

The Determinants and Effects of Early Job Separation in Japan

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Abstract

Using the panel data from the *2011 Japanese Longitudinal Survey on Employment and Fertility (LOSEF)*, this study aims to investigate (i) the determinants of early job separation of male workers who started their working career as regular employees, and (ii) the effects of early job separation on later labor market outcomes. In conducting this investigation, we take into account the possibility that (i) and (ii) may vary by cohort, reflecting the considerable changes in Japan's industrial structure and labor market since the early 1990s. The results of the investigation can be summarized as follows. First, the percentage of individuals leaving the first job within the first five years is significantly higher for individuals in younger cohorts. Second, in line with previous studies, we find that the duration of the first job is significantly related with macroeconomic conditions at the time of searching for the first job. We also find that for the younger cohort the duration of the first job is related with individuals' non-cognitive skills (e.g., communication skills). Finally, individuals leaving their first job within the first few years are likely to be enrolled in the employees' pension insurance system for fewer years and more likely to change their job in the future. Furthermore, individuals who leave the first job very early – within one or two years – tend to change their job more frequently than others.

1. Introduction¹

For the past several years, youth employment has been hit hard by the global financial and economic crisis.² Across the world, labor market conditions for the young have tended to be much worse than for older cohorts in terms of access to good quality jobs. Even among young individuals who do find employment, future prospects for their subsequent working life tend to be much bleaker.³

Japan is no exception in this regard. In Japan, firms have recruited new graduates regularly as a major mean to secure employees and guaranteed to those employed as regular workers (full-time workers with permanent contract) intensive job training, long-term employment, and seniority payment. Hence, the young people who could enter the recruitment route successfully were able to gain stable employment and salary, while improving their vocational skills. However, due to the financial and economic crisis occurred in the last 20 years, the above-mentioned route of obtaining regular employment has become narrower over time (Employment Status Survey, 2007).

At the same time, however, the number of young workers who quit their regular job is not miniscule: from the year 2006 to 2007, about 0.44 million male workers between age 25 to 34 left their regular employment, and 0.12 million of them became non-workers in 2007. One can argue that the leaving and changing jobs is not a “problem” for young workers because their mobility costs and job-specific skills are still low; in fact, job separation can be regarded as a process of improving the quality of job matches for workers at the early stage of their career (Bachmann et al, 2009). For example, Topel and Ward (1992) show that, in the US, job turnover among young workers is a process of gaining long and stable employment. Using the Canadian Administrative data, Oreopoulos et al (2012) find that, while college graduates who faced bad macroeconomic conditions at the time of entering the labor market graduation are more likely to start their career with low wages, they tend to catch up by changing jobs. Bachmann et al (2009) find a similar result in Germany.

While the evidence in other countries suggests that job separation of young workers is not necessarily harmful to their later labor market outcomes, the same result may not hold in Japan. Even if a young worker could obtain regular employment at graduation, he/she may lose the opportunities to receive intensive job training if he/she separated from the first job because such opportunities are largely limited to new graduates. In particular, separating from regular employment in a short period of time may result in a loss of chance to gain even general business skills and hence, can have negative effects on the subsequent career of

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² More details on the current employment situation for the young in developed countries around the world can be found in, for example, ILO (2012), Council of the European Union (2011), and OECD (2010, 2012).

³ Issues concerning labor market conditions for the young have received considerable attention worldwide, with studies examining school-to-work transition, why youth unemployment rates are so high, how the young have responded to the deteriorated in the job market, and the long-term economic consequences on individuals of labor market entry conditions. Notable contributions in this context are the studies by Arulampalam (2001), Blanchflower and Freeman (2000), Booth, Francesconi, and Frank (2002), Bowlus (1995), Bukodi and Dex (2010), Ellwood (1982), Ferber and Gibbons (1996), Freeman and Wise (1982), Kahn (2010), McGinnity, et al. (2005), Oreopoulos, et al. (2012), Quintini et al. (2007), Ryan (2001), Steijn et al. (2005), and Topel and Ward (1992).

the leavers. It is also possible that early job separation is considered as a signal of a lack of patience.

Past studies dealing with the topic on job separation among young workers who started their career as a regular employee have focused mainly on causes of job separation. For example, the influential work by Genda and Kurosawa (2001) examines factors affecting job separation of young workers who obtained regular employment as new graduates. They show that a high unemployment rate at the year before graduation increases the probability of separating from the first job. Since the prospect of receiving a good job offer is low during a recession, new graduates tend to accept a job offer of lower quality, which in turn leads to increased job separation. The authors also find that the duration in the first job was longer for a young worker who answered that support from schools/universities in job placements was effective, which indicates the importance of the role played by schools/universities in improving job match quality for new graduates. These results cast doubts on the idea that young individuals tend to quit their job in a short period of time because their aspiration for working is low.

Referring to data from a survey conducted by the Japan Institute for Labour Policy and Training, Ohta (2010) points out a number of factors that can result in early job separation among young regular employees, including a lack of prior information on the job, a lack of training within the firm, and a lack of bosses/colleagues with whom new employees can consult. Further, Konno (2012) describes how some young regular employees are overworked in companies called “black companies” and how such hard working conditions makes young workers leave their job.⁴

While these studies have significantly contributed to our understanding of why young workers who could obtain regular employment may separate from the job after a short period of time, relatively little is known about the subsequent labor market outcomes of those early job leavers. This is in sharp contrast to the accumulated evidence of the long-run effects of the initial job on later labor market outcomes and the consequences of being a non-regular employee or non-worker after graduation (e.g., Kondo. 2007; Hamaaki et al, 201; Ariga et al, 2012; Takayama and Shiraishi, 2012).

Building on such previous studies and using the panel data from the *2011 Japanese Longitudinal Survey on Employment and Fertility (LOSEF)*, this study aims to investigate (i) what factors affect early job separation of male workers who started their working career as regular employees and (ii) what the subsequent labor market outcomes of early job leavers tend to be. In conducting this investigation, we take into account the possibility that (i) and (ii) may vary by cohort, reflecting the considerable changes in Japan’s industrial structure and labor market since the early 1990s.

The results of the investigation can be summarized as follows. First, there are large differences across cohorts in the percentage of individuals leaving the first job within the first five years: the percentage is significantly higher for individuals in younger cohorts. Second, in line with previous studies, we find that the duration of the first job is significantly related with macroeconomic conditions at the time of searching for the first job. We also found that, for the younger cohort, the duration of the first job is related with individuals’ non-cognitive skills (e.g., communication skills): individuals with higher non-cognitive skills are less likely to leave their first job early. Finally, individuals leaving their first job within the first few years are likely to be

⁴ An analysis of job turnover using the *LOSEF* is provided by Kambayashi (2012).

enrolled in the employees' pension insurance system for fewer years and more likely to change their job in the future. Furthermore, individuals who leave the first job very early – within one or two years – tend to change their job more frequently than others.

2. Data source⁵

2.1. Survey and sample

The data we use are from the *Japanese Longitudinal Survey on Employment and Fertility (LOSEF): the 2011 Internet Version*. The survey was conducted in early November 2011 by the Project on Intergenerational Equity at the Research Institute for Policies on Pension and Aging. The respondents were selected among persons who registered as monitors with an Internet survey company and who were born between November 1, 1961 and October 31, 1981.

The 2011 *LOSEF* consisted of three elements that were conducted simultaneously: (1) a survey that asked respondents to provide information contained in the 2009 Social Security Statements; (2) a retrospective panel survey based on the items contained therein (such as career changes, marriage, childbirth, whether or not residing with parents, etc.); and (3) a survey on many other questions relating to current living and working circumstances. The Social Security Statement is an administrative document which contains information on an individual's past enrolment in social security pension schemes (the employees' pension insurance (EPI) and the national pension scheme), employment record, the amount of standard monthly compensation (pensionable remuneration), etc., and is issued annually to all residents of Japan. In particular, when individuals reach certain specified ages (35, 45, and 58 years of age), they receive a Social Security Statement containing detailed and long-term pension records starting from age 15 at the earliest to the present day. However, in 2009 (which was the first year that Social Security Statements were issued), all members and pension recipients of the EPI or the national pension scheme received this detailed version.

By utilizing the 2009 Social Security Statements, the 2011 *LOSEF* obtained more or less accurate long-term records of changes in employment status, monthly earnings, and history of contribution payments, starting from the moment a person commenced working up to the present. As a result, the 2011 *LOSEF* was able to acquire a panel data set that spans up to 45 years (depending on the number of years since a person started working), although it exhibits a sample selection bias that is commonly observed in Internet-based surveys.⁶

We focus on a sample of male respondents who started their working career as a regular employee

⁵ Empirical analyses based on administrative data are still relatively rare, but there are exceptions. For example, von Wachter and Bender (2006) used German employment register data to study the long-run effects of an early career job loss on changes in wages over time. Bachmann et al. (2009) used German administrative data called the IAB Linked Employer-Employee dataset constructed through the combination of the *IAB Establishment Panel* and the *Employment Statistics Register*, to analyze the determinants of job mobility and its cohort effects on lifetime earnings. Further, Brunner and Kuhn (2009), using Austrian social security records, found that unfavorable job entry conditions resulted in persistent and large negative effects on lifetime earnings. Finally, making use of various types of Swedish administrative data, including a longitudinal income register and the employment register, Gartel (2009) found that unemployment upon graduation reduces future earning prospects.

⁶ See Takayama, Inagaki, and Oshio (2012) for a more detailed explanation of the 2011 *LOSEF*.

immediately after graduation.^{7,8} Table 1 presents the number of observations in our sample by cohort. Among the 1,994 male respondents in the 2011 LOSEF, 1,403 persons obtained regular employment immediately after graduating from school/university.⁹

Table 1 about here

It should be noted that since the proportion of those that entered regular employment immediately after graduation has decreased over time (Table 1), our sample selection criteria are stricter for younger individuals.

2.2. *Dependent and independent variables used in the empirical analysis*

Using the sample described above, we conduct an analysis of (i) factors affecting the length of time that individuals stay in their first job, and (ii) the effects of leaving the first job on later labor market outcomes. For the first analysis, the dependent variable we use is the number of days the individual stayed in the first job. Specifically, we limit our analysis of the length of time in the first job to the first five years (i.e., 1825 days). The reasons for setting this limit are two-fold. First, our main interest is in why young employees leave their first job *early*, that is, within a few years. The second reason is to retain individuals in younger cohorts in our sample. Since the maximum period of time that an individual can have worked in their first job at the time of the survey is shorter for younger individuals, our sample would gradually shrink for younger cohorts if we focused on longer periods of time.¹⁰ However, given that we are interested in comparing factors affecting the length of stay in the first job between younger and older cohorts, we want to have comparable sample sizes across different cohorts.

