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The importance of age for the reallocation of labor: evidence from Swedish linked employer-employee data 1986–2002

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Abstract

Using employer-employee data covering the whole Swedish economy over a uniquely long time period from 1986 to 2002, we examine how job and worker flows have been distributed across age groups. We find that job and worker flows vary by age groups, not only with respect to magnitude and variation, but with respect to direction as well. The differences between the age groups are mainly driven by the job creation rates. Further, estimating a multinomial logistic model, we investigate the importance of age for leaving, changing or entering a new employment. Even though controlling for a number of factors, estimated age effects are substantial.

Key words: Linked employer-employee data, job and worker flows, cyclicality, age
JEL-codes: J23, J21, J62, J63

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Sammanfattning
I denna rapport studeras med hjälp av länkade arbetsställe–arbetstagardata jobbflöden och arbetstagarflöden, dvs. arbeten som skapats och försvunnit och flöden av arbetstagare till och från arbetsställen. Syftet är att undersöka hur dessa flöden utvecklats i den svenska ekonomin under perioden 1986–2002. Flödena studeras dels på aggregerad nivå, dels för olika åldersgrupper. Åldersgrupperna har delats upp enligt följande i) 16-29 åringar ii) 30-49 åringar iii) 50-65 åringar. Vi finner att omsättningen av arbeten varierar mellan åldersgrupper, inte bara med avseende på omsättningens storlek utan även med avseende på dess riktning. Skillnader i flöden mellan de olika åldersgrupperna drivs framförallt av variationer i de arbeten som skapas; under hela den period som studeras har det relativt sett skapats betydligt fler arbeten för yngre arbetstagare. De arbeten som skapas för yngre arbetstagare påverkas dock mer av konjunktursvängningarna. Vidare skattas en multinomial logit-model där risken att lämna, byta eller påbörja en anställning undersöks. Även då vi kontrollerar för ett antal faktorer såsom t ex utbildningsnivå, sektor och kön är de skattade effekterna av ålder betydande.

1. Introduction

There has been a proliferation of literature on job and worker flows in recent years.[1] Evidence from several countries has shown that firms and workers are heterogeneous and that a great deal of job creation and destruction, as well as hirings and separations of workers, occurs simultaneously. The flows of jobs and workers give evidence of the complexity of the dynamics on the labor market even when net employment does not alter much.

Although the heterogeneity of establishments is often taken into account in most studies, workers are generally treated as homogeneous. There are, however, several reasons to suspect that both hiring and separation costs vary for different kind of jobs and that these variations may transform into different job and worker flows, not only with respect to magnitude and variation, but with respect to direction as well.[2]

The question of whether or not job and worker flows are countercyclical has been discussed in many previous studies. If a countercyclical pattern has been found, it has often been explained by recessions being periods of intense restructuring activity in the economy. A number of models have been developed to incorporate the cyclical pattern of job and worker flows. Mortensen & Pissarides (1994) present a matching model of unemployment with endogenous job creation and job destruction processes. During upturns it takes time to fill vacancies while during downturns, job destruction occurs immediately. Job turnover is thus countercyclical. Garibaldi (1998) extends the Mortensen & Pissarides model by allowing for employment protection legislation in the form of fixed firing costs. When firing is costly and time-consuming, the asymmetry in the cyclical pattern of job creation and job destruction disappears, and job destruction becomes less responsive. Higher firing costs may therefore result in acyclical or even procyclical movement of job reallocation.

Gartell et al (2007), who study job and worker flows by educational level, find that job reallocation rates for the Swedish labor market are countercyclical on an aggregate level which supports the model by Mortensen & Pissarides. According to Garibaldi the countercyclical pattern suggests that separation costs in Sweden are rather low. However, the countercyclical behavior is only found among those with the lowest educational level. For workers with the highest educational level, job reallocation rates are even found to be

[1] See Abowd & Kramarz (1999) and Davis & Haltiwanger (1999) for overviews of studies using linked employer-employee data on job and worker flows. Flows of workers are presented in e.g. Hamermesh et al. (1994), Lane et al. (1996), Belzil (1997), Albæk & Sørenssen (1998), Abowd et al. (1999) and Salvanes & Førre (2003), Gielen & van Ours (2006). See Andersson et al. (1998), Persson (1999), Arai & Heyman (2000), Andersson (2003) and Nordström Skans et al. (2006), Gartell et al (2007) for studies using Swedish data.

