

初職正規男性の早期転職をめぐる一考察
Early Job-Turnover of Male Employees
from a 'Good' Start in Recent Japan

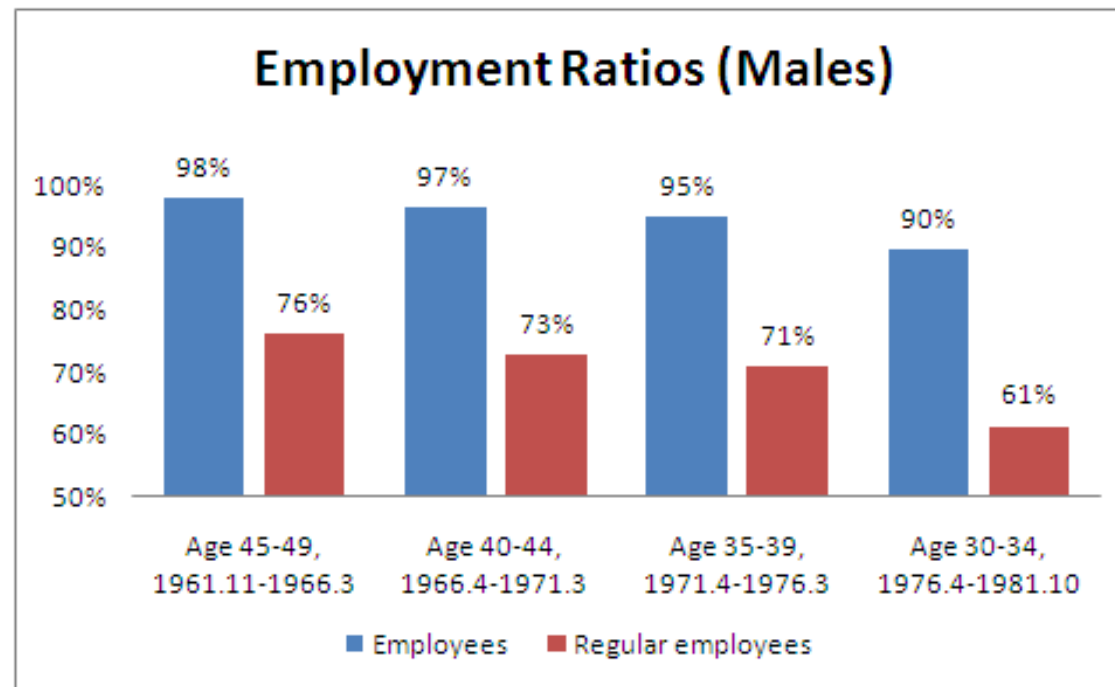
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March 1st, 2013

Motivation (1)

- Obtaining **the regular employment** status in the first job seems to have become more and more difficult for younger generations.



Source: LOSEF

Motivation (2)

- The early turnover problem still remains today. MHLW (2012) presents the similar situation as at the year of 2009.

Early Turnover Ratio (within 3 years)

	Graduates in 1999	Graduates in 2009
Junior high school	68.5%	64.2%
Senior high school	48.2%	35.7%
College and University	34.3%	28.8%

Source: MHLW (2012)

Former Studies (1)

- Kurosawa and Genda (2001) : The “70%-50%-30% Phenomena” in Japan. In 1990s, nearly 70% of the new junior high school graduates left their first regular jobs within 3 years. Around 50% for the senior high school ones, and approximately 30% for the college/university ones, respectively.
 - > The Early Turnover Problem : Lack of their patience was not a major reason. The economic recession and the inadequate job guidance at the school/university mattered more.

Former Studies (2)

- Konno (2012) shed a new light on the “Black Companies,” which are companies forcing too fierce and cruel working conditions to their new and young employees.
- Kondo (2007) shows that the employment status at the initial job has a persistent effect on the future career path.

Objectives(1)

Investigate

- why and how the current younger generations tend to leave their initial jobs early.
- whether there have been changes in the determinants of early job turnover (Individual versus Macro economy?).
- how early job turnover affects future outcomes.

Objectives(2)

Difference with previous studies

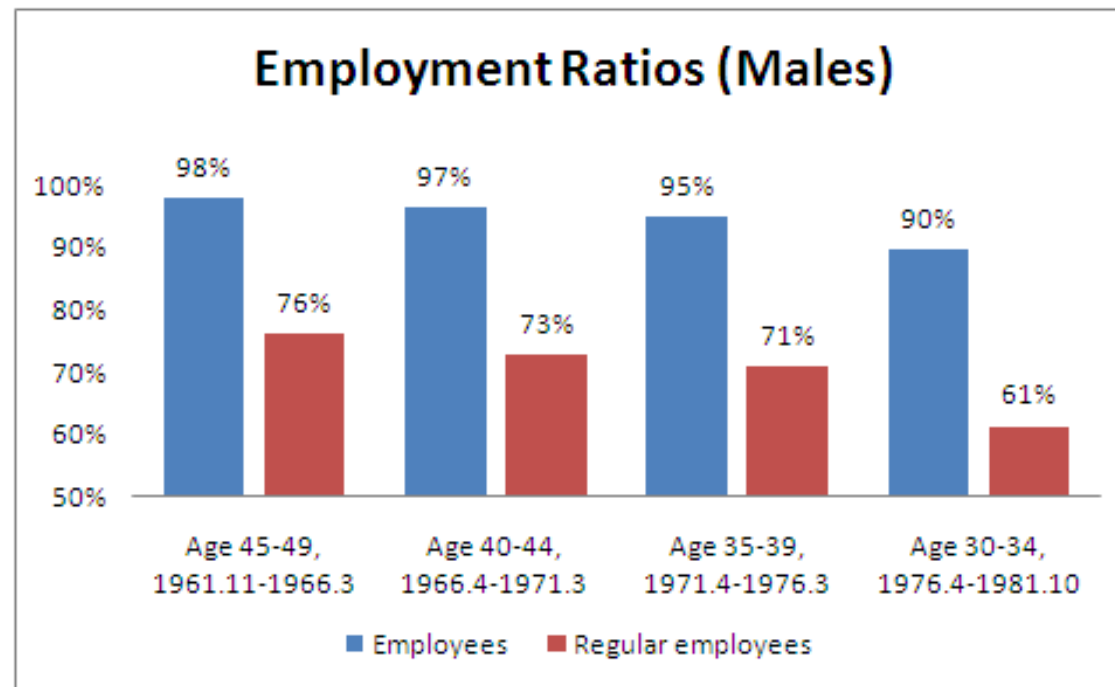
- Use more recent data.
- Use more detailed information (in the unit of days) on when an individual left his first job (if he did).
- Investigate whether the difference in the early job turnover rate across cohorts is due to the difference in the individual characteristics, the difference in macro economic conditions, or to the changes in the effects these factors have on the tendency to leave the first job.

Data: The 2011 LOSEF

- The 2011 LOSEF longitudinal panel data has the working history for each person.
- **Male employees of age 30-49** as at April 2011, are focused in this study. Among them, the males who started their career as **regular employees just after school graduation** are our concern. A sample of 1,403 male observations are used.

Fact (1) – Job Entrance

- Obtaining **the regular employment** status in the first job seems to have become more and more difficult for younger generations.

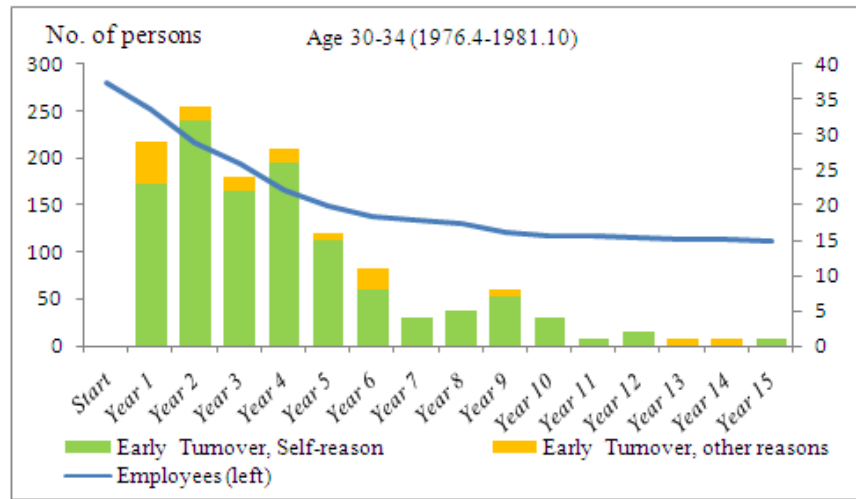
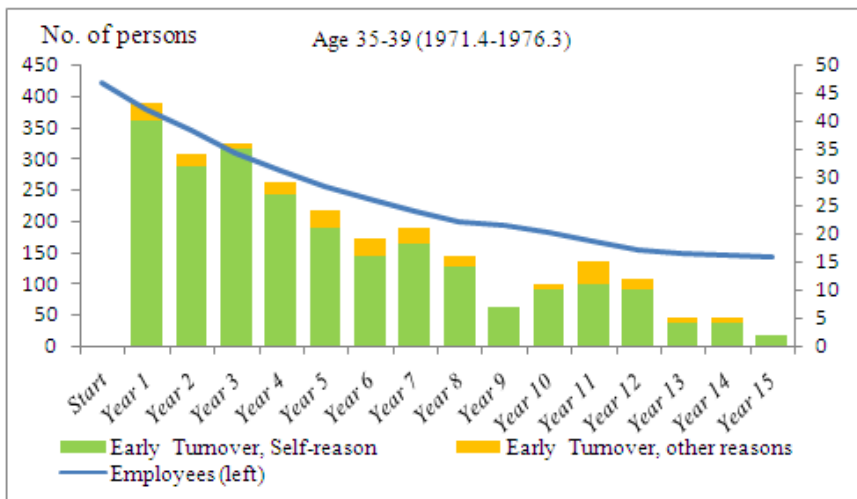
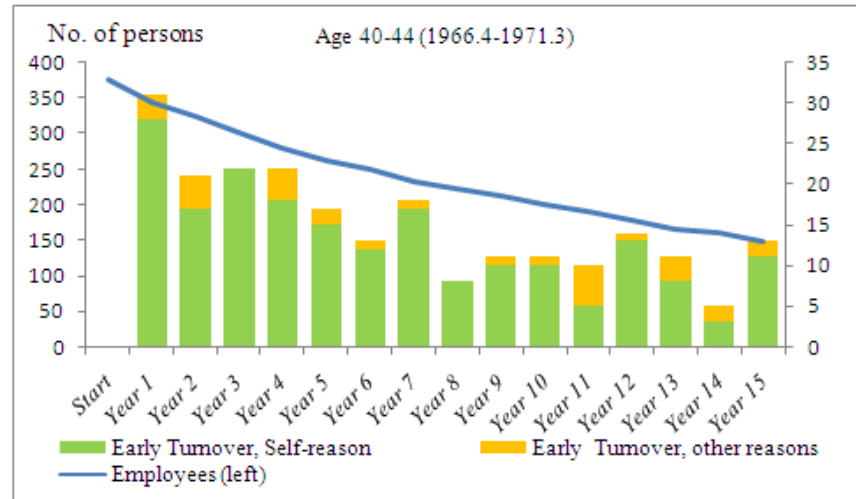
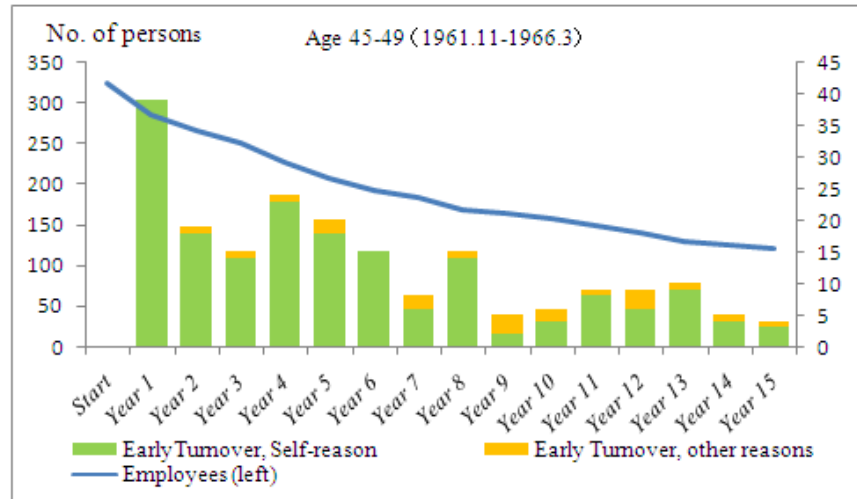