The dependent variable used for the second analysis is either the life-time average length of enrollment in the EPI or the life-time average number of job changes. The first measure is calculated as the total number of years enrolled in the EPI as of the survey date divided by the total number of years since the individual started his first job (hereafter called the “EPI ratio”). Since individuals enrolled in the EPI generally work as regular employees, we expect this measure to represent the stability of an individual’s employment status.¹¹ The second measure, i.e., the life-time average number of job changes, is calculated as the total number of job changes as of the survey date divided by the total number of years since the individual started

⁷ The reason for focusing on male respondents is that females often quit their job for child-bearing and rearing, so that the reasons for job separation differ from those for males. Examining the determinants and effects of early job separation for women therefore would require a different approach and is beyond the scope of the current study.

⁸ A “regular employee” is defined as an individual who answered that their employment status was either “company executive” or “regular employee” and the length of contract was “permanent.”

⁹ Since we are interested in job separation, we exclude from our sample 41 individuals who answered that they no longer work for the first employer because they were on loan as seconded staff to another company.

¹⁰ Consider, for instance, an individual who was 30 years old at the time of the survey. If this individual graduated from university and obtained his first job at the time of graduation (i.e., at about age 24), then the length of time he can have spent in his first job at the time of the survey is six years at most. If this individual was indeed in his first job at the time of the survey, we cannot observe whether and when he subsequently left this job. Therefore, this individual would have to be dropped from our sample if we were to focus on a period of more than six years.

¹¹ An employee must enroll in the EPI system if he/she is either a regular employee or a non-regular employee whose working hours per day or per month are 75 percent or more of those of regular employees and whose working days per month are 75 percent or more of those of regular employees.

his first job (hereafter called “frequency of job changes”). While a high frequency of job changes may not necessarily represent an unfavorable labor market outcome, we are interested in examining whether individuals who left their first job within the first five years tend to form a stable relationship with their employer(s) in the future or not.

The independent variables we use include variables that vary within the first five years after starting the first job (time-invariant variables) and those that do vary (time-variant variables). The time-invariant variables can be divided into three categories: a variable representing macroeconomic conditions at the time of searching for the first job; variables representing individuals’ characteristics at the time of starting the first job; and variables representing characteristics of the first job. To represent macroeconomic conditions at the time of the search for the first job, we use the active job opening ratio one year before the individual left school/university. We obtain this information from the survey on *Employment Referrals for General Workers* conducted by the Ministry of Health, Labour and Welfare.

The second category of variables includes a set of dummies representing the final educational attainment (high school, college, or university graduate), a proxy for communication skills constructed by applying principal component analysis to a set of six variables representing the relationship with peers in junior high school (a higher value represents better communication skills), a proxy for material support from parents in childhood constructed by applying principal component analysis to a set of 11 variables, including, for example, whether the individual “took after-school lessons,” “lived in an owner-occupied house,” or “had an air-conditioner” (a higher value represents greater material support), a proxy for psychological support from parents in childhood constructed by applying principal component analysis to a set of 14 variables indicating whether respondents felt that parents raised them “with a lot of affection,” “were indifferent,” or “used violence” (a higher value represents greater psychological support), a dummy variable indicating whether the individual lived separate from his parents at the time of starting the first job, and a set of dummies indicating the area of residence at the time of starting the first job (Greater Tokyo metropolitan area, Greater Nagoya metropolitan area, Greater Osaka metropolitan area, and other).^{12,13}

The third category of variables contains a dummy variable indicating whether the first job was at a firm with more than 1,000 employees, a dummy variable indicating whether the first job was in manufacturing industry, a dummy variable indicating whether the individual worked in a managerial or professional position in the first job, and, finally, the wage at the time of starting the first job.

Next, turning to the time-variant variables, these can be categorized into the same three groups. The first of these is the variable representing macroeconomic conditions, the active job opening ratio at time t . The second consists of variables representing individuals’ characteristics, including a dummy variable indicating whether the individual lived separate from his parents at time $t-1$, a dummy variable indicating whether the individual was married at time $t-1$, and a set of dummies indicating the area of residence at time $t-1$ (Greater

¹² The principal component analysis is conducted using STATA code “*pca*.” The results of the principal component analysis are available from the authors upon request. Each of the three variables constructed by principal component analysis is standardized so that its mean and standard deviation are zero and one, respectively.

¹³ Although we also have information on the marital status and the number of children at the time of starting the first job, we do not use this information, because there were too few individuals (0.02 percent) that were married or had children at this stage of life.

Tokyo metropolitan area, Greater Nagoya metropolitan area, Greater Osaka metropolitan area, and other). The third, finally, consists of the wage in year t of the first job.

We restrict our sample to individuals for whom information on all of the variables listed above is available, leaving us with a sample of 1,077 individuals. Summary statistics of the variables used in this study are presented in Table 2.

Table 2 about here

3. Descriptive analysis

3.1. Length of time in the first job

We begin by examining how the length of time individuals stayed in their first job varies across four different cohorts: individuals born between November 1961 and March 1966, those born between April 1966 and March 1971, those born between April 1971 and March 1976, and those born between April 1976 and March 1981. Figure 1 and Table 3 present the Nelson-Aalen estimates of the cumulative hazard of leaving the first job within five years.¹⁴ The estimates show that it is not unusual for individuals to leave their first job within the first five years. Overall, the percentage of those that had left their first job was about 10 percent by the end of the first year, 15 to 25 percent by the end of the third year, and 35 to 60 percent by the end of the fifth year. The cumulative hazard estimates also reveal that even though individuals in the younger cohorts, as seen in Table 1, are less likely to obtain regular employment immediately after graduation, they are considerably more likely to leave their first job early than those in the older cohorts. The younger cohorts are not only more likely to leave their first job earlier than the older cohorts, but they are also more likely to have a non-regular job, become unemployed, or withdraw from the labor market after quitting their first job (Table 4).

Figure 1 about here

Tables 3 and 4 about here

3.2. Factors affecting the length of time of staying in the first job

The *LOSEF* also asked respondents for the reason for leaving the first job if they did so, and about 90 to 95 percent of those who did so within the first five years replied “other (including own choice)” (Table 5). To further explore what causes individuals to leave their first job within the first few years and what factors explain the differences across cohorts in the likelihood of doing so, we begin by examining how the cumulative hazard of leaving the first job varies depending on macroeconomic conditions at the time of graduation, individuals’ characteristics, and characteristics of the first job.

¹⁴ The STATA code “*stgraph*” was used to obtain the Nelson-Aalen estimates of the cumulative hazard.

The results are presented in Figures 2 to 5 and can be summarized as follows. First, at least based on this simple descriptive analysis, it appears that the cumulative hazard of leaving the first job does not seem to be related to the active job opening ratio one year before graduation (Figure 2).

Figure 2 about here

Second, individuals with good communication skills were also less likely to leave their first job, although this was true only for individuals in the younger cohorts (Figure 3). Furthermore, among individuals in the younger cohorts, those whose first job was in manufacturing industry were less likely to leave their job within the first five years (Figure 4). Individuals whose first job was at a firm with more than 1,000 employees were also less likely to leave their job within the first five years (Figure 5). Finally, individuals who work as a manager or professional in their first job are less likely to leave their job within the first five years (Figure 6).

Figures 3 to 6 about here

3.3. Effects of leaving the first job early on later labor market outcomes

As a first step to investigate the effects of leaving the first job early on later labor market outcomes, we calculate the mean EPI ratio depending on the duration of the first job (Figure 7). The results suggest that the EPI ratio seems to be higher if individuals did not leave their first job within the first five years. However, as seen in Figure 7, it does not appear to matter whether an individual, for example, left the first job within the first year or between four and five years after commencing the job. On the other hand, calculating the mean value of the frequency of job changes depending on the duration of the first job shows that the life-time average number of job changes decreases monotonically with the length of time that an individual stayed in the first job (Figure 8). Thus, there is some evidence that whether or not an individual leaves the first job within the first five years is related with future labor market outcomes, although it is not clear whether it matters at what point within the five years the individual leaves the job.

Figures 7 and 8 about here

4. Empirical analysis

4.1. Estimation method

4.1.1. Factors affecting the length of time of staying in the first job

To investigate the determinants of why individuals leave their first job within the first few years, we conduct a duration analysis. There are two reasons for employing duration analysis rather than using a binary choice model (e.g., a linear probability, probit, or logit model). First, duration analysis allows us to exploit detailed information in the *LOSEF* on the length of time individuals stayed in their first job, while in binary

choice models we would only be able to use information on whether individuals left their first job within a certain arbitrary time period (e.g., within five years). Second, duration analysis can handle time-varying covariates relatively easily. In a simple binary choice model, we have to choose the values of time-varying covariates at some particular point in time to incorporate them in the model. Hence, employing duration analysis represents a superior approach for examining the kind of issue we address in this study.

The duration model we assume is expressed in the form of a proportional hazard function:

$$h(t|X) = h_0(t)\exp(X_{it}\beta) \quad (1)$$

where $h(t|X)$ is the hazard function at time t that represents the instantaneous probability of an individual leaving his first job given that he stayed in the job until time t . Given the length of time the individual stayed in the first job, T , the hazard function can be expressed as

$$h(t|X) = \lim_{\Delta t \rightarrow 0} \frac{P\{t \leq T < t + \Delta t | T \geq t, X\}}{\Delta t} \quad (2)$$

$X_{it} = (x_{1it}, \dots, x_{Kit})$ is a set of K covariates. The basic set of covariates we mainly use includes time-invariant variables representing macroeconomic conditions one year before graduation, X_1^M , and individual characteristics, X_1^I . We also estimate a model where X_{it} includes characteristics of the first job, X_1^{FJ} , in addition to X_1^M and X_1^I . To explore the effects on T of events that occurred after an individual started his first job, we further estimate a model with covariates representing macroeconomic conditions at time t and time-varying individual characteristics. $h_0(t)$ in Equation (1) is the baseline hazard function that represents the hazard of leaving the first job at time t when all the covariates are set to zero, i.e., $X_{it} = 0$.

The model represented by Equation (1) is estimated using the partial maximum likelihood method proposed by Cox (1972). This method is semi-parametric in the sense that we do not need to impose any parametric assumptions on $h_0(t)$. Since we focus on job separation within the first five years, individuals who did not leave their first job within this period are considered as censored in the partial maximum likelihood estimation.

