: Status=0 Status=1, Coefficients for Status=0 set to zero

Variable	Coefficients	t-ratio	Coefficients	t-ratio
Constant	0.593319	0.676	-1.58012	-4.739
Education	0.720762E-01	3.320	0.734009E-01	3.362
Wage	-0.504639E-04	-6.510	-0.481745E-04	-6.281
Whole Sale Ret	0.725158E-01	0.310	0.136134E-01	0.582
Other Industry	0.346837	1.822	0.341367	1.790
NPerson	0.832612E-01	1.298	0.819518E-01	1.277
CTenure	0.213921E-01	3.530	0.230556E-01	3.791
SPIncome	-0.308263E-04	-1.038	-0.310268E-04	-1.045
Pension	-1.08084	-7.519	-1.11805	-7.804
Prop. Specific-Training	-6.46598	-3.083	-	-
Total-Training	0.491380E-03	-0.326	-	-
Total Specific-Training	-	-	-0.302749E-01	-2.729
Total General-Training	-	-	0.128990E-01	2.922
N=2535				
Log-Likelihood		-939.37	Log-Likelihood	-940.18
Restricted(Slopes=0) Log-L		-1,021.3	Restricted(Slopes=0) Log-L	-1,021.3
Chi-Squared(10)		163.87	Chi-Squared(10)	162.25

Table 7. Relationship Between Bridge-job Tenure and Career-job Wage 1982(using 55 as a cut-off age for bridge-job)

Variable	Coefficients	t-ratio	Coefficients	t-ratio
Constant	1.47625	0.711	4.43385	5.426
Education	0.180233	3.527	0.177342	3.444
Wage	-0.717835E-04	-4.698	-0.747172E-04	-4.944
Whole Sale Ret	-0.178123	-0.322	-0.268644	-0.483
Other Industry	0.160271	0.370	0.164434	0.379
NPerson	-0.219044	-1.499	-0.226422	-1.548
CTenure	0.646630E-01	4.207	0.628644E-01	4.071
SPIncome	-0.608776E-04	-0.867	-0.630632E-04	-0.897
Pension	-0.760411	-2.418	-1.08084	-7.519
Prop. Specific-Training	8.67071	1.758	-	-
Total-Training	0.239784E-02	0.690	-	-
Total Specific-Training	-	-	0.420035E-01	1.547
Total General-Training	-	-	-0.155395E-01	-1.455
N=509				
Std.Error of Regr.	3.14957		Std.Error of Regr.	3.15174
R-squared	0.976389E-01		R-squared	0.963949E-01
Durbin Watson Stat.	1.98464		Durbin Watson Stat.	1.98760
Log-Likelihood	-1,300.64		Log-Likelihood	-1,300.99

VI. Summary and Conclusion

In non-traditional retirement model, which considers the period of bridge-job, the factors affecting decisions to take bridge-jobs are analyzed. This extended model utilize the concept of critical level of disutility from career-job. The factors affecting the departure from career-job are expressed in terms of critical level of disutility b^*. The model shows that the higher the career-job wage the lower the chance of taking the bridge-job. It also shows that the private pension contribution rate, $1-\alpha$, is negatively related with critical level of disutility. The higher the α, the higher the

chance of taking the bridge-job.

The empirical tests shows that pension and wage are negatively related to the probability of taking bridge-job. It also shows that as the level of specific-training in career-job goes up workers are less likely to take bridge-job.

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Pension plans are either defined benefit or defined contribution in nature. The vast majority of employees in the United States are covered by defined benefit plans, reflecting the fact that most large employers and almost all union-negotiated plans have utilized this approach. However, there has been a growing interest in the defined contribution concept-in fact, approximately 80 percent of all new plans established since mid-1970s utilize the defined contribution approach. Note that for a defined benefit pension plan, contributions and benefit do not necessarily cancel out. Workers who join a firm with a defined benefit pension plan agree to a wage package that defers some of compensation until the end.