[2] Studies by Gartell et al. (2007) and Gielen & van Ours (2006) show that both educational level and age, respectively, are important for both the magnitude, variation and the cyclical pattern of job and worker flows over the business cycle.

procyclical. Employers thereby seem to use recessions for restructuring by separating less educated workers and by keeping more highly educated workers. The results are consistent with Garibaldi, assuming separation costs being greater for highly educated, than for the less educated workers.

During the last decades of the 20th century there has been a strong relative shift in employment in favor for more highly educated workers. The educational level in the population is strongly related to age; younger persons do in general have a higher level of education than older persons. This suggests that the results found by Gartell et al. (2007) for different educational groups also might have been driven by age related differences. That age plays an important role for the employment adjustment over the business cycle is confirmed by Gielen & van Ours (2006). Their results indicate that young workers experience most employment dynamics and that cyclical adjustment of the workforce occur mainly through fluctuations in worker entry for young and prime-age workers while for old workers they occur mainly through fluctuations in separations. Recessions are found to affect both young and old workers, but young workers are more able to recover quickly during a business cycle upturn. Previous studies by Clark & Summons (1981) and Abowd et al. (2007) have also shown that young and older workers often bear a disproportionate share of burden of recessions.

Both worker and firm decisions based on human capital investments, adjustment costs and wage costs are likely to result in age-specific effects. Investments in firm-specific human capital are likely to result in a more productive employment relationship and to make older workers who have invested in this specific knowledge less likely to quit than younger workers. Employers, on the other hand, might prefer to dismiss younger workers first because they have not yet invested in that much firm-specific capital as older workers have. Since firing costs often increase with age, tenure and wage it may also be easier for employers to dismiss younger than older workers. However, employers may also prefer to dismiss older workers first if they are over-paid due to the upward-sloping age-earnings profile (Lazear, 1979). Combining both these views in an efficient layoff rule Lazear (1995) shows that both younger and older workers will be laid off before prime-age workers. Finally age-specific flows may also arise because older have different skill sets than younger workers, see Abowd et al. (2007).

The Swedish labor market is an interesting case to study considering that individual employment protection in Sweden compared to most European countries is relatively restrictive and that employment protection is higher for older than younger workers. If this

implies higher separation costs for older than for younger workers this ought to result in lower job flows and worker flows, as well as less countercyclical behavior, for older workers than for younger workers. Although employment protection is greater for older than for younger workers in Sweden, studies by Calleman (1999) and Jans (2002) show that both younger and older workers have been more likely than prime age workers to loose their jobs due to dismissals. This supports the models by Lazear and Abowd. Deviations from seniority rules, last in first out, seem to have been rather common and especially during the recession years in the beginning of the 1990s. The deviations implicate that firing costs for older worker might be lower than expected and that several other factors than employment security might be related to age and the reallocation of jobs and workers.

In this paper we look more closely into job and worker flows and if the cyclical pattern differs across age groups. Since age is strongly related to education we also estimate a model that allows us to control for education and other factors that might be important for the reallocation of jobs and workers.

We have structured the paper as follows: Section 2 presents a brief overview of the Swedish labor market, and Section 3 describes the data. Section 4 includes the definitions of job and worker flows. Section 5 presents the estimated flows on an aggregate level and section 6 presents estimated flows for three different age groups: 16–29 years, 30–49 years and 50–65 years. In Section 7 we present the results from a model that estimates the effects of age when controlling for other factors that might be important for job and worker flows. Finally, the paper ends with conclusions in Section 8.

2. Characteristics of the economy

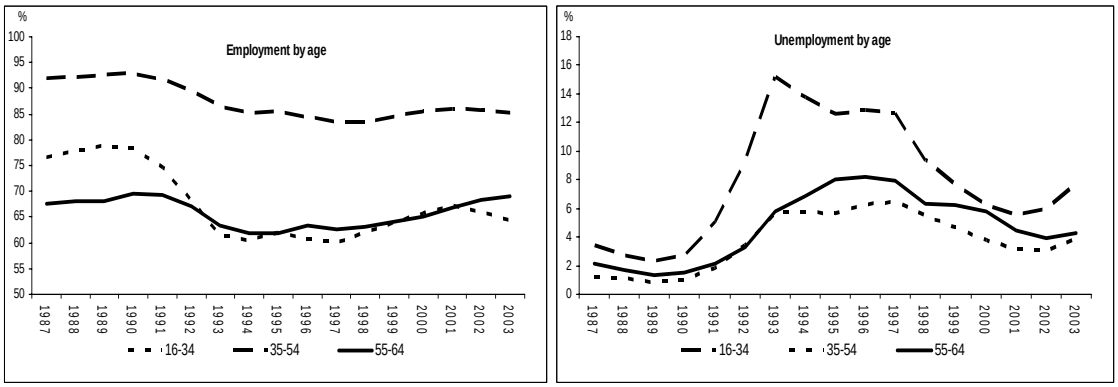
In the following, we present a brief overview of the Swedish labor market to serve as a background. Our study covers the period 1986-2002, which includes both upturns as well as downturns in the economy. Indeed, the period covers the deepest recession since the Great Depression in the 1930s.