Source: LOSEF

Fact (2) – Early Turnover

- For each cohort, the number of remaining male employees in their first job decreased gradually year by year from their entrance (the next slide).
 - **The 3-years criteria really relevant?** : It is true that the number of early turnover during the first three years was large. But, there exist little drastic changes around the 3rd year.

Early Turnover from the First Job



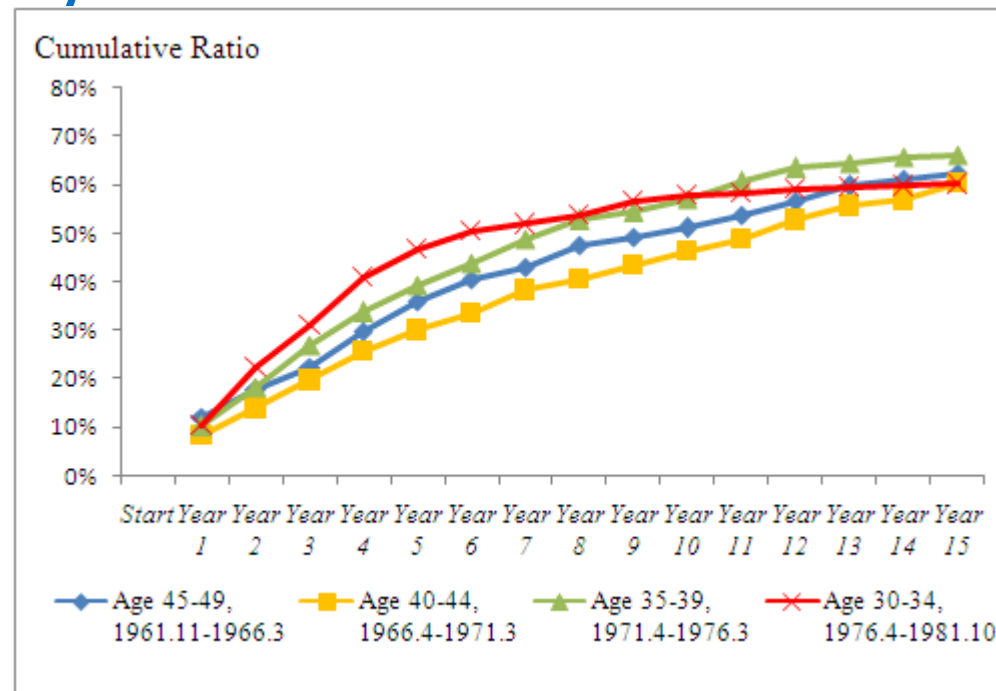
Note: Blue lines indicate the number of those remaining in their first employments, while green and orange bars present the number of each year's job-quits from their first employers.

Source: LOSEF

Fact (3) – Cumulative Ratio

- Within the first 6-12 years, 50% of male employees left their first jobs. Those males of age 30-34 quitted their first jobs earlier.

Early Turnover from the First Job

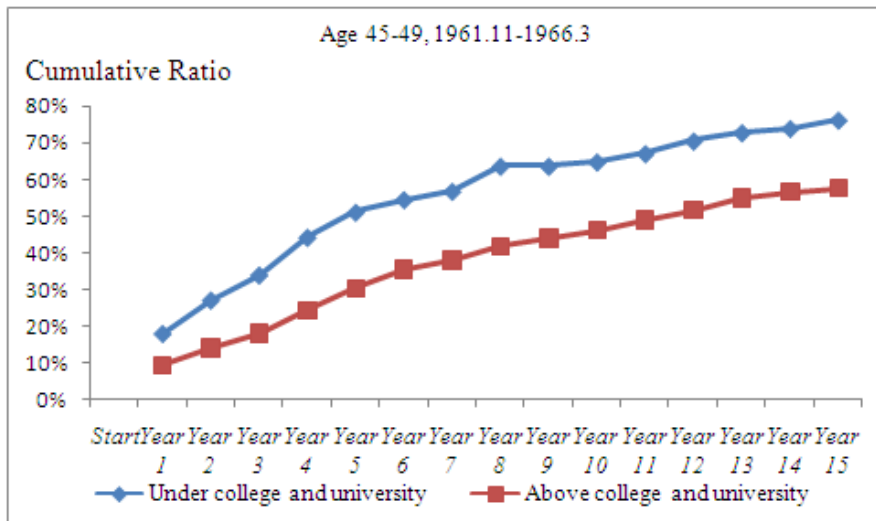


Note: Each line demonstrates the cumulative percentage of turnover from the first-jobs.
Source: LOSEF

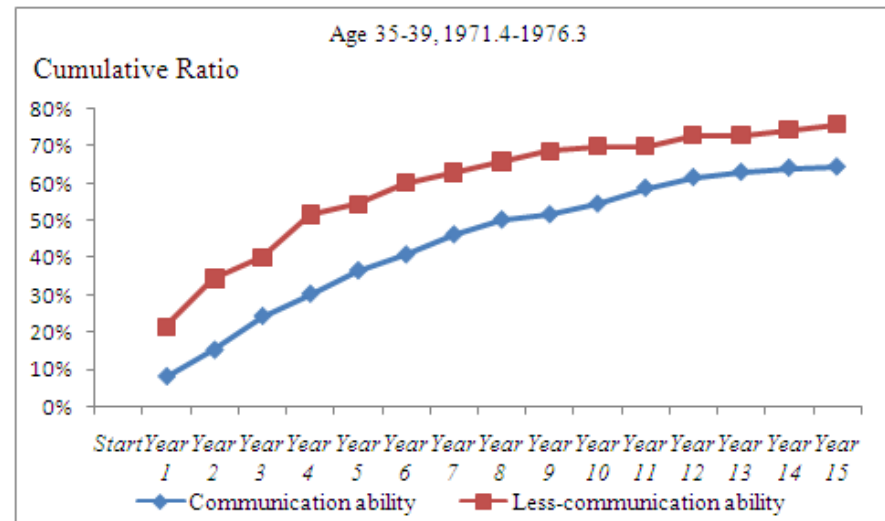
Reasons (1) – Individual Factors

- Higher educational attainment was more likely to prevent the early turnover (**Left slide**).
- Communication ability also affects (**Right slide**).

Educational Attainment



Communication Ability

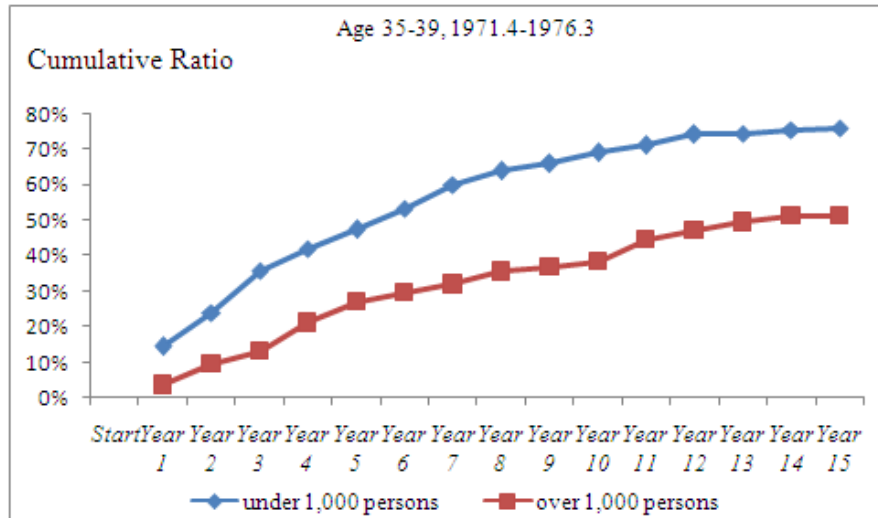


Source: LOSEF

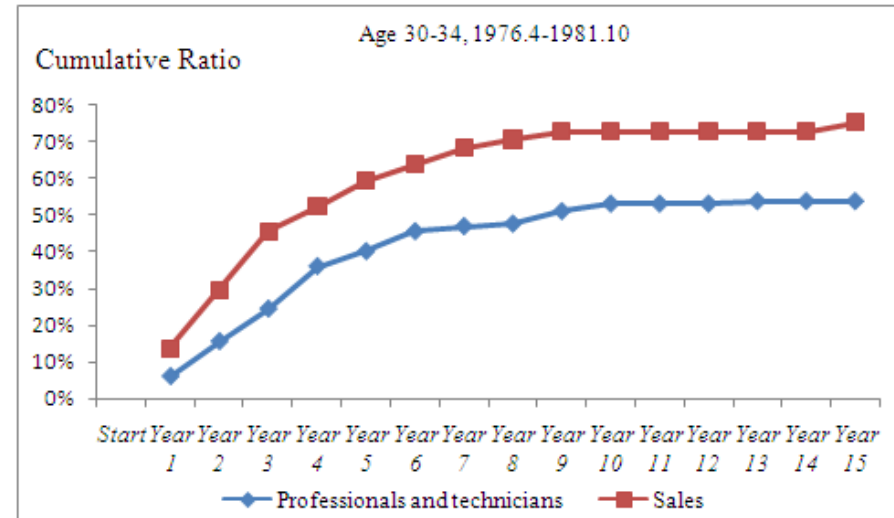
Reasons (2) – Environmental Factors

- Employees at medium- and/or small-sized companies tended to quit earlier.