To explore whether there are any differences across cohorts in the determinants of the duration of the first job, we estimate Equation (1) separately for the following two groups of individuals: individuals born between 1962 and 1971 (which we label the “older cohort”) and those born between 1972 and 1981 (the “younger cohort”).¹⁵ Using the estimation results, we can calculate and compare the survivor functions of the “representative” individual in each cohort using the following equation:

$$S^{c_h}(t|\bar{X}^{c_h}) = P^{c_h}(T > t|\bar{X}^{c_h}) = \exp\left\{-\int_0^t h_0^{c_h}(t)\exp(\bar{X}^{c_h}\hat{\beta}^{c_h})\right\} \quad (h=1, 2) \quad (3)$$

where c_1 represents the older cohort, c_2 the younger cohort, \bar{X}^{c_h} a set of covariates each of which take the mean value of the corresponding variable in cohort c_h , and $\hat{\beta}^{c_h}$ the estimated coefficients on $X_{it}^{c_h}$.¹⁶

¹⁵ While we divided our sample into four cohorts in the descriptive analysis, we combined them for the regression analysis in order to make sure that we have a sufficient number of observations for each regression.

¹⁶ With regard to dummy variables in \bar{X}^{c_h} , they take a value of one if the proportion of individuals taking a value of one is larger than that of those taking a value of zero in a cohort. For example, if the number of university graduates in a cohort is larger than the number of junior high school/high school graduates, then the “representative” individual in that cohort is assumed to be a university graduate.

4.1.2. Effects of leaving the first job early on later labor market outcomes

In order to explore whether leaving the first job within the first five years affects later labor market outcomes, we also estimate the following linear model using ordinary least square (OLS):

$$W_{it} = \gamma^0 + \sum_{j=1}^5 \gamma^j D_i^j + X_{it} + \varepsilon_{it} \quad (4)$$

where W_{it} represents either the EPI ratio (= total number of years enrolled in the EPI as of the survey date / total number of years since the individual started his first job) or the frequency of job changes (= total number of job changes as of the survey date / total number of years since the individual started his first job). X_{it} includes a basic set of covariates and the first job characteristics. D_i^j is a dummy variable taking a value of one if individual i left his first job between year j and $j+1$ (e.g., D_i^1 indicates that this individual left his first job between the first and the second year after starting the job). By examining the difference in the magnitudes of the coefficients γ^j ($j = 1, 2, \dots, 5$), we also explore whether the timing of leaving the first job matters for later labor market outcomes. The model is estimated separately for the younger and the older cohort.

4.2 Results

4.2.1. Factors affecting the length of time of staying in the first job

Table 6 presents the results of estimating Equation (1) separately for the younger and older cohorts using the basic set of covariates.^{17,18} The results are expressed in terms of hazard ratios. The hazard ratio of the k^{th} covariate x_{ik} represents

$$\frac{h(t|x_1, \dots, (x_k + 1), \dots, x_K)}{h(t|x_1, \dots, x_k, \dots, x_K)} = \frac{h_0(t) \exp(\beta_1 x_1 + \dots + \beta_k (x_k + 1) + \dots + \beta_K x_K)}{h_0(t) \exp(\beta_1 x_1 + \dots + \beta_k x_k + \dots + \beta_K x_K)} = \exp(\beta_k). \quad (5)$$

Given the interpretation of the hazard ratios, the results indicate that an increase in the active job opening ratio one year before graduation by one (e.g., from 0.5 to 1.5) decreases the hazard of leaving the first job by 55 percent ($= (1 - 0.448) \times 100$) and 48 percent ($= (1 - 0.552) \times 100$) for the younger and older cohort, respectively. Therefore, individuals who obtained their first job during an economic boom tended to remain in their job longer than those who obtained their first job during a recession. This finding is consistent with what has been argued by previous studies: people are more likely to accept a job of lower match quality during a recession because prospects for a good job offer are low, and as a result those who got their first job during a recession tend to leave the job more quickly.

For the younger cohort, an increase in the communication skills score and in the score for psychological support from parents at age 15 by one standard deviation decreases the hazard of leaving the first job by 16 percent ($= (1 - 0.839) \times 100$) and 14 percent ($= (1 - 0.858) \times 100$), respectively. Thus, better communication skills and/or skills developed through stronger psychological support from parents in childhood seem important determinants of whether individuals stay in their first job for the younger cohort. On the other hand, these two scores do not have a statistically significant relationship with the hazard of

¹⁷ We adopt separate models for the younger and older cohorts rather than applying a single model based on the result of a likelihood ratio test.

¹⁸ The STATA code “*stcox*” was used to obtain the Cox proportional hazard estimates.

leaving the first job for the older cohort. This result may indicate that, especially for the younger cohort, non-cognitive skills such as communication skills and/or skills developed through the psychological support of parents in childhood play an important role in forming a good relationship with colleagues at the workplace and developing specific skills for the job.

Table 6 about here

Based on the results obtained so far, we can say that the hazard of leaving the first job for the younger cohort has a statistically significant relationship with both individual characteristics and macroeconomic conditions one year before graduation. However, the relationship is stronger for macroeconomic conditions. Figure 9 depicts this result graphically. The solid line in the figure represents the estimated survivor function of the “representative” individual in the younger cohort. On the other hand, the dashed line represents the estimated survivor function of the “representative” individual in the younger cohort had he experienced the same macroeconomic conditions as the “representative” individual in the older cohort one year before graduation, holding all else equal. That is, the dashed line shows the estimated survivor function of the younger cohort (with coefficients $\hat{\beta}^{c_2}$) evaluated at the values of the covariates representing the individual characteristics of the “representative” individual in the younger cohort, \bar{X}^{Ic_2} , and the macroeconomic conditions experienced by the “representative” individual in the older cohort one year before graduation, \bar{X}^{Mc_1} , namely:

$$S^{c_2}(t|\bar{X}^{Ic_2}, \bar{X}^{Mc_1}) = \exp \left\{ - \int_0^t h_0^{c_2}(t) \exp \left(\bar{X}^{Ic_2} \hat{\beta}^{Ic_2} + \bar{X}^{Mc_1} \hat{\beta}^{Mc_2} \right) \right\} \quad (6)$$

As can be seen, the dashed line is located above the solid line at all points in time during the first five years in the first job. Hence, the survival rate of the “representative” individual in the younger cohort would have been higher if he had experienced the same macroeconomic conditions as the “representative” individual in the older cohort one year after graduation.

Further, the dotted line in Figure 9 represents the estimated survivor function of the “representative” individual in the younger cohort if he had the same individual characteristics as the “representative” individual in the older cohort, holding all else equal. That is, the dotted line shows the estimated survivor function of the younger cohort (i.e., with coefficients $\hat{\beta}^{c_2}$) evaluated at the values of the covariates representing the macroeconomic conditions experienced by the “representative” individual in the younger cohort, \bar{X}^{Mc_2} , and the individual characteristics of the “representative” individual in the older cohort, \bar{X}^{Ic_1} :

$$S^{c_2}(t|\bar{X}^{Ic_1}, \bar{X}^{Mc_2}) = \exp \left\{ - \int_0^t h_0^{c_2}(t) \exp \left(\bar{X}^{Ic_1} \hat{\beta}^{Ic_2} + \bar{X}^{Mc_2} \hat{\beta}^{Mc_2} \right) \right\} \quad (7)$$

While the dotted line lies above the solid line at almost every point in time during the first five years in the first job, the difference is much smaller than the difference between the solid and dashed lines. This result suggests that macroeconomic conditions at the time of the job search are a more important determinant of job separation within the first few years than differences in individual characteristics between the younger and the older cohort.

Figure 10 represents the estimated survivor function of the “representative” individual in the older cohort. Comparing the estimated survivor function in Figure 10 with the estimated survivor function of the “representative” individual in the younger cohort (i.e., the solid line in Figure 9) indicates that individuals in the younger cohort were more likely to leave the first job within the first five years than those in the older cohort. For example, while about 23 percent of the individuals in the younger cohort left their first job within the first three years (1,095 days), this was the case for only 12 percent of the individuals in the older cohort.

Figures 9 and 10 about here

While the results presented so far are based on the estimation of Equation (1) with the basic set of covariates, Table 7 shows the estimation results when the characteristics of the first job are added as covariates. The results indicate that the characteristics of the first job may play an important role in explaining the duration of the first job. That is, for both the younger and the older cohort, working for a large firm with more than 1,000 employees, working as a manager or a professional, and earning a higher wage significantly reduce the hazard of leaving the first job. For the younger cohort, working in manufacturing industry also decreases the hazard of separating from the first job. This result may partly be due to the increase in the number of jobs in the service sector, where relatively less investment is made to develop young employees’ skills.

Table 7 about here

To examine the role of events that occurred after an individual started his first job in explaining the duration of the first job, we further estimate a model with time-varying covariates, and the results of the estimation are presented in Table 8. The results show that, for the older cohort, macroeconomic conditions after starting the first job have a statistically significant relationship with the duration of the first job: good macroeconomic conditions at time t are associated with an increase in the hazard of leaving the first job at time t . This finding also is consistent with what has been pointed out by previous studies: people are more likely to leave their job during an economic boom because of the increased likelihood of being offered a good job. However, this result does not hold for the younger cohort. Further, for the younger cohort, being married at time t and the wage at time t are significantly related to the hazard of leaving the first job at time t . The estimated hazard ratios of the time-invariant covariates remain largely unchanged.

Table 8 about here

4.2.2. Effects of leaving the first job early on later labor market outcomes

Table 9 presents the coefficient estimates of Equation (4) for the younger and older cohorts where the EPI ratio (= total number of years enrolled in the EPI as of the survey date / total number of years since the individual started his first job) is used as the dependent variable. The results show that, for both the

younger and the older cohort, leaving the first job within the first five years is negatively and significantly related to the life-time average length of enrollment in the EPI. The absolute values of the coefficients on the dummy variables D^j ($j = 1, \dots, 5$) seem to generally decrease with the duration of the first job (i.e., the absolute value of the coefficient on $D^{j-1} \geq$ the absolute value of the coefficient on D^j) (Figure 11). However, the differences in the values of the coefficients are, in most cases, not statistically significant. Hence, there is no clear evidence that among individuals who left their first job within the first five years, the timing of leaving the first job matters with regard to the EPI ratio.