During the period we study, total employment has increased and peaked in 1990 with 4,5 million employees, followed by a severe decline to 3,9 million employees in the end of the 90s. After 1997 employment has increased again. However, the change in employment has not been evenly distributed across age groups. The relative employment for different groups is presented in the left hand side of Figure 1. The middle aged group has the highest

employment rate, even though it has decreased somewhat between 1986 and 2003. For the youngest group (16-34) employment falls a lot during the beginning of the 90s, and does not start to recover until the end of the 90s. During the last years, employment has decreased again. Employment for the oldest group (55-64) has declined somewhat during the first part, but also recovered during the second part of the period. As a result, elderly have a higher employment rate in 2003 compared to the youngest group.

Unemployment increased from very low levels of around 1.5 percent in the end of the 90s to over 8 percent in 1993. At the beginning of the 2000s unemployment had fallen to around 4-5 percent. From the picture on the right hand side in Figure 1 we see that unemployment rates are higher for the youngest age group. In the beginning of the 90s the unemployment rate for 16-34 years old was about 15 percent, which is more than twice the unemployment rate among older age groups. Unemployment for the youngest group remained on a high level until the end of the 90s. For all groups, unemployment levels are higher in 2003, compared to 1987.

Figure 1 Employment and unemployment rates for different educational and age groups



Source: AKU, Statistics Sweden
Note: The age groups are different from those used in this study.

3. Data

Annual employer-employee linked data from IFAU/Statistics Sweden has been used to study job flows and worker flows. The basic observational unit underlying job and worker flows is the establishment: the physical location where the production takes place. A company or firm is a legal economic entity that encompasses one or more establishments.

The Swedish Employment Register contains the whole population aged 16 or above, in November each year. The connection to the employer of all those employed or self-employed in November is denoted by the identity numbers of the firm and the establishment where each individual had his or her main work. These identity numbers are taken from the Business Register (CFAR).[3] Establishment level data contains information on its geographical location, industry, total number of employees and form of ownership. In addition to information on the employer and the establishment, individual level data contains detailed information on various individual specific variables such as education, age, country of birth, annual earnings, and marital status.

Establishment-level data is preferred to firm-level data, since the former allows for observation of flows between establishments within one and the same firm. Nevertheless, we still fail to capture some flows within establishments, since aggregation at establishment level means that some of the turnover of jobs and workers is unaccounted for. Consequently, job gains and losses as well as hirings and separations within the establishment cancel each other out, while only those between establishments are accounted for. Although this is standard occurrence in the literature, it introduces a downward bias in the estimates of flows, as does the fact that we only observe the number of jobs and workers in November each year. The use of annual data means that we will not be able to observe if a job is created and destroyed, or whether a worker is hired and then quits the same establishment between the November of one year to the next. However, the annual flow measure provides a better indicator of permanent job reallocation activity. Moreover, since seasonal employment is low in November,[4] its selection as the month of observation means that the figures are not much affected by this phenomenon.

The establishment level panel was constructed by linking annual information for observed establishments over time.[5] By comparing successive years, existing establishments, entries and exits were defined in the following way: if a unit had a new establishment number or if the establishment number was not found during the preceding three years, the establishment was coded as an entry (new establishment); if a previous unit had disappeared and/or did not turn up during the following three years, the unit was considered to be an exit (closure). Units with the same establishment code as in the previous year were coded as existing estab-

[3] Distinguishing the births and deaths of establishments from changes in organizational structure, ownership or administrative identifiers may be a problem when CFAR identity number are used, resulting in overestimated job and worker flows, especially due to ”false” entries and exits.