Firm Size



Occupation

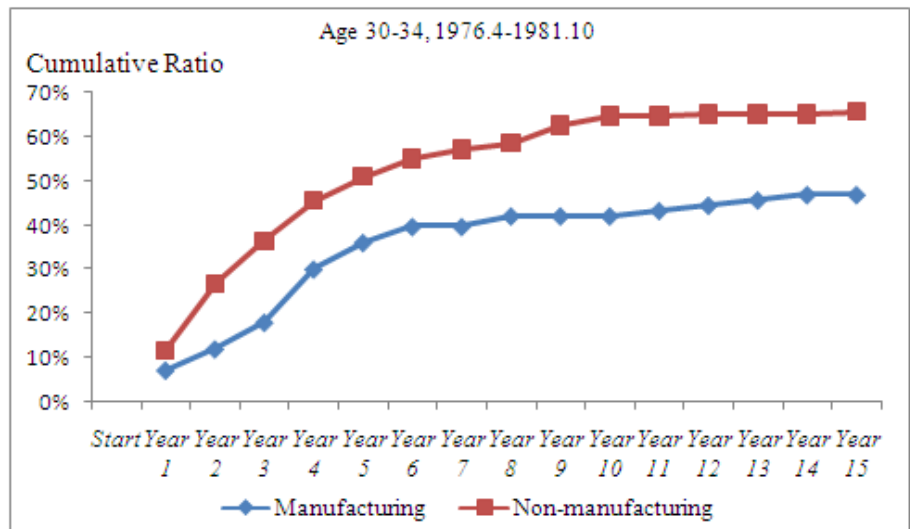
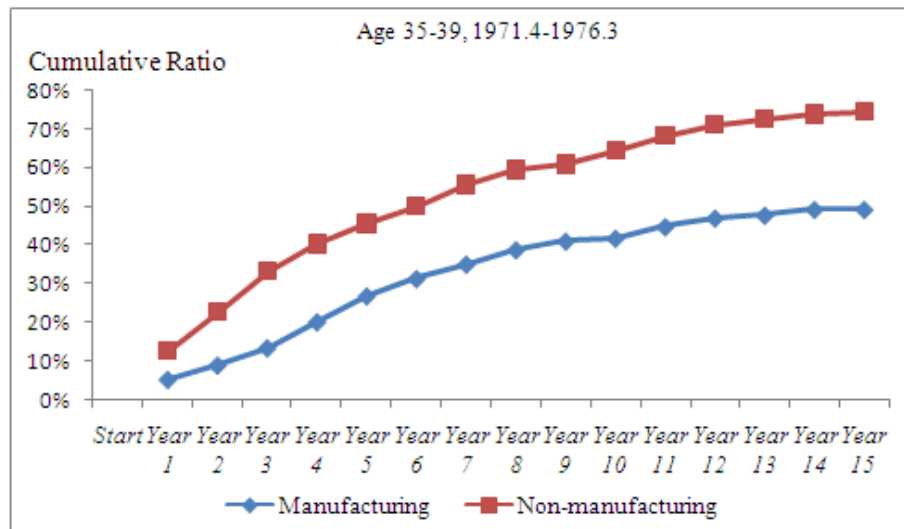
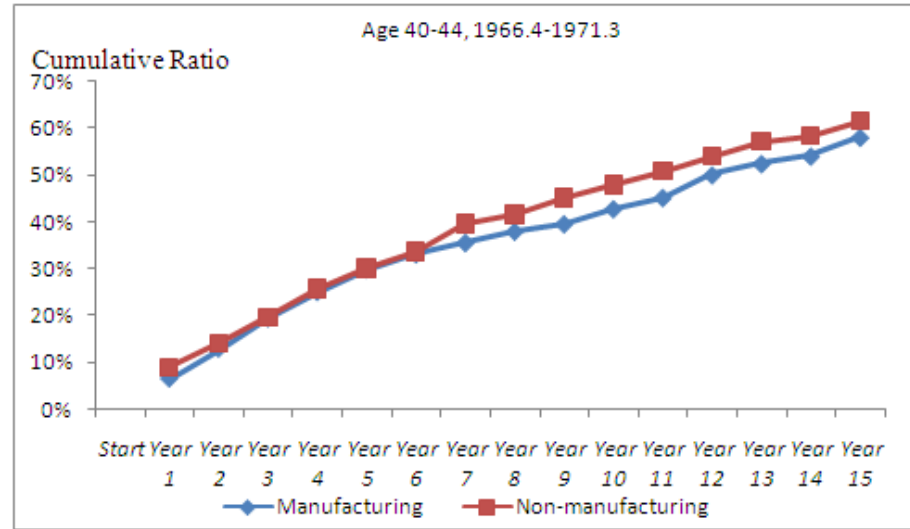
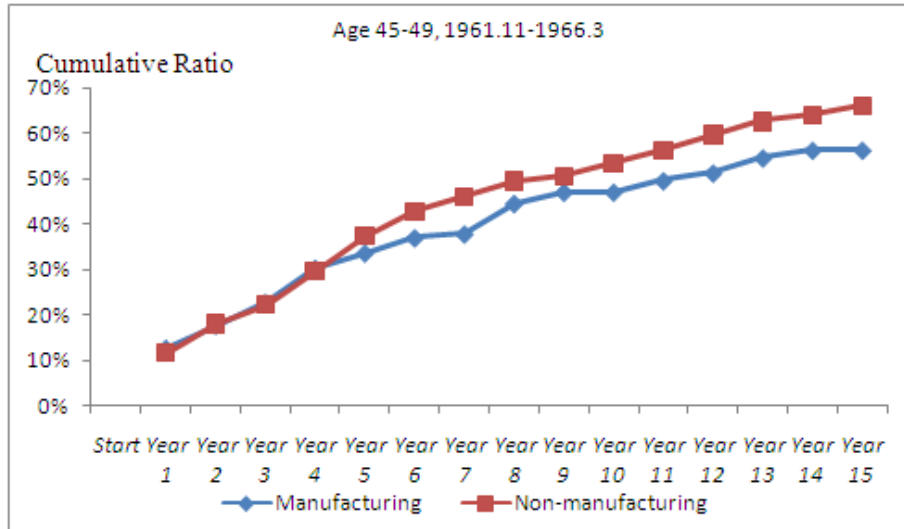


Source: LOSEF

Reasons (3) – Environmental Factors

- As for those of age 40-49, there exist little differences between the manufacturing sector and the non-manufacturing sector.
- However, for those employees of age 30-39 who started their career in the non-manufacturing sector tended to leave earlier from their first jobs (the next slide).