Table 9 about here

Figure 11 about here

Next, Table 10 presents the results of estimating Equation (4) when the life-time average number of job changes is used as the outcome. The values of the coefficients on the dummy variables D^j ($j = 1, \dots, 5$) seem to generally decrease with the duration of the first job (i.e., the absolute value of the coefficient on $D^{j-1} \geq$ the absolute value of the coefficient on D^j) (Figure 12). In particular, only job separation within a year (for the older cohort) or within two years (for the younger cohort) has a positive and significant relationship with the life-time average number of job changes. These findings suggest that leaving the first job, especially within a short time period of one or two years, may result in unstable employment in the future.

Table 10 about here

Figure 12 about here

5. Summary of the results

Using the panel data from the *LOSEF*, this study attempted to explore two issues: (i) what factors affect the length of time that individuals stay in the first job; and (ii) whether early separation from the first job affects later labor market outcomes. The main results can be summarized as follows. First, there are large differences across cohorts in the percentage of individuals leaving the first job within the first five years: the percentage is significantly higher for individuals in younger cohorts.

Second, in line with previous studies, we find that the duration of the first job is significantly related with macroeconomic conditions at the time of searching for the first job. We also find that for the younger cohort the duration of the first job is related with individuals' non-cognitive skills (e.g., communication skills): individuals with higher non-cognitive skills are less likely to leave their first job early. This result indicates that the set of factors affecting the length of time in the first work may vary over time. Third, individuals leaving their first job within the first few years are likely to be enrolled in the EPI for fewer years and more likely to change their job in the future. Furthermore, individuals who leave the first job very early –

within one or two years – tend to change their job more frequently than others.

Finally, there are several limitations to the present study that need to be acknowledged. One of the most important limitations is that we have not identified the causal relationship between the duration of the first job and later labor market outcomes. For example, if individuals who leave their first job within the first few years differ from those that do not in terms of unobservable characteristics that affect EPI enrollment and/or the frequency of job changes (such as individuals' patience), then the significant correlation between the duration of the first job and these measures of later labor market outcomes we found cannot be interpreted as causal. In addition, while we did not focus on women in this study, women's career paths are not independent of men's career paths, and exploring their interactions is of great importance. Addressing these issues is left for future work.

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Figure 1. Non-parametric cumulative hazard of leaving the first job, by cohort

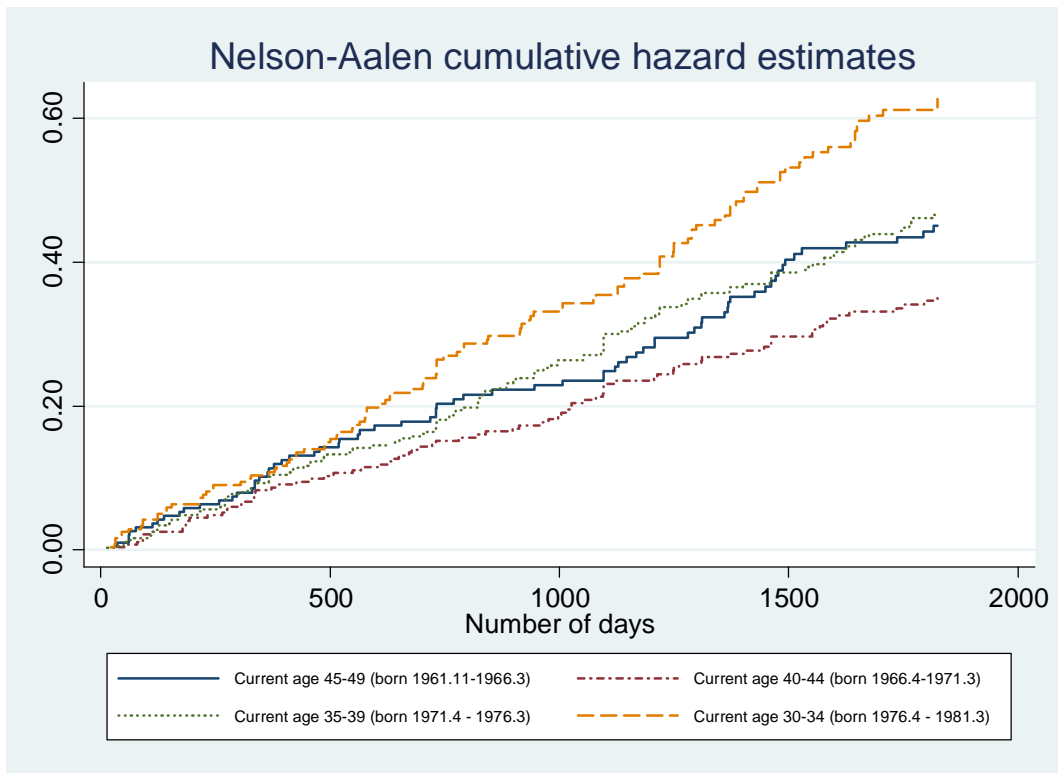
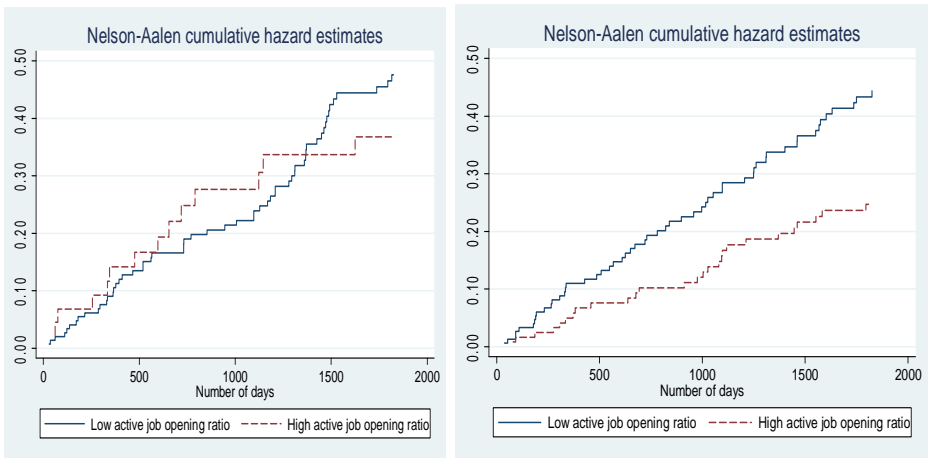
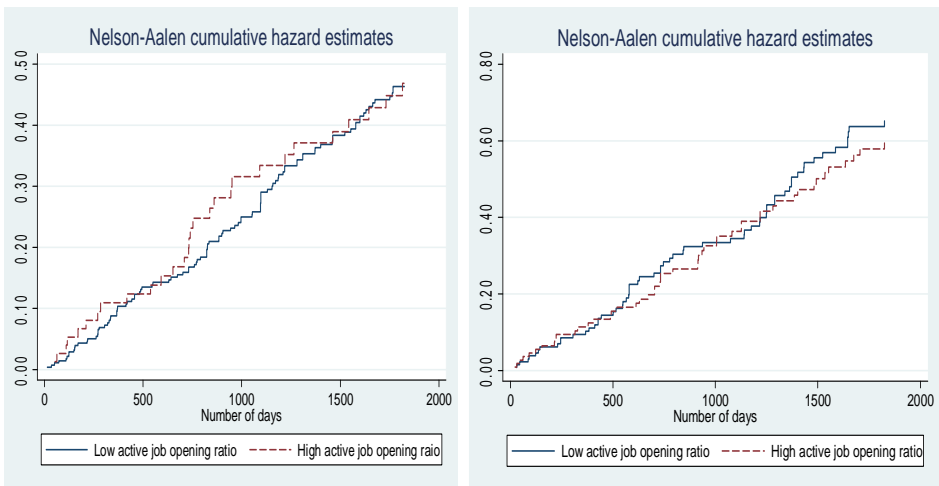


Figure 2. Non-parametric cumulative hazard of leaving the first job, by macroeconomic conditions at the time of graduation and cohort

(a) Age 45-49 (born 1961.11-1966.3) (b) Age 40-44 (born 1966.4-1971.3)



(c) Age 35-39 (born 1971.4-1976.3) (d) Age 30-34 (born 1976.4-1981.3)

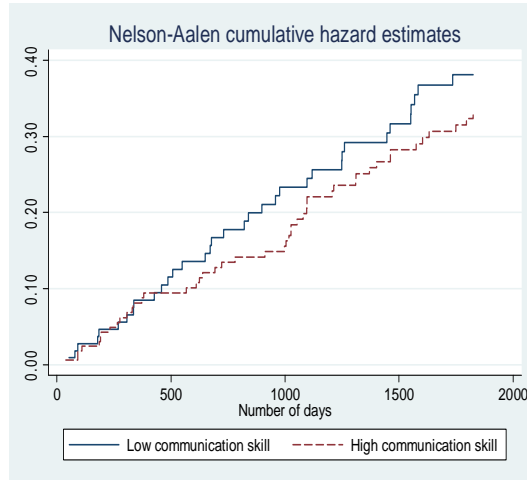
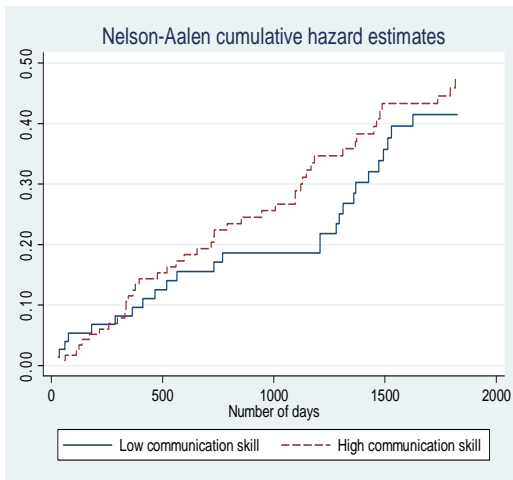


Note: The active job opening ratio experienced by an individual one year before graduation is defined as low if it is less than the cohort-specific average.