[4] Davis et al. (1996) show that most of the job creation and job destruction captured by quarterly figures reflect establishments-level employment changes that are revised within a year, and Burgess et al. (2000) found that over 20 per cent of employment spells dissolves within a quarter.

[5] Note that we are not following workers over time, the basic observational unit is the establishment.

lishments (survivors). The majority of the establishments, around 87 percent, had information for all years they existed. Those establishments where annual information was missing for only one or at most two successive years were treated as continuing. Finally, establishments where annual information were missing for more than 2 successive years (around 2 percent of them) were coded as closures and as new establishments when reappearing.

Some additional restrictions were also applied. Firstly, the analysis considers only establishments that, on average, had at least 5 employees during the establishment's observation period. This restriction might mean that reported job and worker flows will be somewhat biased downwards, since smaller establishments tend to be more volatile with respect to employment. Secondly, employees with several employers have been linked only to their main employer, the employer from whom they have received the highest salary. Thirdly, employees with annual earnings less than one base amount[6] have been excluded. Due to lack of information in the data we can not distinguish between workers with full-time or part-time jobs. Workers, as such, are given the same weight as long as the earnings restriction is fulfilled.

After data cleaning and exclusions due to restrictions, annual information regarding approximately 110 000 establishments and 3 000 000 employees remained. The data consists of all establishments and their employees in Sweden aged 16–64 years for the period 1986–1989, and 16–65 years for the period 1990–2002. The strength of the data is the combination of detailed employee and establishment information and the very long observation period, covering both a deep economic downturn and a subsequent recovery period. Until now, such detailed data has not been used in analyzing job and worker flows for the Swedish labor market.

4. Concepts

Changes in employment are a result of changes in the supply and demand of labor. Compared to the extensive theoretical and empirical research that has been conducted on labor supply, much less has been related to labor demand. The most important explanation for this is probably the difficulty in obtaining relevant data on establishments and firms. However, since the 1990s, there have been a number of international studies using large linked employer-

[6] The amount differs across years. During the period studied, one base amount varied between 23 300 SEK in year 1981 and 37 900 SEK in year 2002. The base amount corresponded in 2002 to slightly less than two monthly average full-time salaries.

employee data sets. Studies of several countries have shown that establishments are heterogeneous and that considerable job creation and job destruction flows co-exist at all phases of the business cycle and in all sectors. Some studies have covered both job flows and worker flows. They also find considerable numbers of hirings and separations taking place simultaneously. However, the research in this area is still relatively new.

The study of flows is important in many aspects. Higher rates of job creation and destruction mean larger numbers of workers are compelled to shuffle between jobs and, most likely, there is a greater incidence of unemployment.[7] For a given net growth rate, higher rates of job creation make it easier for displaced workers and labor market entrants to find employment, and higher rates of job destruction imply less job security for employed persons.

4.1 The concept of job flows

We follow the conventions adopted by Davis & Haltiwanger (1990, 1992) regarding the definitions of job creation and job destruction rates. A job means an employment position occupied by a worker. We use net employment changes as a measure of the business cycle.

Let $E_{(i,t)}$ be employment at establishment *i* in year *t*. Then "job creation" (JC) and "job destruction" (JD) are defined as:

$$JC_{(i,t)} = E_{(i,t)} - E_{(i,t-1)} = \Delta E_{(i,t)} \qquad \text{if } \Delta E_{(i,t)} > 0 \qquad (1)$$

$$JD_{(i,t)} = E_{(i,t)} - E_{(i,t-1)} = -\Delta E_{(i,t)} \qquad \text{if } \Delta E_{(i,t)} < 0 \qquad (2)$$

The size of the establishment in year *t* is defined as the average employment of the two years *t* and *t*-1. That is

$$\text{Establishment size} = X_{(i,t)} = \tfrac{1}{2}(E_{(i,t)} + E_{(i,t-1)}) \qquad (3)$$

Dividing JC and JD by the average employment, X, gives us the job creation rate (JCR) and the job destruction rate (JDR).