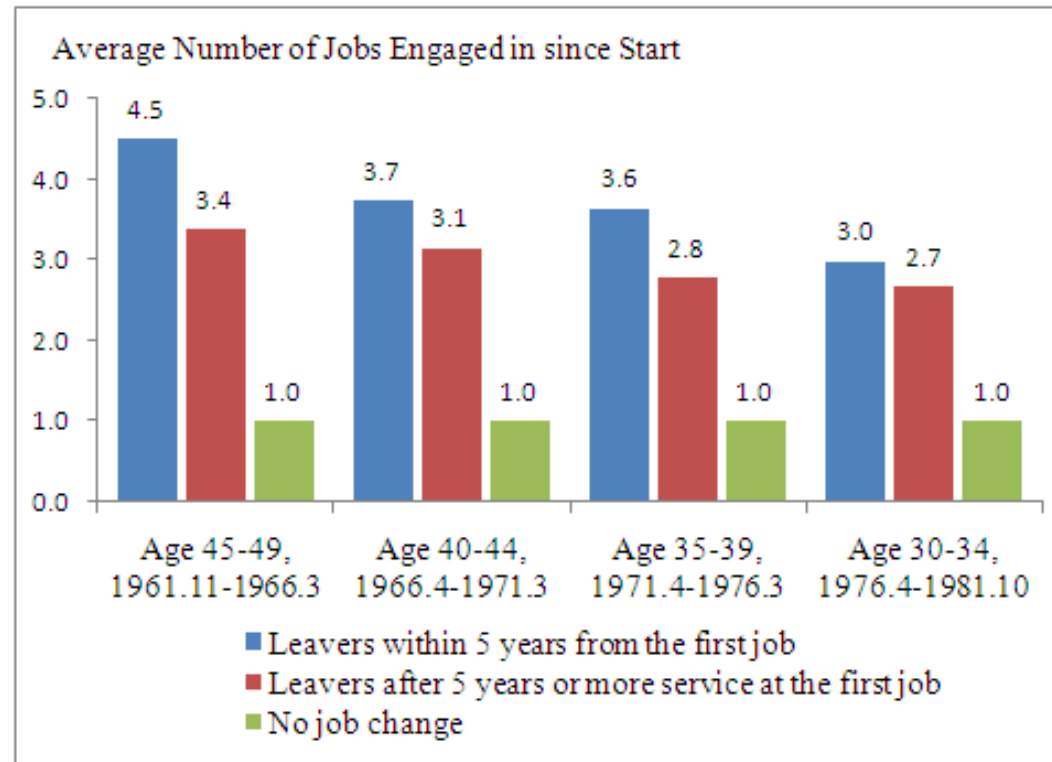
By Industry



Source: LOSEF

Fact (4) – Frequency of Job Changes

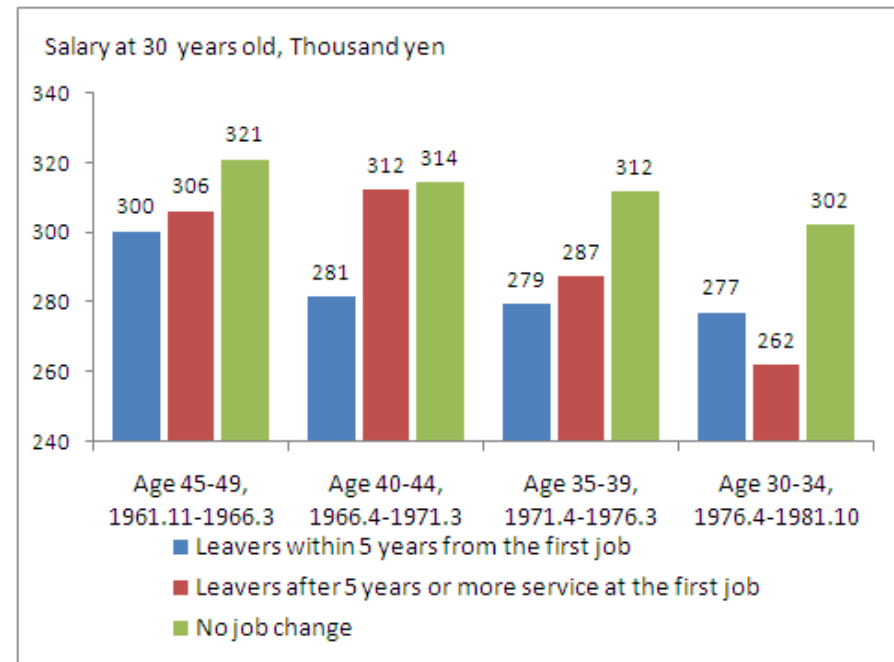
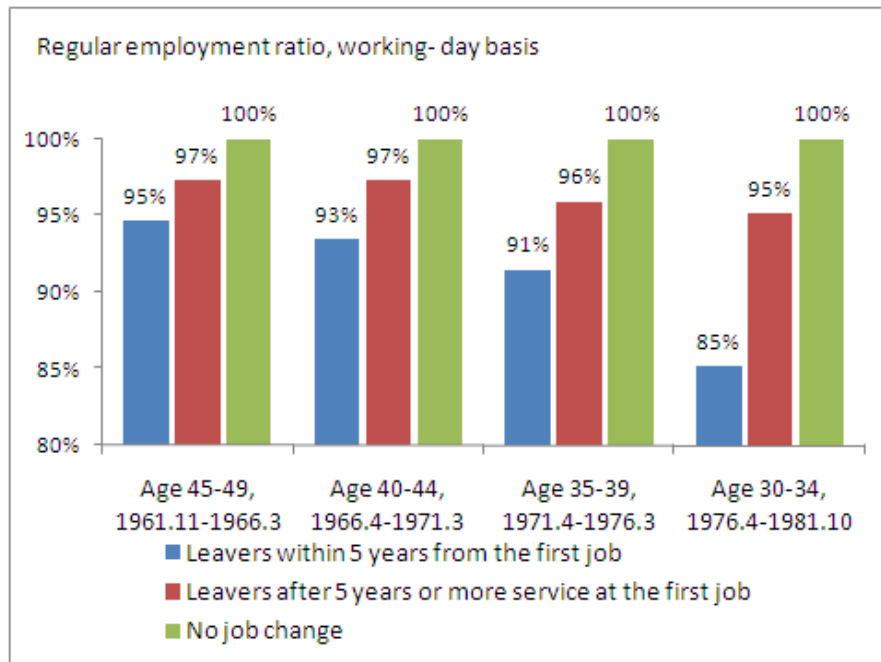
- The earlier leavers from the first jobs more often repeated their job changes. Job-matching did not always work out?



Source: LOSEF

Fact (5) – Number of Job Changes and Salary Levels for Early Leavers

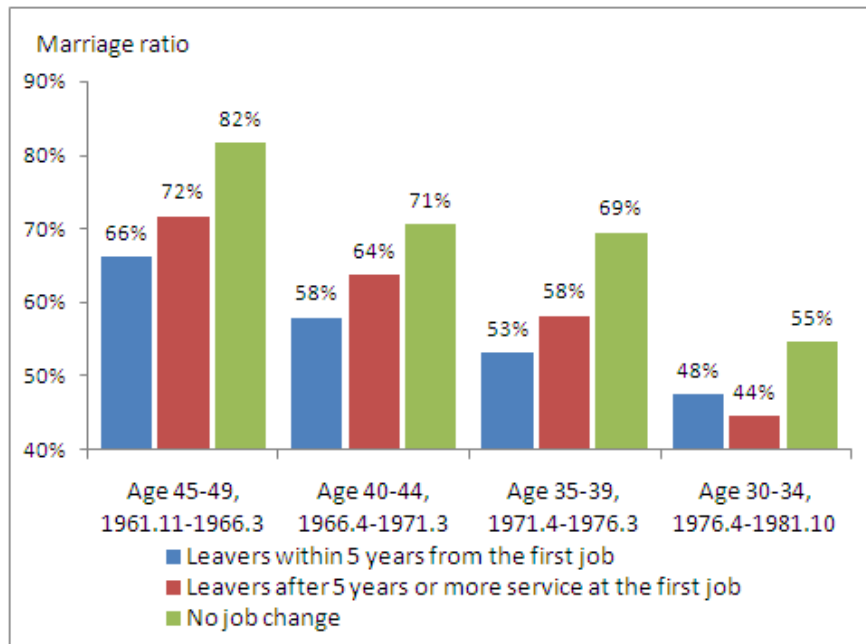
- For each cohort, the total number of career days employed as a regular worker decreases more for those with shorter service years at the first job (**Left slide**). The salary level at the age of 30 was also lower for them (**Right slide**).



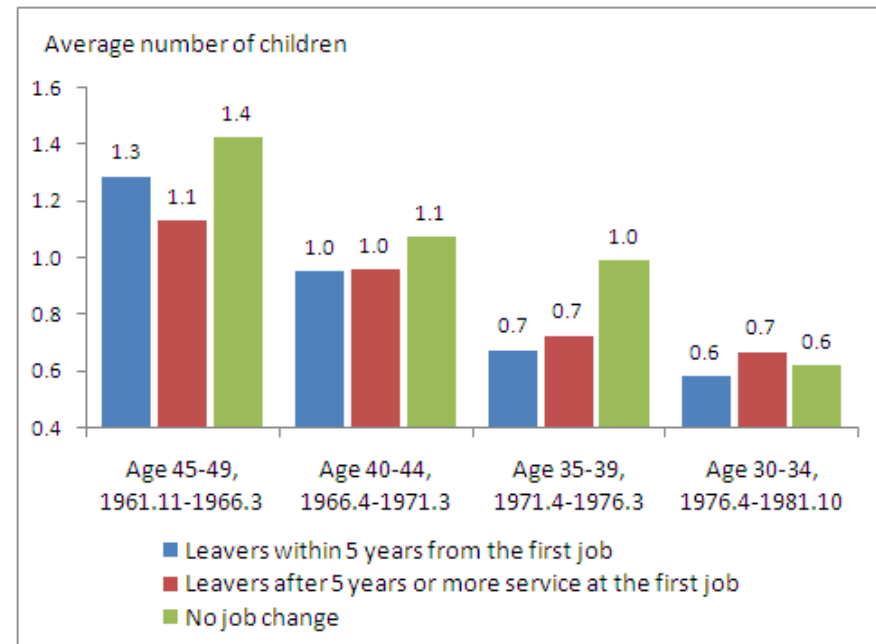
Fact (6) – Marriage Ratio and the Number of Children

- The marriage ratio and the number of children are more or less small for the early leavers.

Marriage

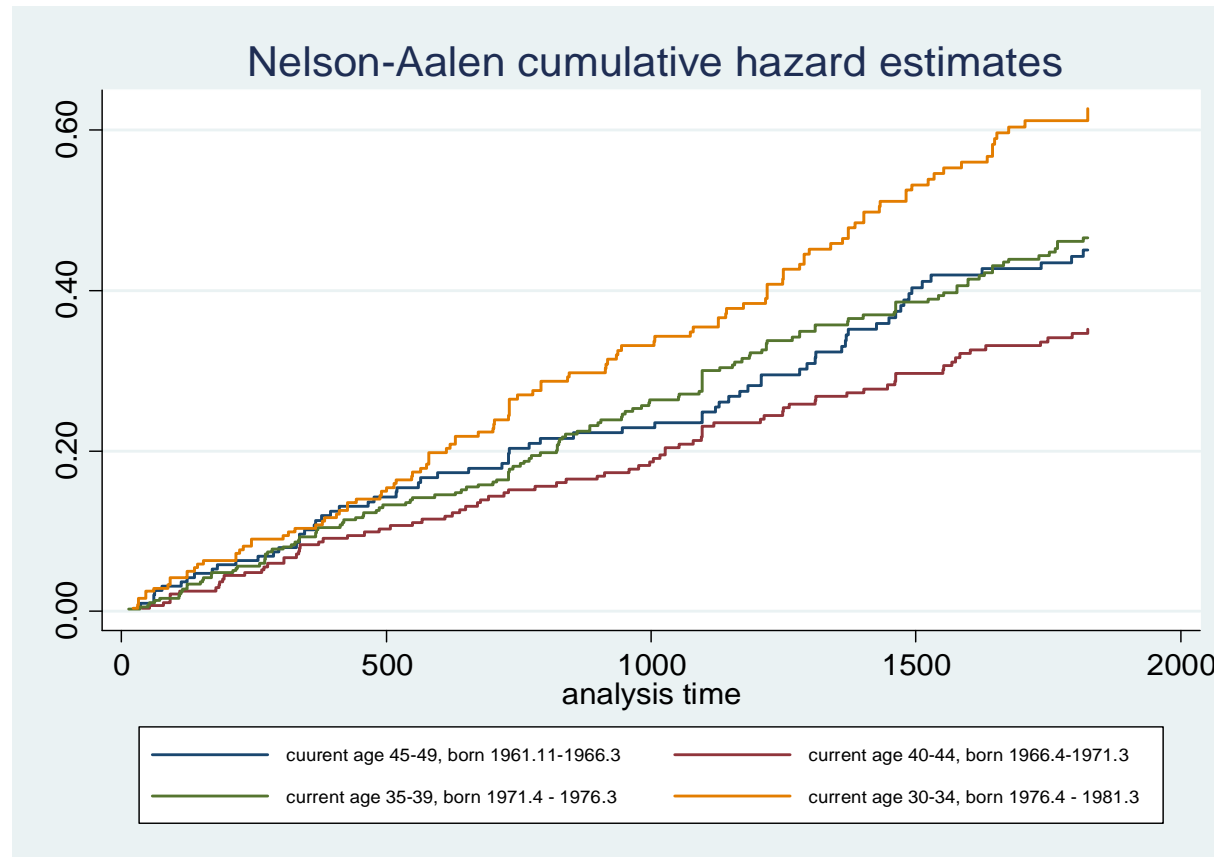


Children



Source: LOSEF

Fact (7) – Cumulative hazard of leaving the first job by cohort



Notes: The unit of the horizontal axis is “day”. Calculated by the authors using the LOSEF.