Figure 3. Non-parametric cumulative hazard of leaving the first job, by communication skills and cohort

(a) Age 45-49 (born 1961.11-1966.3)

(b) Age 40-44 (born 1966.4-1971.3)



(c) Age 35-39 (born 1971.4-1976.3)

(d) Age 30-34 (born 1976.4-1981.3)

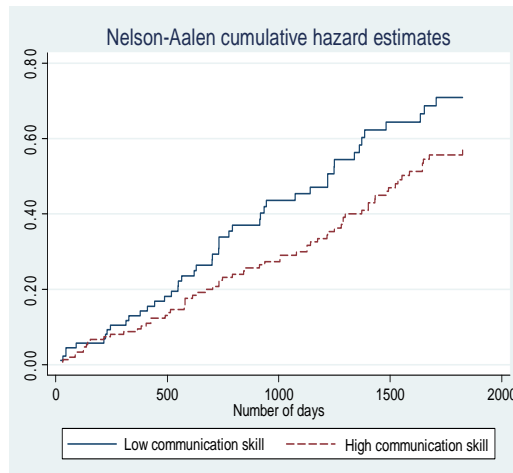
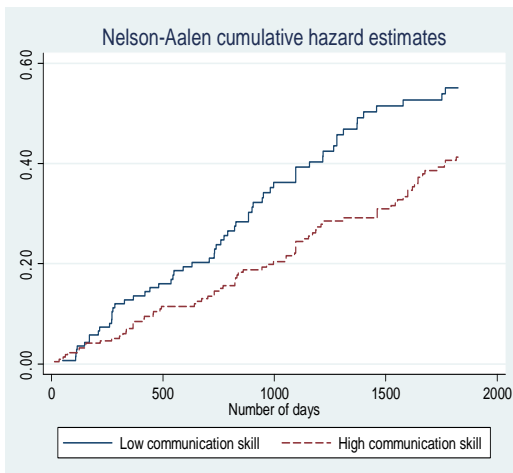
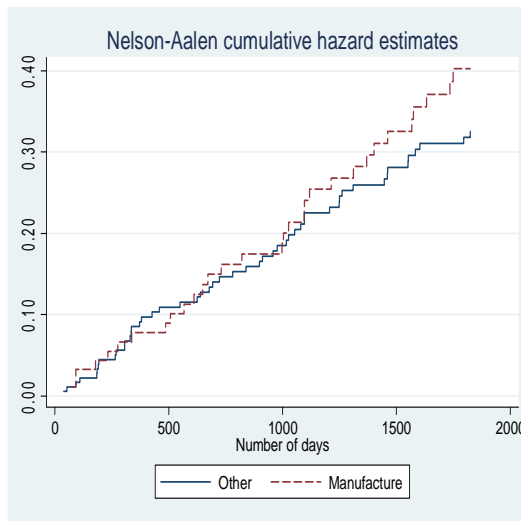
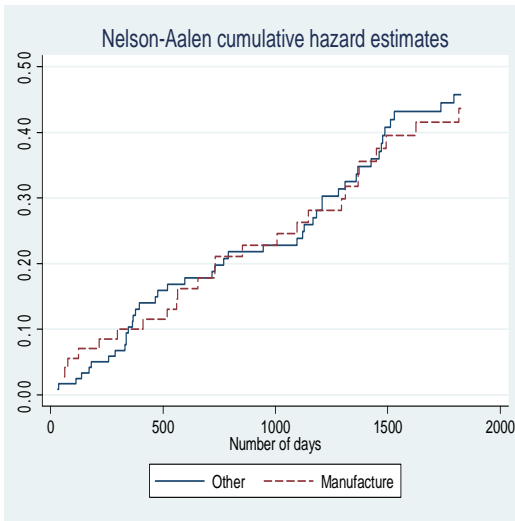


Figure 4. Non-parametric cumulative hazard of leaving the first job, by industry of the first job (manufacturing versus other) and cohort

(a) Age 45-49 (1961.11-1966.3)

(b) Age 40-44 (born 1966.4-1971.3)



(c) Age 35-39 (born 1971.4-1976.3)

(d) Age 30-34 (born 1976.4-1981.3)

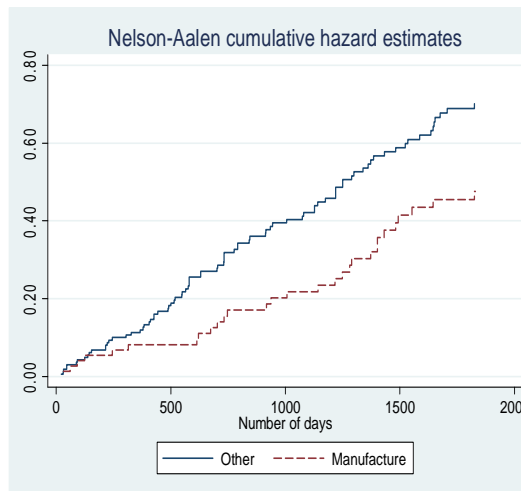
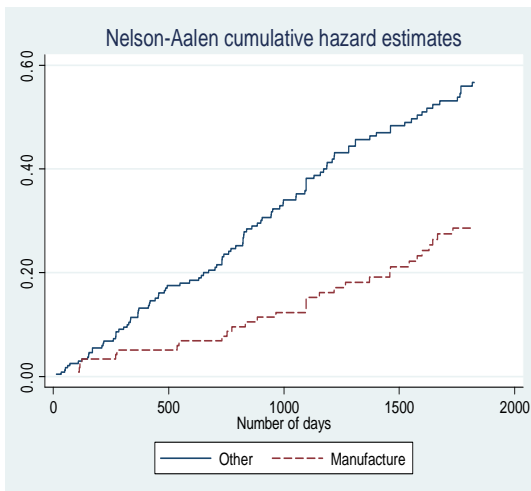
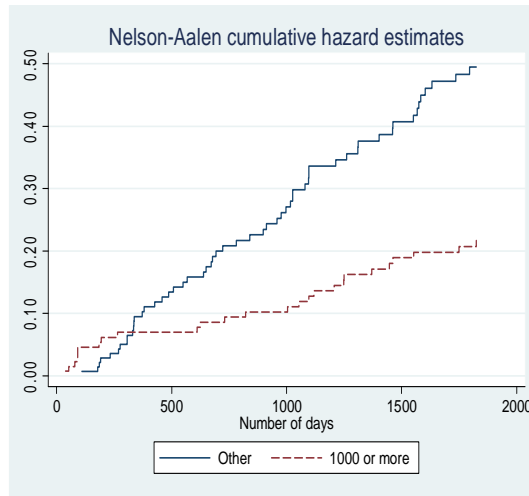
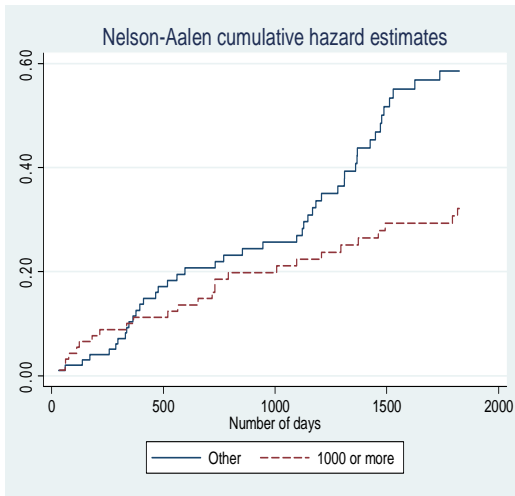


Figure 5. Non-parametric cumulative hazard of leaving the first job, by the number of employees at the first workplace (Other versus 1,000 or more) and cohort

(a) Age 45-49 (born 1961.11-1966.3)

(b) Age 40-44 (born 1966.4-1971.3)



(c) Age 35-39 (born 1971.4-1976.3)

(d) Age 30-34 (born 1976.4-1981.3)

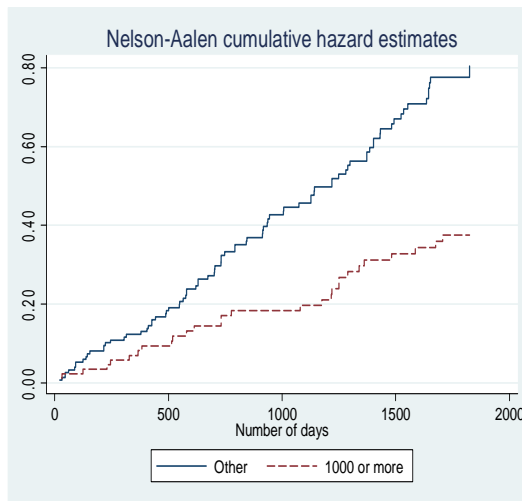
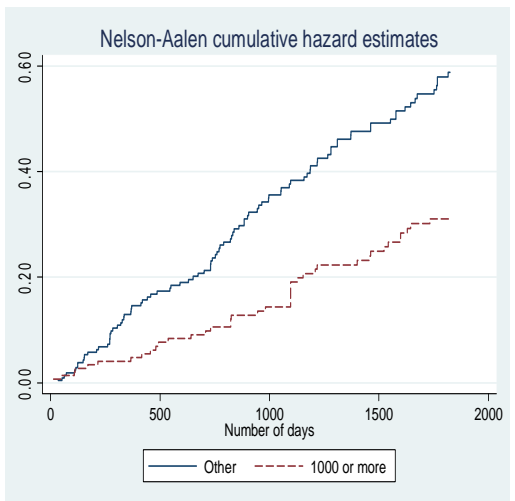
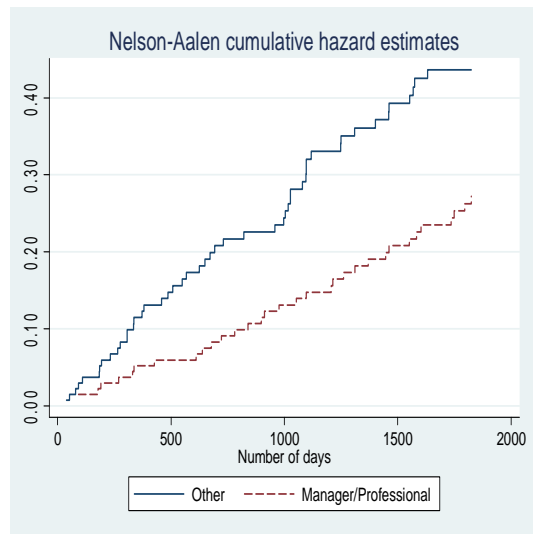
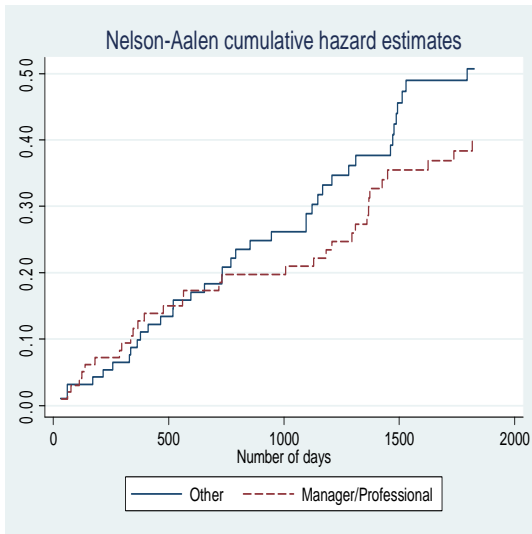