JCR is the sum of all jobs created by new establishments (ENTRY) and by expanding establishments (EXP), that is, establishments increasing the number of employees between *t*-1 and *t*, divided by total employment. The $JCR_{(t)}$ is defined as:

[7] Davis et al. (1996), p.11.

$$JCR_{(t)} = \sum_{i \in I_t} \left(\frac{\Delta E_{(i,t)}}{X_{(t)}} \right) \text{if } \Delta E_{(i,t)} > 0 \quad (4)$$

$$X_{(t)} = \sum_{i \in I_t} X_{(i,t)}, \; I_t = \text{all establishments in year } t. \quad (5)$$

JDR is the sum of all jobs destroyed by closing establishments (EXIT) and by contracting establishments (CONT), that is, establishments reducing their number of employees between *t*-1 and *t*, divided by total employment. The $JDR_{(t)}$ is defined as:

$$JDR_{(t)} = \sum_{i \in I_t} \left(\frac{-\Delta E_{(i,t)}}{X_{(t)}} \right) \text{if } \Delta E_{(i,t)} < 0 \quad (6)$$

The *net employment change* (NET) is the difference between the job creation rate and job destruction rate:

$$NET_{(t)} = JCR_{(t)} - JDR_{(t)} \quad (7)$$

The *job reallocation rate* (JRR) is the sum of the creation rate and the destruction rate, and is a measure of employment reshuffle across establishments:

$$JRR_{(t)} = JCR_{(t)} + JDR_{(t)} \quad (8)$$

4.2 The concept of worker flows

The flows of workers are measured as the number of workers moving in and out of establishments, i.e. ”hirings” and ”separations”.[8] Note that there may be hirings and separations even if the net job change at the establishment is zero.

Both individuals employed to replace separations, and those employed in new jobs are defined as hirings. Let $H_{(i,t)}$ denote the number of workers at the establishment in year *t* who did not work there in year *t*-1. The *hiring rate* ($HR_{(t)}$) can then be defined as:

[8] We follow the definitions by Burgess et al. (2000).

$$HR_{(t)} = \sum_{i \in I} \left(\frac{H_{(i,t)}}{X_{(t)}} \right) \quad (9)$$

Separations may be voluntary (quits) or involuntary (lay-offs). Let $S_{(i,t)}$ denote the number of workers at the establishment in year *t*-1 who do not work there in year *t.* The *separation rate* ($SR_{(t)}$) can then be defined as:

$$SR_{(t)} = \sum_{i \in I} \left(\frac{S_{(i,t)}}{X_{(t)}} \right) \quad (10)$$

The difference between the hiring and separation rates is the same as the difference between job creation and job destruction rates, which is the net employment change. That is:

$$JCR_{(t)} - JDR_{(t)} = HR_{(t)} - SR_{(t)} = NET_{(t)} \quad (11)$$

The *worker reallocation rate* ($WRR_{(t)}$) is defined as:

$$WRR_{(t)} = HR_{(t)} + SR_{(t)} \quad (12)$$

The relation between worker flows, job flows and changes in employment can be described as follows:

$$WRR_{(t)} \geq JRR_{(t)} \geq NET_{(t)} \quad (13)$$

The so-called *churning rate* ($ChR_{(t)}$) is the difference between worker flows and job flows. It shows the volume of worker flows in excess of what is needed to meet job flows and can be initiated by either the employer or the employee. The churning rate is defined as:

$$ChR_{(t)} = WRR_{(t)} - JRR_{(t)} \quad (14)$$

4.3 Flows across age groups

So far, jobs and workers have been treated as homogeneous, but job and worker flows are not evenly distributed across groups. The type of workers who lose their jobs at contracting and closing establishments, need not be the same as those who get the new jobs at new and expanding establishments. In order to take this heterogeneity into account, we examine the age of workers who get new jobs and of those who lose old ones. We break down the flows further into three age groups: 16–39 years old, 30–49 years old and 50–65 years old.

For each group of individuals, the sum of the changes in employment between two consecutive years at an establishment is divided by the total employment for the same group of individuals. The aggregate job creation rate of age group *j* is the aggregate increase in jobs for group *j* for establishments expanding in group *j*, divided by the number of jobs for group *j*. The job destruction rate is defined in a similar way by the aggregate reduction of age group *j* using the mean of the present and previous size of group *j* as the denominator.

$$\mathrm{JCR}_{(j,t)} = \sum_{i \in I_t} \left(\frac{\Delta E_{(i,j,t)}}{X_{(j,t)}} \right) \text{if} \;\; \Delta E_{(i,j,t)} > 0 \tag{15}$$

$$\mathrm{JDR}_{(j,t)} = \sum_{i \in I_t} \left(\frac{-\Delta E_{(i,j,t)}}{X_{(j,t)}} \right) \text{if} \;\; \Delta E_{(i,j,t)} < 0 \tag{16}$$

$$\mathrm{X}_{(i,j,t)} = \tfrac{1}{2}(\mathrm{E}_{(i,j,t)} + \mathrm{E}_{(i,j,t-1)}), \;\; X_{(j,t)} = \left(\sum_{i \in I} X_{(i,j,t)}\right) \tag{17}$$