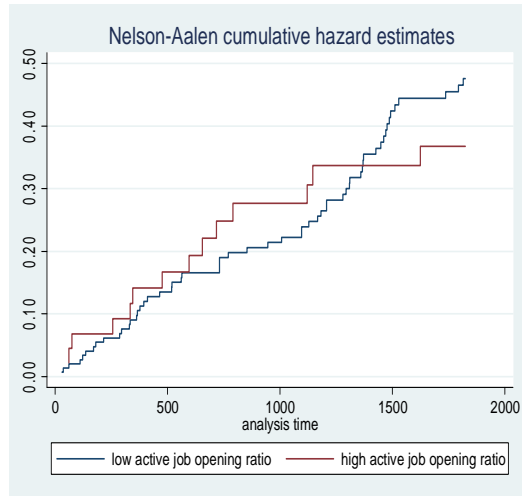
Fact (8) – Quit rate by cohort

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

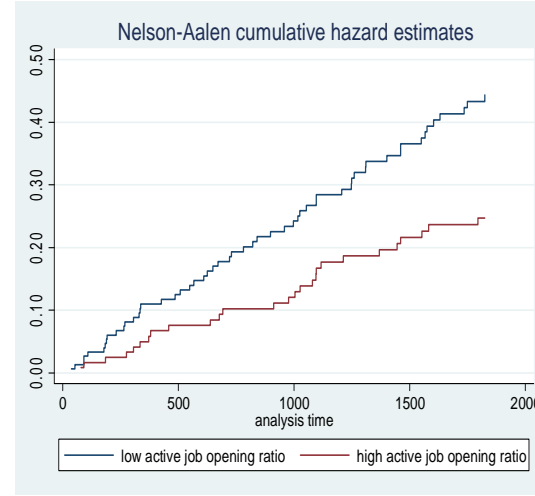
Notes: Calculated by the authors using the LOSEF.

Fact (9) – Cumulative hazard of leaving the first job by macroeconomic condition at the time of graduation

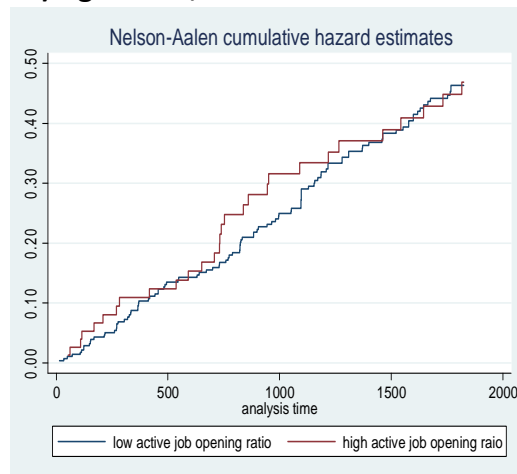
a) Age 45-49, 1961.11-1966.3



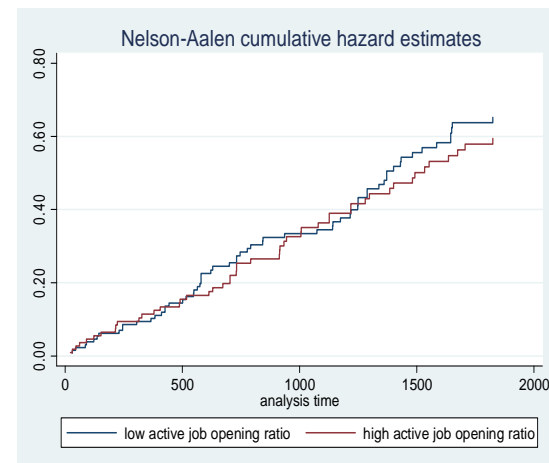
b) Age 40-44, 1966.4 -1971.3



c) Age 35-39, 1971.4-1976.3

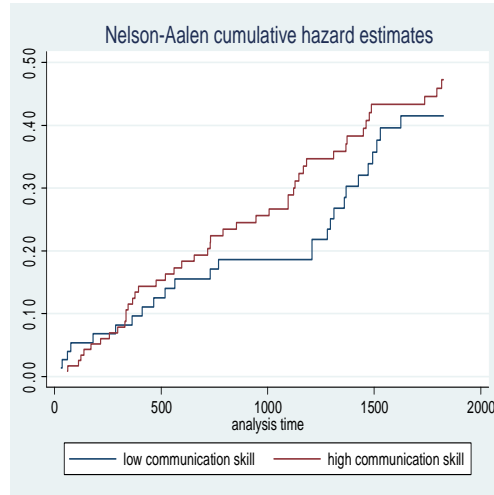


d) Age 30-34, 1976.4 -1981.3

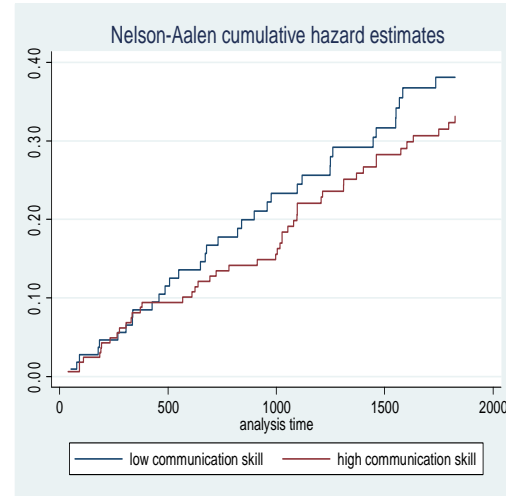


Fact (10) – Cumulative hazard of leaving the first job by communication skill

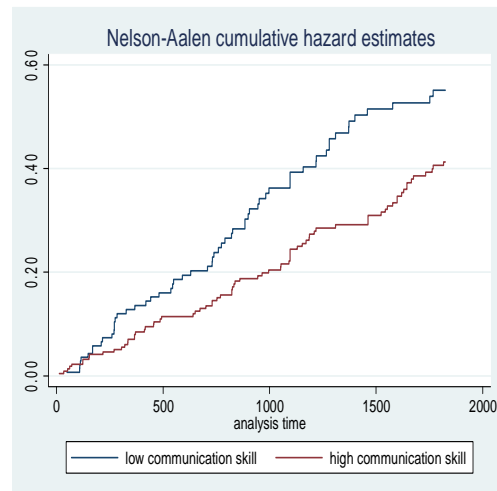
a) Age 45-49, 1961.11-1966.3



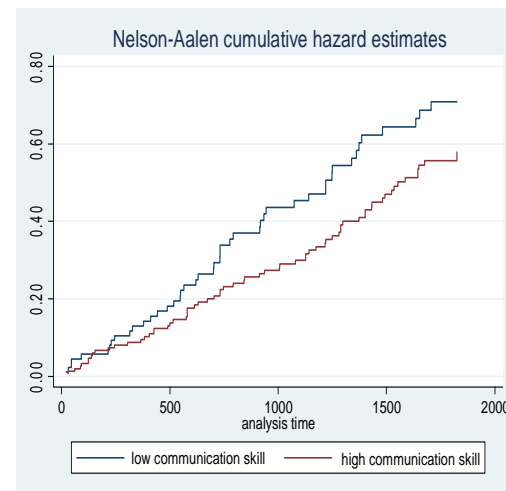
b) Age 40-44, 1966.4 -1971.3



c) Age 35-39, 1971.4-1976.3

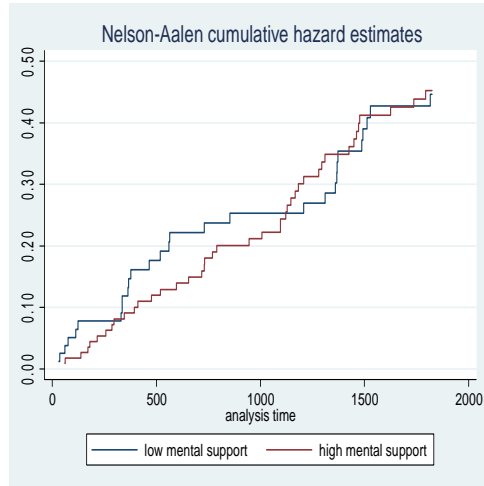


d) Age 30-34, 1976.4 -1981.3

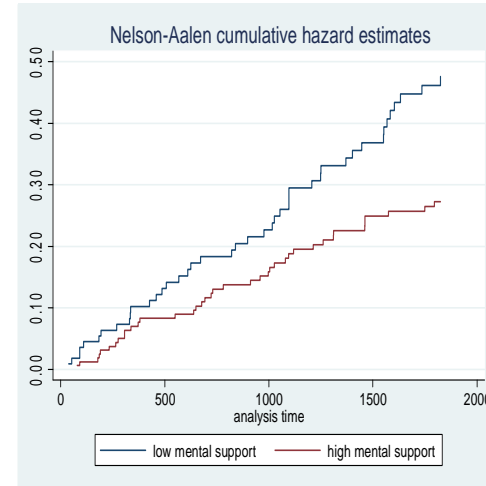


Fact (11) – Cumulative hazard of leaving the first job by mental support from parents at age 15