Figure 6. Non-parametric cumulative hazard of leaving the first job, by occupation in the first job (manager/professional versus other) and cohort

(a) Age 45-49 (born 1961.11-1966.3)

(b) Age 40-44 (born 1966.4-1971.3)



(c) Age 35-39 (born 1971.4-1976.3)

(d) Age 30-34 (born 1976.4 -1981.3)

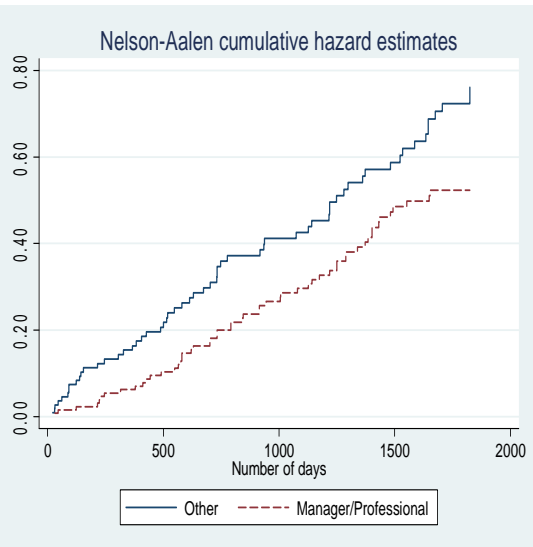
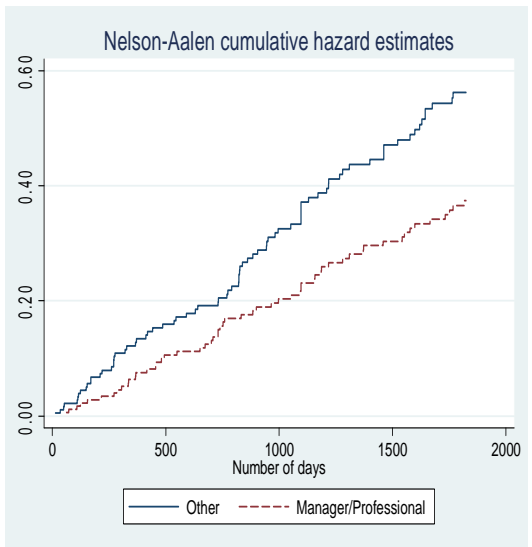


Figure 7. Future EPI coverage by duration in the first job

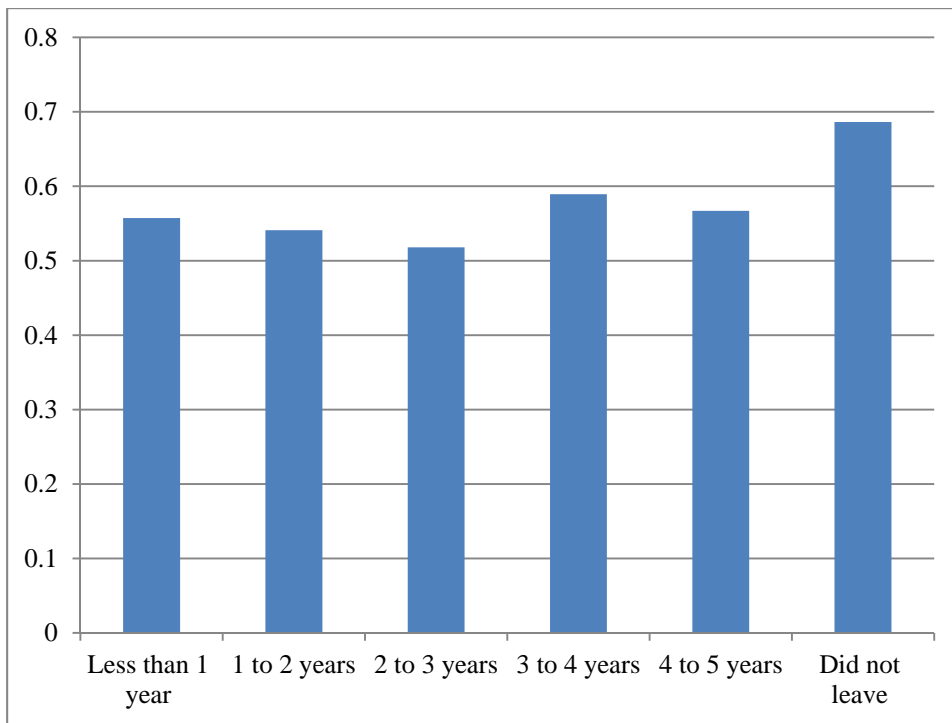


Figure 8. Future frequency of job changes by duration in the first job

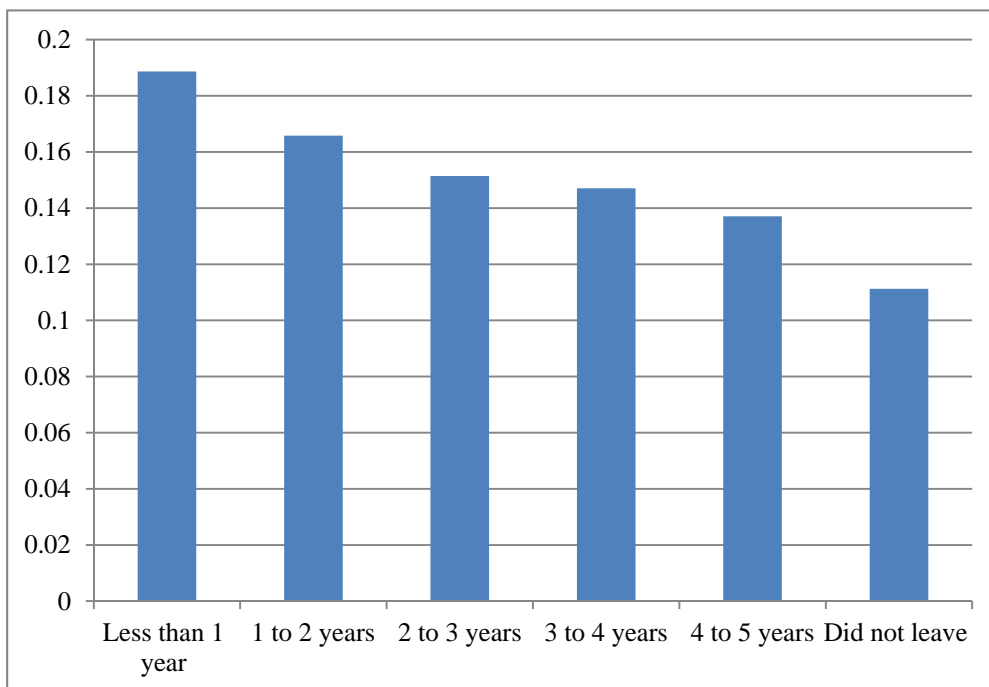


Figure 9. Survivor functions based on the model for the younger cohort (Basic set of covariates)

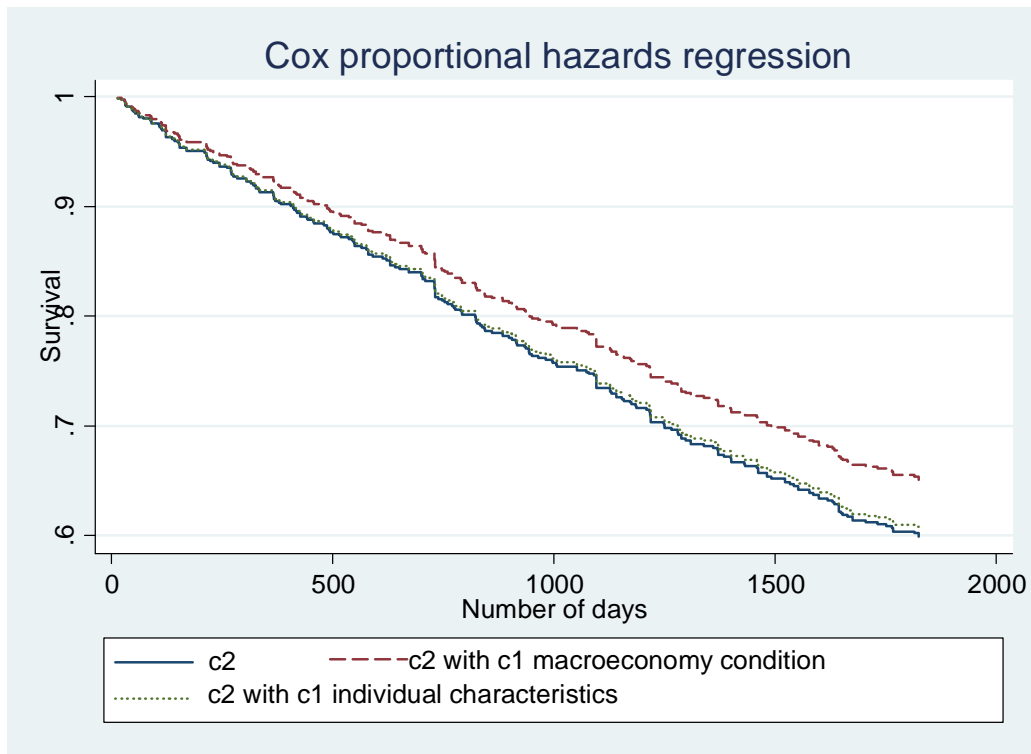


Figure 10. Survivor function based on the model for the older cohort (Basic set of covariates)

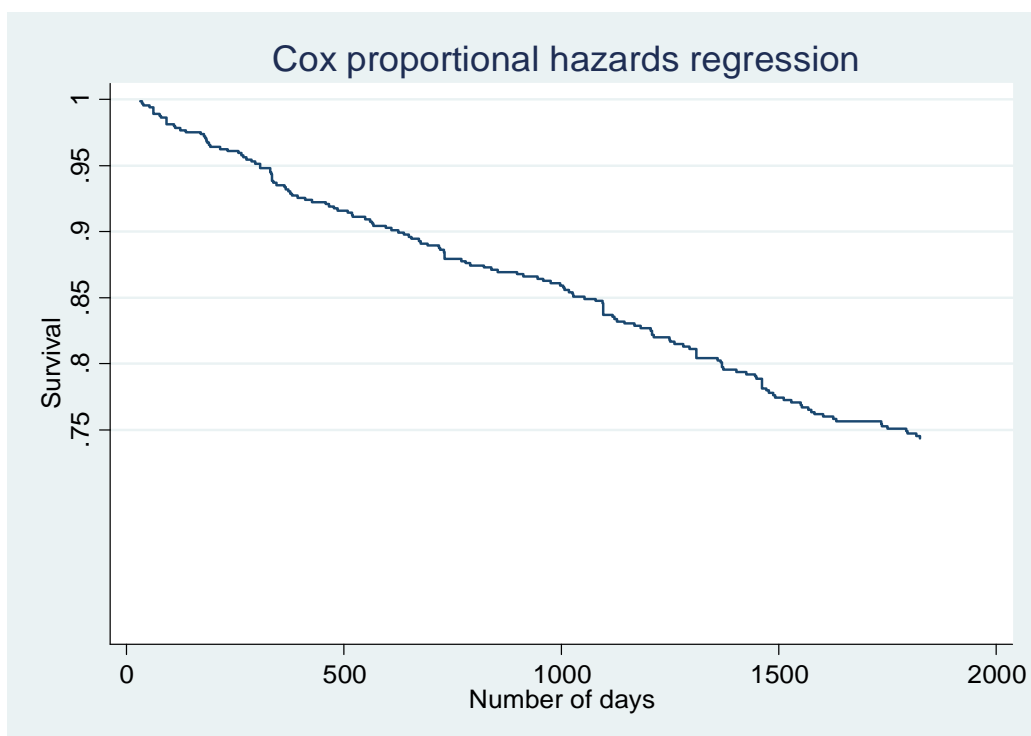
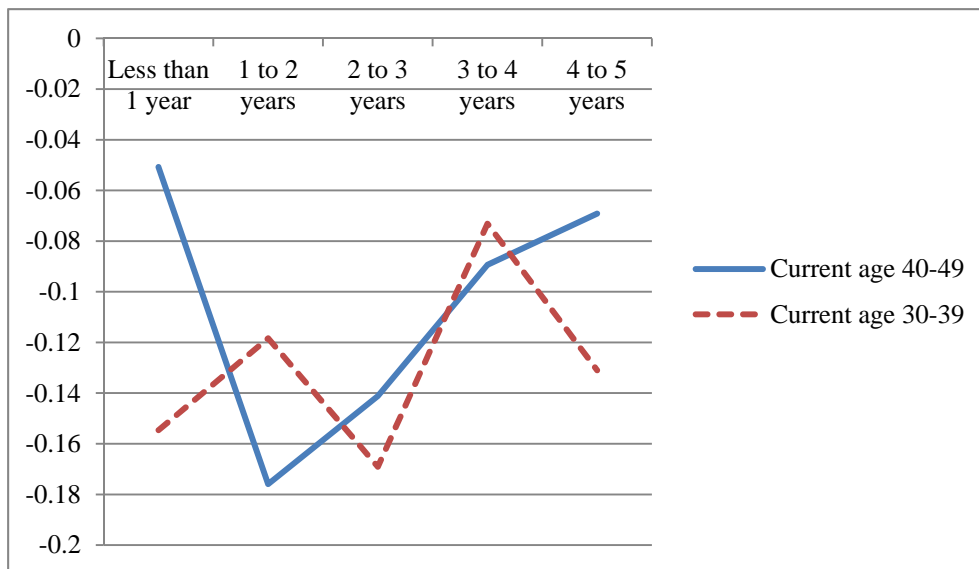
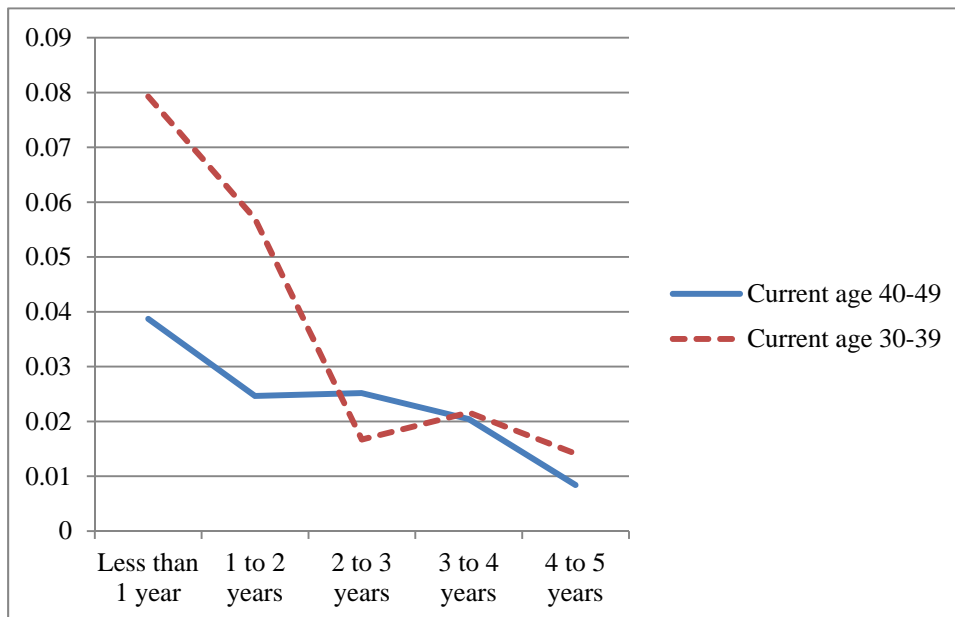


Figure 11. Coefficients on the duration in the first job (Outcome: EPI ratio)



Note: The horizontal axis shows the number of years within which the individual separated from the first job, while the vertical axis represents the reduction in the number of years (per year) the individual was enrolled in the EPI system given the number of years he stayed in the first job.

Figure 12. Coefficients on the duration in the first job (Outcome: frequency of job changes)



Note: The horizontal axis shows the number of years within which the individual separated from the first job, while the vertical axis represents the increase in the number of job changes per year given the number of years he stayed in the first job.

Table 1. Proportion of male regular employees who began working just after school/university graduation

Age in April 2011 (Birth year and month)	Age 45-49 (born 1961.11- 1966.3)	Age 40-44 (born 1966.4- 1971.3)	Age 35-39 (born 1971.4- 1976.3)	Age 30-34 (born 1976.4- 1981.10)	Total
No. of males in the 2011 <i>LOSEF</i>	427	516	593	458	1,994
Regular employees:					
No. of persons	325	376	421	281	1,403
Row %	23.2	26.8	30.0	20.0	100.0
Column %	76.1	72.9	71.0	61.4	70.4

Notes: The 2011 *LOSEF* does not include the date of graduation. The graduation date is estimated using the birth year and the educational attainment of each respondent. Whether an individual entered the labor market right after graduating from school/university is judged by comparing the estimated graduation date and the date of starting the first job as reported in the 2011 *LOSEF*.”

Table 2. Summary statistics

	Mean	Standard deviation
<i>Macroeconomic conditions</i>		
Active job opening ratio one year before graduation	0.804	0.285
<i>Individual characteristics</i>		
Education:		
High school	0.178	0.383
College	0.135	0.341
Four-year university	0.686	0.464
Communication skills		
	0	1
Family environment at age 15: Material		
	0	1
Family environment at age 15: Psychological		
	0	1
Living separate from parents as of the year of starting the first job		
	0.376	0.485
Area of residence as of the year of starting the first job:		
Greater Tokyo metropolitan area	0.337	0.473
Greater Nagoya metropolitan area	0.082	0.274
Greater Osaka metropolitan area	0.166	0.372
Other	0.415	0.493
<i>First job characteristics</i>		
Firm size:		
1,000 or more	0.432	0.496
Industry:		
Manufacturing	0.336	0.473
Job:		
Manager or professional	0.510	0.500
Wage first year, first job (thousand yen/month)	203.735	56.234

Table 2. Summary statistics (cont.)

	Mean	Standard deviation
<i>Macroeconomic conditions</i>		
Active job opening ratio after starting the first job (number of years since job start):		
0	0.777	0.276
1	0.775	0.273
2	0.777	0.264
3	0.777	0.265
4	0.781	0.266
<i>Individual characteristics</i>		
Living separate from parents after starting the first job (number of years since job start):		
0	0.376	0.485
1	0.490	0.500
2	0.504	0.500
3	0.518	0.500
4	0.539	0.499
Married in the years after starting the first job (number of years since job start):		
0	0.003	0.053
1	0.006	0.080
2	0.019	0.135
3	0.052	0.222
4	0.098	0.298
Area of residence after starting the first job (number of years since job start):		
Greater Tokyo metropolitan area		
0	0.337	0.473
1	0.339	0.474
2	0.337	0.473
3	0.329	0.470
4	0.327	0.469
Greater Nagoya metropolitan area		
0	0.082	0.274
1	0.084	0.277
2	0.088	0.284
3	0.086	0.281
4	0.083	0.275
Greater Osaka metropolitan area		
0	0.166	0.372
1	0.159	0.366
2	0.153	0.360
3	0.146	0.353
4	0.149	0.356
Other		
0	0.415	0.493
1	0.419	0.494
2	0.422	0.494
3	0.439	0.497
4	0.442	0.497
<i>First job characteristics</i>		
Wage after starting the first job (thousand yen/month) (number of years since job start):		
0	203.735	56.234
1	216.242	58.294
2	243.066	64.787
3	254.631	68.134
4	265.255	72.707

Table 3. Non-parametric cumulative hazard of leaving the first job, by cohort

Cumulative hazard by:	Age 45-49 (born 1961.11- 1966.3)	Age 40-44 (born 1966.4- 1971.3)	Age 35-39 (born 1971.4- 1976.3)	Age 30-34 (born 1976.4- 1981.10)
365 days (= 1 year)	0.108	0.083	0.092	0.103
730 days (= 2 years)	0.185	0.148	0.165	0.239
1095 days (= 3 years)	0.235	0.213	0.274	0.354
1460 days (= 4 years)	0.366	0.282	0.373	0.512
1825 days (= 5 years)	0.451	0.347	0.466	0.612

Notes: The table shows the results for the Nelson-Aalen estimator of the cumulative hazard.