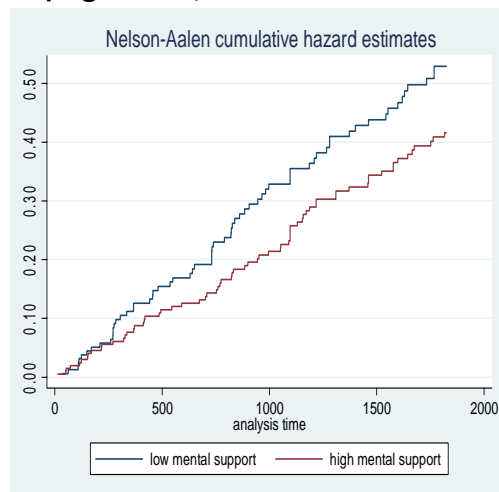
a) Age 45-49, 1961.11-1966.3



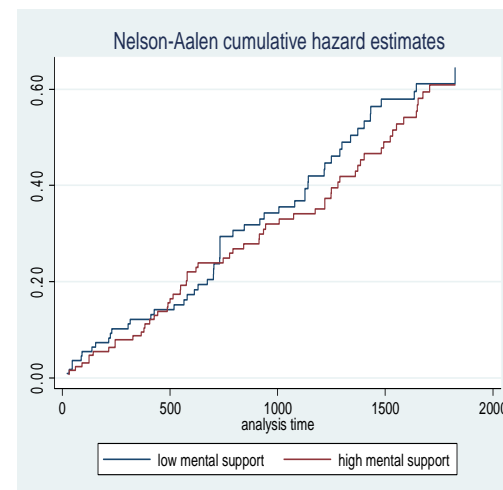
b) Age 40-44, 1966.4 -1971.3



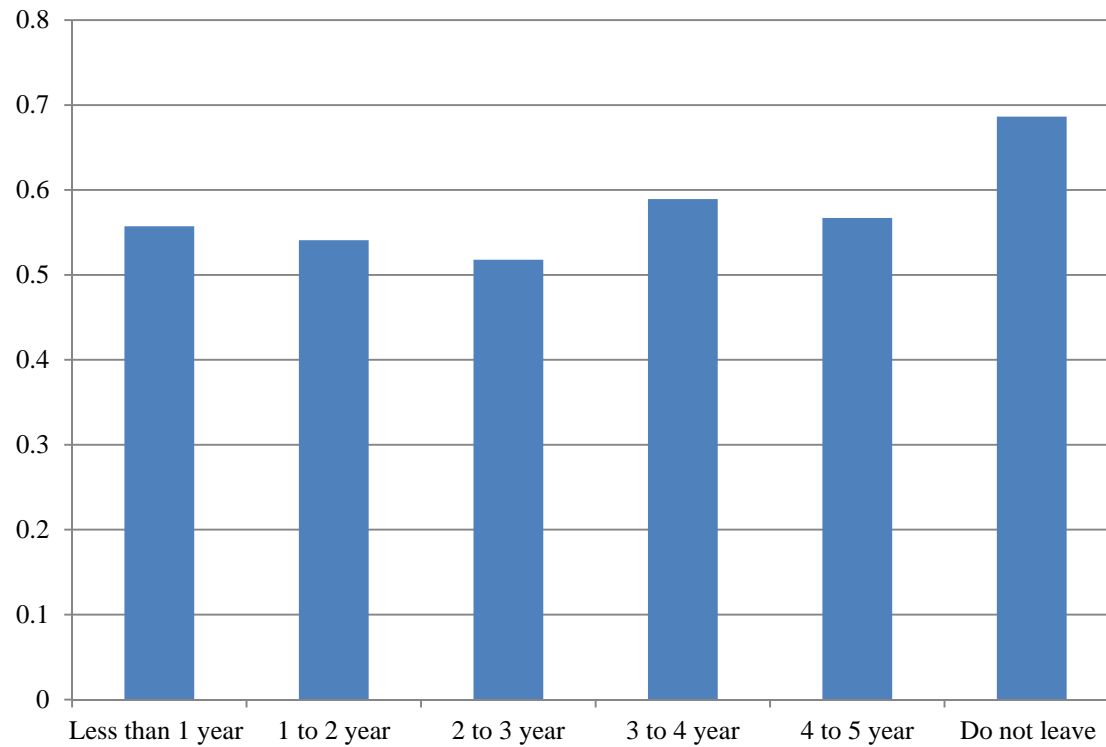
c) Age 35-39, 1971.4-1976.3



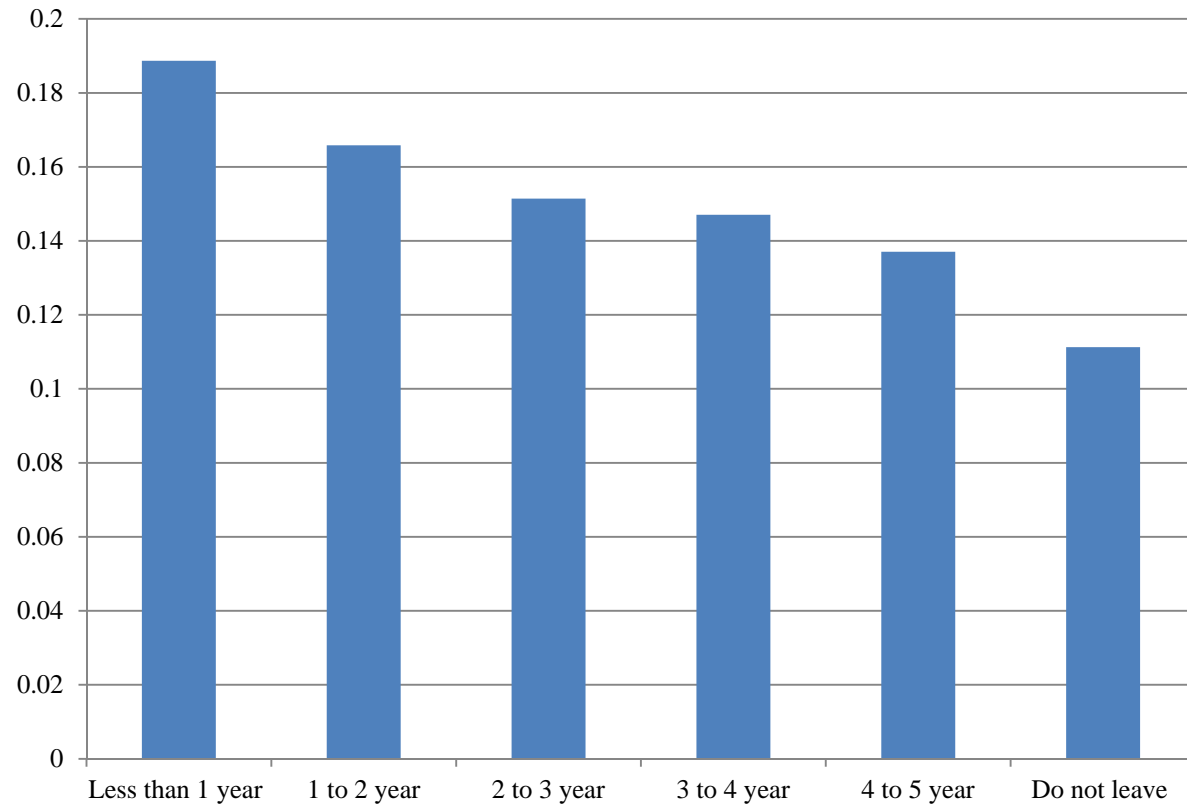
d) Age 30-34, 1976.4 -1981.3



Fact (12) – Future coverage of EPI by duration on the first job



Fact (13) – Future frequency of job changes by duration on the first job



Empirical analysis: Factors affecting the length of time staying at the first job (1)

Basic framework

- Investigate the determinants of the time elapsed until leaving the first job.
- Implement a **duration analysis**.
 - Can exploit detailed information on when a person left a certain status (“failed”).
 - Can incorporate time-varying covariates relatively easily.
- Focus on job separation **within the initial five years after starting the first job**.
 - Why? To retain the youngest sample (i.e., individuals at age 30).
 - Individuals who did not leave their first job within five years are considered as “censored”.

Empirical analysis: Factors affecting the length of time staying at the first job (2)

Estimation model: Cox proportional hazards model

Hazard function at time t :

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

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

X_{it} : Covariate vector (explained later)

$h_0(t)$: Baseline hazard function

- Estimate using a maximum likelihood.
- Estimation is semi-parametric in the sense that no parametric model is assumed for $h_0(t)$.

Empirical analysis: Factors affecting the length of time staying at the first job (3)

Estimation model: Cox proportional hazards model (Cont.)

Basic set of covariates X_{it} include

- **Conditions of macro economy when searching for the first job:**
The active job opening ratio one year before graduating from school.
- **Time-invariant characteristics of individual i :**
 - Education (high school, college, or university graduate)
 - Proxy of communication skill (a measure constructed by applying a principal component analysis to a set of 6 variables representing relationship with peers in junior high school). Higher value represents higher communication skill.
 - Family environment at age 15
 - Material support from parents (a measure constructed by applying a principal component analysis to a set of 11 variables such as “you took after-school lessons”, “lived in owner-occupied house”, “had an air-conditioner”, etc.). Higher value represents higher material support.
 - Mental support from parents (a measure constructed by applying a principal component analysis to a set of 14 variables such as “parents raised you with love and affection”, “parents were indifferent to child-raising”, “parents used violence against the children”, etc.). Higher value represents higher mental support.
 - Whether lived separately with parents when started the first job
 - Area of residence when started the first job (Keihin, Chukyo, Keihanshin metropolitan area, or others)

Empirical analysis: Factors affecting the length of time staying at the first job (4)

Estimation model: Cox proportional hazards model (Cont.)

We also estimate a model where X_{it} with

- Basic set of variables + characteristics of the first job (firm size, industry, occupation, and wage at the first year)
- Basic set of variables (excluding whether living separately with parents and the area of residence at the year of starting the first job) + characteristics of the first job (excluding wage at the first year firm size, industry, occupation) + **time-varying covariates** including
 - The active job opening ratio at year t
 - Whether married at year t-1
 - Whether living separately with parents at year t-1
 - Area of resident at year t
 - Wage at year t

Empirical analysis: Factors affecting the length of time staying at the first job (5)

Results: Determinants of the duration until separating from the first job

- Likelihood ratio test suggests applying a separate model for two different cohorts (cohort 1 with individuals currently at age 40-49 and cohort 2 with those currently at age 30-39) rather than assuming the same model for both cohorts.

Table1: Hazard ratio (Basic set of covariates)

	Current age 30-39	Current age 40-49
Active opening ratio one year before graduation year	0.448*	0.522*
	(0.167)	(0.164)
Individual characteristics		
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 skill	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: Mental	0.858*	0.907
	(0.056)	(0.075)
Number of obs.	606	471
Log likelihood	-1521.662	-899.252

Ex. An increase in the active opening ratio from 0 to 1 decreases the hazard of leaving the first job by 48% (= (1-0.522)*100)

Notes:
 Standard errors in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.
 Estimated coefficients of the dummy variable representing whether living separately with parents and the area of residence at the year starting the first job are omitted (not statistically significant).

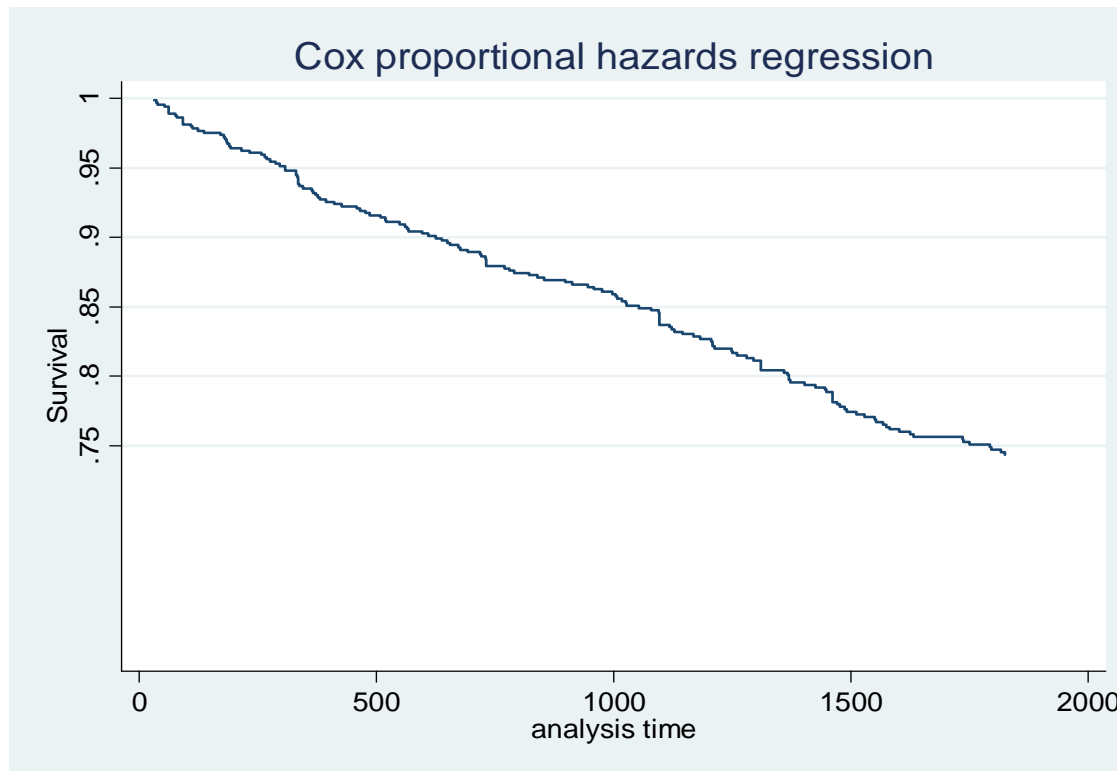
Empirical analysis: Factors affecting the length of time staying at the first job (6)

Results: Determinants of the duration until separating from the first job (Cont.)