Table 4. Separation rate by cohort

	Age 45-49 (born 1961.11- 1966.3)	Age 40-44 (born 1966.4- 1971.3)	Age 35-39 (born 1971.4- 1976.3)	Age 30-34 (born 1976.4- 1981.10)
1 year				
Separate	0.103	0.086	0.097	0.100
Separate, withdrawn	0.000	0.003	0.000	0.008
Separate, unemployed	0.005	0.003	0.016	0.004
Separate, non-regular worker	0.010	0.010	0.024	0.036
Separate, regular worker	0.088	0.069	0.057	0.052
Did not separate	0.897	0.914	0.903	0.900
3 years				
Separate	0.211	0.210	0.251	0.308
Separate, withdrawn	0.005	0.010	0.003	0.020
Separate, unemployed	0.010	0.014	0.035	0.048
Separate, non-regular worker	0.010	0.031	0.051	0.092
Separate, regular worker	0.186	0.155	0.162	0.148
Did not separate	0.789	0.790	0.749	0.692
5 years				
Separate	0.353	0.297	0.354	0.432
Separate, withdrawn	0.005	0.014	0.011	0.028
Separate, unemployed	0.020	0.024	0.051	0.072
Separate, non-regular worker	0.010	0.045	0.062	0.100
Separate, regular worker	0.319	0.214	0.230	0.232
Did not separate	0.647	0.703	0.646	0.568

Table 5. Reason for leaving the first job within the first five years

	All	Age 45-49 (born 1961.11- 1966.3)	Age 40-44 (born 1966.4- 1971.3)	Age 35-39 (born 1971.4- 1976.3)	Age 30-34 (born 1976.4- 1981.10)
Bankruptcy, layoff, voluntary redundancy	0.039	0.029	0.049	0.031	0.050
Ordinary dismissal	0.010	0.000	0.025	0.000	0.020
Expiry of contract period	0.003	0.000	0.000	0.008	0.000
Marriage, child-birth, child- rearing	0.005	0.000	0.000	0.000	0.020
Caregiving for elderly parents	0.010	0.000	0.025	0.000	0.020
Other (including own preference)	0.932	0.971	0.901	0.962	0.891

Table 6. Cox proportional hazard estimates: Hazard ratio (Basic set of covariates)

	Younger cohort	Older cohort
Active job opening ratio one year before graduation	0.448*	0.522*
	(0.167)	(0.164)
<i>Individual characteristics</i>		
Education (Base category: High school)		
College	1.2	0.988
	(0.279)	(0.250)
Four-year university	0.696	0.58
	(0.157)	(0.128)
Communication skills	0.839**	1.006
	(0.054)	(0.086)
Family environment at age 15: Material	1.055	1.066
	(0.075)	(0.094)
Family environment at age 15: Psychological	0.858*	0.907
	(0.056)	(0.075)
Living separate from parents as of the year of starting the first job	0.959	0.81
	(0.132)	(0.157)
Area of residence as of the year of starting the first job (Base category: Other)		
Greater Tokyo metropolitan area	0.834	1.202
	(0.129)	(0.230)
Greater Nagoya metropolitan area	0.879	1.122
	(0.212)	(0.352)
Greater Osaka metropolitan area	0.83	1.21
	(0.155)	(0.290)
Number of obs.	606	471
Log likelihood	-1521.662	-899.252

Notes: Standard errors in parentheses. ⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

Table 7. Cox proportional hazard estimates: Hazard ratio (Basic set of covariates + first job characteristics)

	Younger cohort	Older cohort
Active job opening ratio one year before graduation	0.507+	0.590+
	(0.190)	(0.188)
<i>Individual characteristics</i>		
Education (Base category: High school)		
College	1.1	1.18
	(0.259)	(0.313)
Four-year university	0.998	0.757
	(0.232)	(0.180)
Communication skills	0.843**	0.994
	(0.055)	(0.086)
Family environment at age 15: Material	1.01	1.094
	(0.072)	(0.096)
Family environment at age 15: Psychological	0.844**	0.907
	(0.055)	(0.077)
Living separate from parents as of the year of starting the first job	1.016	0.844
	(0.141)	(0.165)
Area of residence as of the year of starting the first job (Base category: Other)		
Greater Tokyo metropolitan area	0.959	1.366
	(0.151)	(0.265)
Greater Nagoya metropolitan area	1.017	1.294
	(0.245)	(0.408)
Greater Osaka metropolitan area	0.86	1.272
	(0.162)	(0.307)
<i>First job characteristics</i>		
Firm size (Base category: Less than 1,000)		
1,000 or more	0.582**	0.519**
	(0.088)	(0.091)
Industry (Base category: Other)		
Manufacturing	0.619**	1.229
	(0.095)	(0.210)
Job (Base category: Other)		
Manager or professional	0.744*	0.648*
	(0.098)	(0.111)
Wage first year, first job	0.993**	0.996+
	(0.002)	(0.002)
Number of obs.	606	471
Log likelihood	-1492.226	-886.844

Notes: Standard errors in parentheses, ⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

Table 8. Cox proportional hazard estimates: Hazard ratio (Basic set of covariates + first job characteristics + time-varying characteristics)

	Younger cohort	Older cohort
Active job opening ratio one year before graduation	0.407* (0.161)	0.544+ (0.180)
Active job opening ratio at time t	1.349 (0.541)	1.869* (0.516)
<i>Individual characteristics</i>		
Education (Base category: High school)		
College	0.938 (0.227)	0.996 (0.274)
Four-year university	0.71 (0.158)	0.669+ (0.149)
Communication skills	0.887+ (0.059)	0.964 (0.086)
Family environment at age 15:		
Material	0.974 (0.072)	1.114 (0.102)
Psychological	0.859* (0.059)	0.878 (0.075)
Living separate from parents at time $t-1$	0.99 (0.140)	0.777 (0.143)
Married at time $t-1$	0.451+ (0.210)	0.306 (0.310)
Area of residence at time t (Base category: Other)		
Greater Tokyo metropolitan area	0.63 (0.217)	1.567 (0.512)
Greater Nagoya metropolitan area	0.9 (0.144)	1.037 (0.216)
Greater Osaka metropolitan area	0.83 (0.191)	1.15 (0.328)
<i>First job characteristics</i>		
Firm size (Base category: Less than 1,000)		
1,000 or more	0.544** (0.085)	0.517** (0.096)
Industry (Base category: Other)		
Manufacturing	0.595** (0.095)	1.256 (0.222)
Job (Base category: Other)		
Manager or professional	0.684** (0.093)	0.684* (0.122)
Wage in year t , first job	1.011** (0.002)	0.999 (0.003)
Number of obs.	606	471
Log likelihood	-1391.578	-821.384

Notes: Standard errors in parentheses, ⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

Table 9. The relationship between the duration of the first job and the EPI ratio

	Younger cohort	Older cohort
Less than 1 year	-0.155** (0.031)	-0.051 (0.032)
1 to 2 years	-0.118** (0.031)	-0.176** (0.038)
2 to 3 years	-0.169** (0.032)	-0.141** (0.042)
3 to 4 years	-0.073* (0.031)	-0.089* (0.035)
4 to 5 years	-0.131** (0.035)	-0.069+ (0.041)
Active job opening ratio one year before graduation	0.061 (0.048)	-0.083* (0.032)
<i>Individual characteristics</i>		
Education (Base category: High school)		
College	-0.031 (0.034)	-0.037 (0.033)
Four-year university	-0.059+ (0.032)	-0.016 (0.027)
Communication skills	0.003 (0.009)	0.001 (0.009)
Family environment at age 15: Material	-0.016+ (0.009)	0.004 (0.009)
Family environment at age 15: Psychological	0.005 (0.009)	0.01 (0.009)
Living separate from parents as of the year of starting the first job	0.017 (0.018)	-0.023 (0.020)
Area of residence as of the year of starting the first job (Base category: Other)		
Greater Tokeo metropolitan area	-0.015 (0.021)	0.001 (0.021)
Greater Nagoya metropolitan area	-0.053+ (0.032)	0.046 (0.035)
Greater Osaka metropolitan area	-0.06* (0.025)	0.036 (0.026)
<i>First job characteristics</i>		
Firm size (Base category: Less than 1,000)		
1,000 or more	0.027 (0.018)	0.032+ (0.019)
Industry (Base category: Other)		
Manufacturing	-0.015 (0.019)	0.025 (0.019)
Job (Base category: Other)		
Manager or professional	0.005 (0.017)	0.004 (0.018)
Wage first year, first job	-0.000004 (0.000)	0.0003+ (0.000)
Number of obs.	471	606

Notes: Standard errors in parentheses. ⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

Table 10. The relationship between the duration of the first job and the frequency of job changes

	Younger cohort	Older cohort
Less than 1 year	0.079** (0.014)	0.039** (0.013)
1 to 2 years	0.057** (0.014)	0.025 (0.015)
2 to 3 years	0.017 (0.014)	0.025 (0.017)
3 to 4 years	0.022 (0.014)	0.02 (0.014)
4 to 5 years	0.014 (0.016)	0.008 (0.017)
Active job opening ratio one year before graduation	-0.035 (0.022)	-0.003 (0.013)
<i>Individual characteristics</i>		
Education (Base category: High school)		
College	-0.011 (0.015)	0.009 (0.013)
Four-year university	0.001 (0.015)	0.008 (0.011)
Communication skills	-0.002 (0.004)	0.001 (0.004)
Family environment at age 15: Material	-0.004 (0.004)	0.002 (0.004)
Family environment at age 15: Psychological	0.002 (0.004)	-0.007+ (0.004)
Living separate from parents as of the year of starting the first job	0.007 (0.008)	0.009 (0.008)
Area of residence as of the year of starting the first job (Base category: Other)		
Greater Tokyo metropolitan area	-0.007 (0.009)	0.003 (0.009)
Greater Nagoya metropolitan area	-0.012 (0.014)	-0.02 (0.014)
Greater Osaka metropolitan area	0.005 (0.011)	-0.005 (0.011)
<i>First job characteristics</i>		
Firm size (Base category: Less than 1,000)		
1,000 or more	-0.017* (0.008)	-0.012 (0.007)
Industry (Base category: Other)		
Manufacturing	-0.002 (0.008)	-0.012 (0.008)
Job (Base category: Other)		
Manager or professional	0.006 (0.008)	0.002 (0.007)
Wage first year, first job	-0.0001 (0.000)	-0.00007 (0.000)
Number of obs.	471	606

Notes: Standard errors in parentheses. ⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.