- Investigate
 - How does a survivor function varies between the young and old cohorts ?
 - How far the difference is due to a difference in the macroeconomic condition at time when transiting from school to work?
- Using the estimation results, calculate the survivor function f of the “representative” individual in older cohort (Figure 1) and younger cohort (Figure 2; Figure 3, Blue line).
- Given the estimated model of the younger cohort, calculate the survivor function of the “counterfactual” individual who has the “representative” individual characteristics of the younger cohort but who faced the same macroeconomic condition with the older cohort when leaving school (Figure 3, Red line).
- Given the estimated model of the younger cohort, calculate the survivor function of the “counterfactual” individual who experienced the “representative” macroeconomic condition of the younger cohort when leaving school but who has the same level of individual characteristics with the older cohort (Figure 3, Green line).

Empirical analysis: Factors affecting the length of time staying at the first job (7)

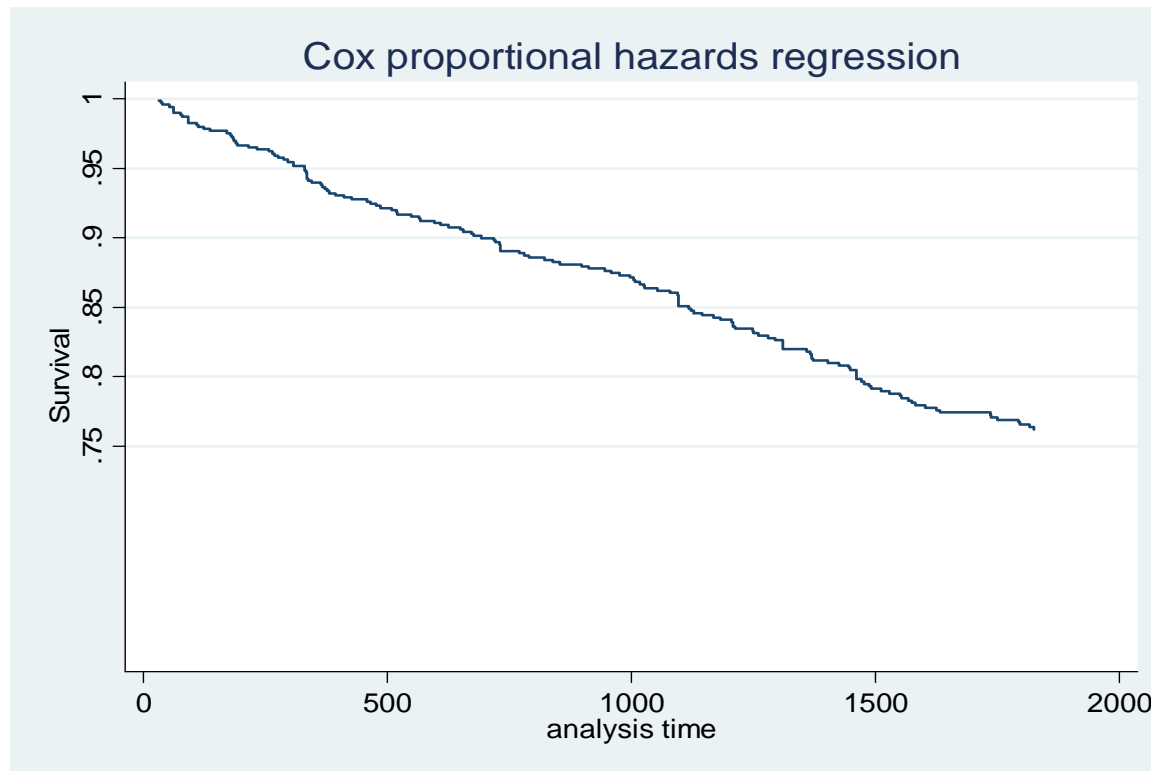
Fig1:Survivor function of the representative individual in the old cohort, Basic set of covariates



Note: The unit of the horizontal axis is in day.

Empirical analysis: Factors affecting the length of time staying at the first job (8)

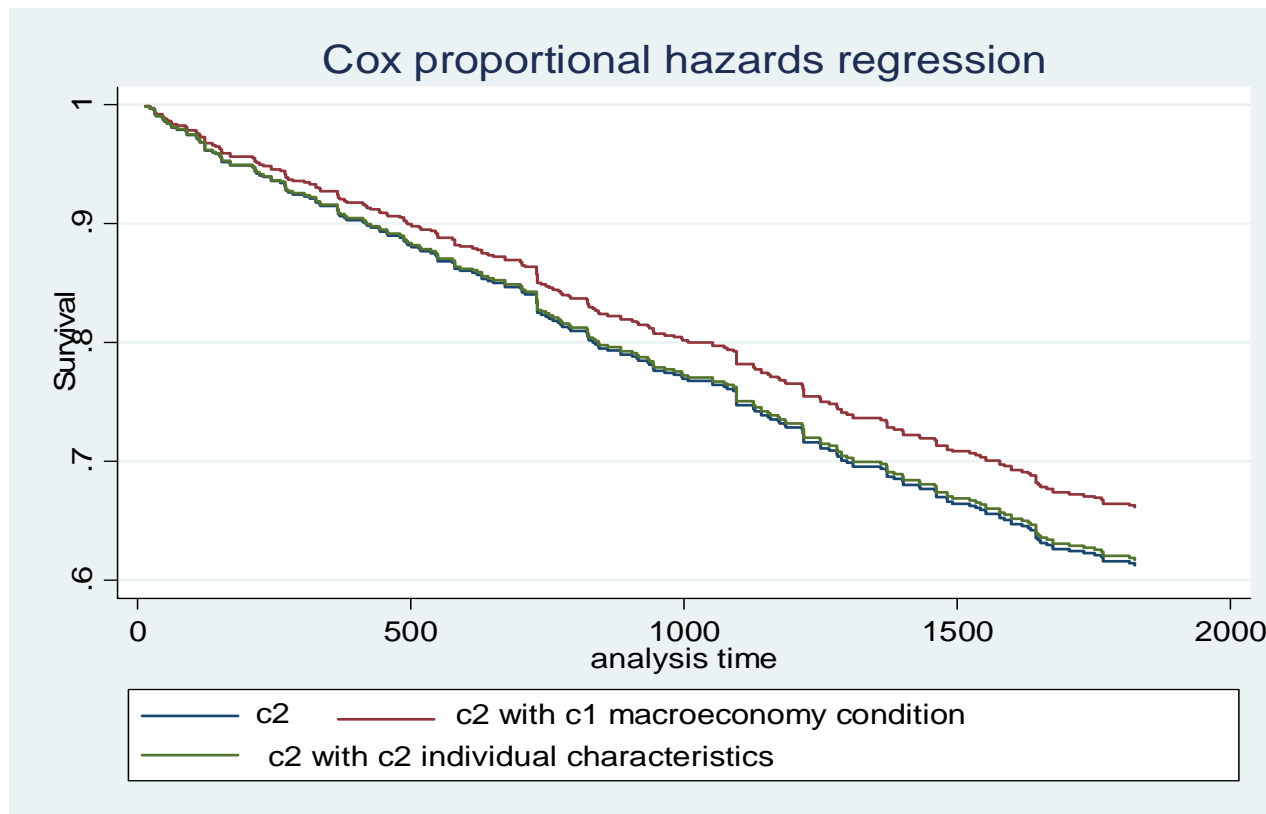
Fig2:Survivor function of the representative individual in the young cohort, Basic set of covariates



Note: The unit of the horizontal axis is in day.

Empirical analysis: Why and how the current younger generations left their initial jobs early? (8)

Fig3:Survivor function of the representative individual in the young cohort and various counterfactual individuals , Basic set of covariates



Note: The unit of the horizontal axis is in day.

Empirical analysis: Why and how the current younger generations left their initial jobs early? (9)

Results: Determinants of the duration until separating from the first job (Cont.)

Table2: Hazard ratio, Basic set of covariates + first job characteristics

	Current age 30-39	Current age 40-49
First job characteristics		
Firm size (Base category: less than 1000)		
1000 or more	0.582** (0.088)	0.519** (0.091)
Industry (Base category: other)		
Manufacture	0.619** (0.095)	1.229 (0.210)
Job (Base category: other)		
Manager or professional	0.744* (0.098)	0.648* (0.111)
Wage first year, first job		
	0.993** (0.002)	0.996+ (0.002)
Number of obs.	606	471
Log likelihood	-1492.226	-886.844

Notes: Standard errors in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. Estimated coefficients of other variables do not change significantly from those presented in Table 1 and are omitted from this table.

Empirical analysis: Why and how the current younger generations left their initial jobs early? (10)

Results: Determinants of the duration until separating from the first job (Cont.)

Table3: Hazard ratio, Basic set of covariates + first job characteristics + time-varying variables

	Current age 30-39	Current age 40-49
Active opening ratio one year before graduation year	0.407*	0.544+
	(0.161)	(0.180)
Active opening ratio at time t	1.349	1.869*
	(0.541)	(0.516)
Live separately with parents at time t-1	0.99	0.777
	(0.140)	(0.143)
Married at time t-1	0.451+	0.306
	(0.210)	(0.310)
First job characteristics		
Wage at year t, first job	1.011**	0.999
	(0.002)	(0.003)
Number of obs.	606	471
Log likelihood	-1391.578	-821.384

Notes: Standard errors in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. Estimated coefficients of other variables do not change significantly from those presented in Tables 1 and 2 and are omitted from this table.

Empirical analysis: Why and how the current younger generations left their initial jobs early? (11)

Summary of the results

- Good macro economy during the period of searching the first job reduces the probability of leaving the first job.
- As to the individual characteristics, communication skills and mental support from parents at age 15 have significant relationship with the probability of separating from the first job.
- Differences between cohorts in instantaneous probabilities of leaving the first job during the initial five years due mainly to the conditions of macro economy rather than to individual characteristics.
- As to the first-job characteristics, firm size, occupation, and wage have significant relationship with the probability of separating from the first job.
- Good macro economy in the current year enhances the probability of leaving the first job. The relationship between the hazard of leaving the first job and macro-economic conditions during the period of searching the first job remains significant even after controlling for the current macro-economic conditions.

Empirical analysis: Effects of an early leave from the first job on later labor market outcomes (1)

Basic framework

Investigate later labor market outcomes of first job leavers **with a special focus on the difference in outcomes by the timing of the leave (within 5 years):**

- Whether the first-job leavers are significantly different in the life-time average years covered by the employees' pension insurance (EPI)/the life-time average number of job changes. For each of the two outcomes, **whether there is any difference among leavers by the timing of leave.**

Empirical analysis: Effects of an early leave from the first job on later labor market outcomes (2)

Effects of early job turnover on the future coverage of EPI/frequency of job changes

Empirical model: Linear model

$$W_{it} = \gamma_0 + \sum_{j=1}^5 \gamma^j D_i^j + X_{it} + \varepsilon_{it}$$

- W_{it} represents either
 - Coverage of the EPI = Total number of years enrolled in the EPI as of the interview date/ Total number of years since the individual started his first job.
 - Frequency of job change = Total number of job changes as of the interview date/ Total number of years since the individual started his first job.
- X_{it} is a basic set of covariates + first job characteristics (firm size, industry, occupation, and wage at the first year)

Empirical analysis: Effects of an early leave from the first job on later labor market outcomes (3)

Effects of early job turnover on the future coverage of EPI/frequency of job changes

Results

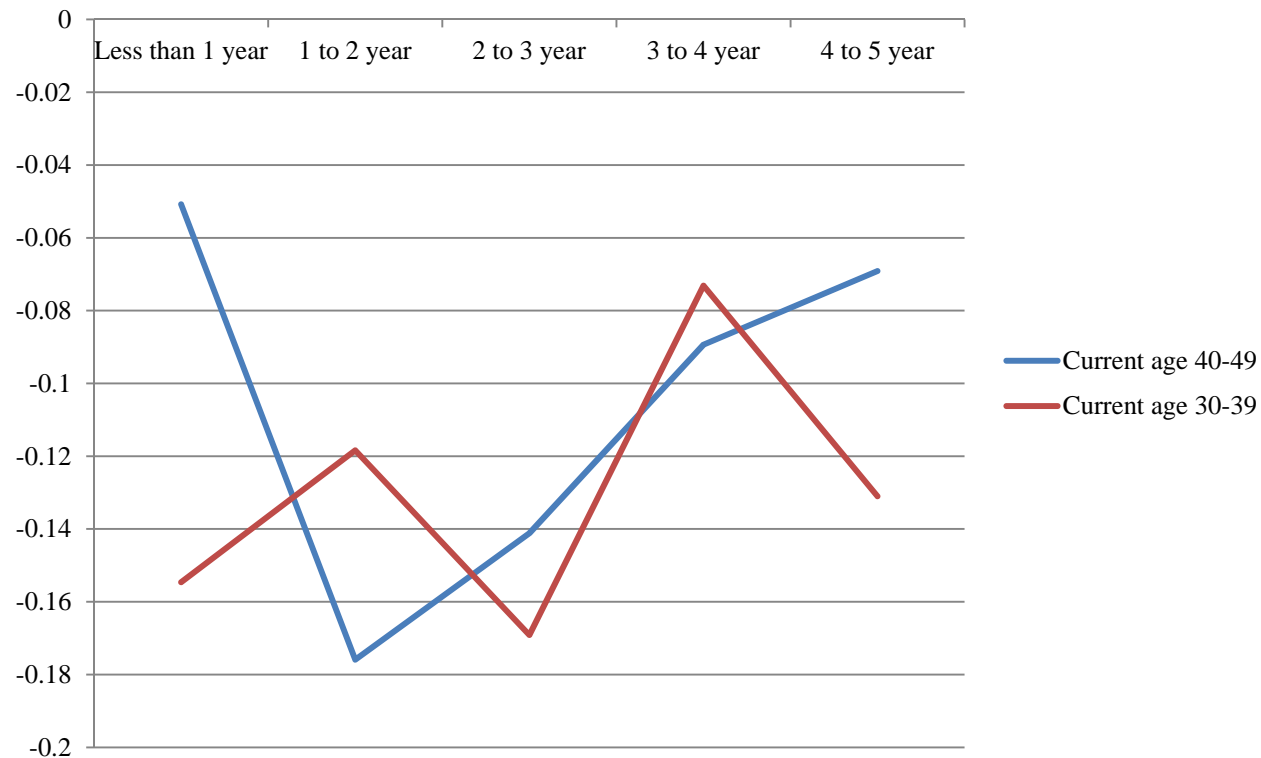
Table5: Effects of the first job duration on the future coverage of EPI

	Current age 30-39	Current age 40-49
Less than 1 year	-0.155** (0.031)	-0.051 (0.032)
1 to 2 year	-0.118** (0.031)	-0.176** (0.038)
2 to 3 year	-0.169** (0.032)	-0.141** (0.042)
3 to 4 year	-0.073* (0.031)	-0.089* (0.035)
4 to 5 year	-0.131** (0.035)	-0.069+ (0.041)
Number of obs.	606	471

Standard errors in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.
The base category is “do not separate from the first job within 5 years”.

Empirical analysis: Effects of an early leave from the first job on later labor market outcomes (4)

Figure 3: Effects on the life-time-average length of coverage in the EPI



Notes: The horizontal line shows the number of years within which the individual separated from the first job, and the vertical line represents the reduction in the number of years (per year) the individual enrolled in the EPI given the number of years he stayed with the first job.

Empirical analysis: Effects of an early leave from the first job on later labor market outcomes (5)

Effects of early job turnover on the future coverage of EPI/frequency of job changes

Results (Cont.)

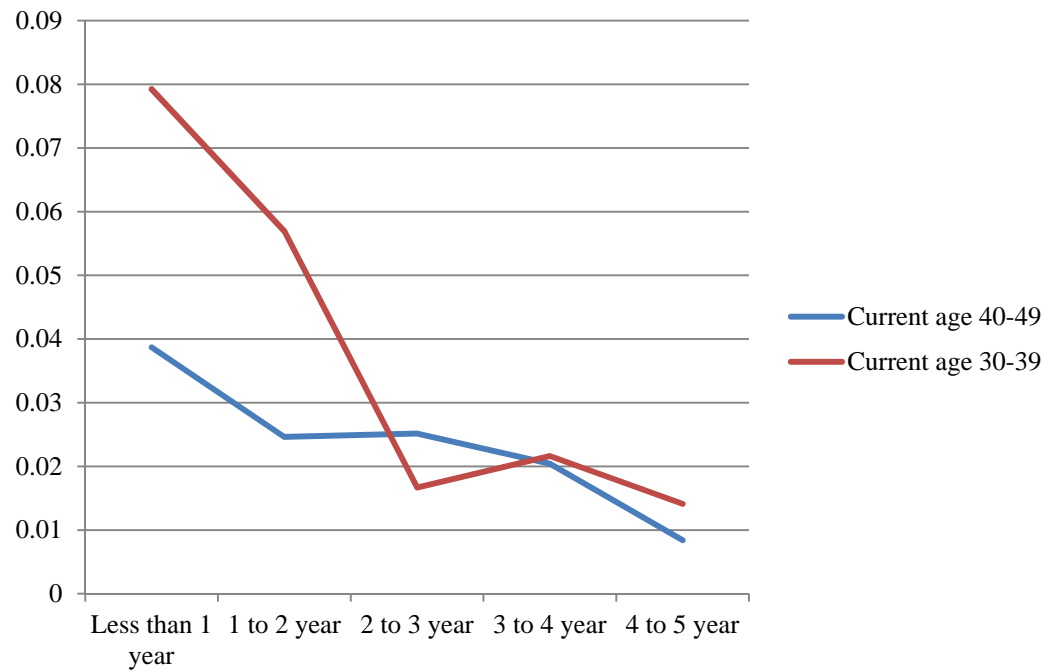
Table6: Effects of the first job duration on the future frequency of job changes

	Current age 30-39	Current age 40-49
Less than 1 year	0.079**	0.039**
	(0.014)	(0.013)
1 to 2 year	0.057**	0.025
	(0.014)	(0.015)
2 to 3 year	0.017	0.025
	(0.014)	(0.017)
3 to 4 year	0.022	0.02
	(0.014)	(0.014)
4 to 5 year	0.014	0.008
	(0.016)	(0.017)
Number of obs.	606	471

Notes: N=1107. Standard errors in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.
The base category is “do not separate from the first job within 5 years”.

Empirical analysis: Effects of an early leave from the first job on later labor market outcomes (6)

Figure4: Effects on the life-time-average frequency of job change



Notes: The horizontal line shows the number of years within which the individual separated from the first job, and the vertical line represents the increase in the number of job changes per year given the number of years he stayed with the first job.

Empirical analysis: Effects of an early leave from the first job on later labor market outcomes (7)

Summary of the results

- No clear evidence on the determinants of the time spent to find the next regular job.
- No clear evidence that the timing of leaving the first job matters for the time until finding the next regular job, although the result may be due to small sample sizes and endogeneity (Simultaneous estimation exploiting non-linearity? Possibly, identification problem).
- If an individual leaves his first job within 5 years after starting the job, the life time average enrollment period in the EPI becomes shorter for both cohorts.
- For the older cohort, the effects on the EPI enrollment are significantly larger if an individual left his first job within one year rather than staying longer.
- For the younger cohort, the effects on the EPI enrollment are significantly larger if an individual left his first job within three years rather than staying longer.
- The life time average number of job changes increases if an individual leaves his first job within a year (the older cohort) or two years (the younger cohort) after starting the job .

Summary

- Even among individuals whose first job was a regular job, younger cohorts are more likely to leave their first job despite the fact that it is getting harder to become regularly employed.
- Conditions of macro economy at the time of transiting from school to work and after starting the first job affect the tenure in the first job.
- Conditions of macro economy may have a relatively important role in explaining the differences between young and old cohorts in the propensity to leave the first job soon after its initiation.
- Leaving the first job soon after its initiation may have a negative effect on later labor market outcomes.
- There is some evidence indicating that the timing of leaving the first job may matter for later labor market outcomes: the shorter the duration on the first job, the worse the later labor market outcomes.

Thank you!!