The hiring rates and separation rates for group *j* of workers are defined in a similar way:

$$\mathrm{HR}_{(j,t)} = \sum_{i \in I} \left(\frac{H_{(i,j,t)}}{X_{(j,t)}} \right) \tag{18}$$

$$\mathrm{SR}_{(j,t)} = \sum_{i \in I} \left(\frac{S_{(i,j,t)}}{X_{(j,t)}} \right). \tag{19}$$

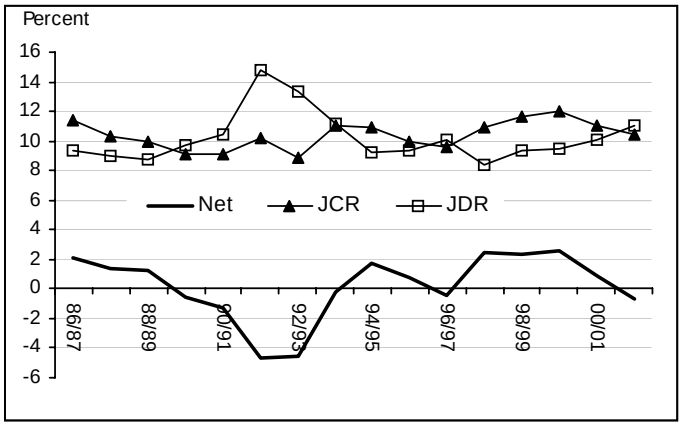
The rates are presented separately for establishments that enter the market, that increase employment, that reduce employment, that have the same number of people working between two years (stable establishments) and, finally, that exit the market.

5. Job flows and worker flows in Sweden 1986 to 2002

Studies of several countries have shown that establishments are heterogeneous and that considerable job creation and job destruction flows co-exist at all phases of the business cycle and in all sectors. Some studies have covered both job flows and worker flows. They also find considerable numbers of hirings and separations taking place simultaneously.

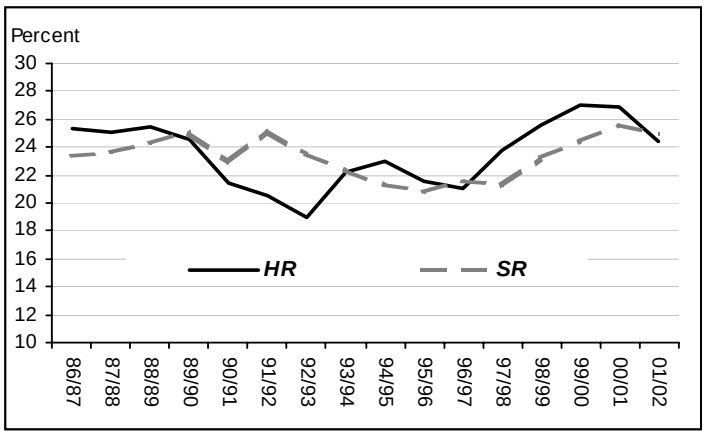
Figure 2 shows the annual rates of job flows from 1986/87 to 2001/02. In Sweden, net employment increased by an average of 0.2 percent each year, but with large variations between single years from 2.6 percent 1999/00 to -4.6 percent 1991/92.[9] The net employment change results from large creations and destructions of jobs that occur simultaneously. Each year, on average 10.4 percent of all jobs were created and 10.2 percent were destroyed.

Figure 2. Annual rates of total job destruction, job creation and net employment, 1986/87 to 2001/02, percent



Source: The IFAU data base.

Figure 3. Total annual hiring and separation rates, 1986/87 to 2001/02, percent



Source: The IFAU data base.

[9] Detailed numbers for Figures 2 and 3 can be found in Gartell, Jans & Persson (2007).

The difference between job flows and worker flows consists of the number of workers leaving their jobs and being replaced by other workers. Figure 3 reveals the figures for worker flows in Sweden during the period 1986/87-2001/02. Note that the difference between hiring and separation rates for each year in Figure 3 is the same as the difference between job creation and job destruction rates for each year in Figure 2, meaning the net employment rate.

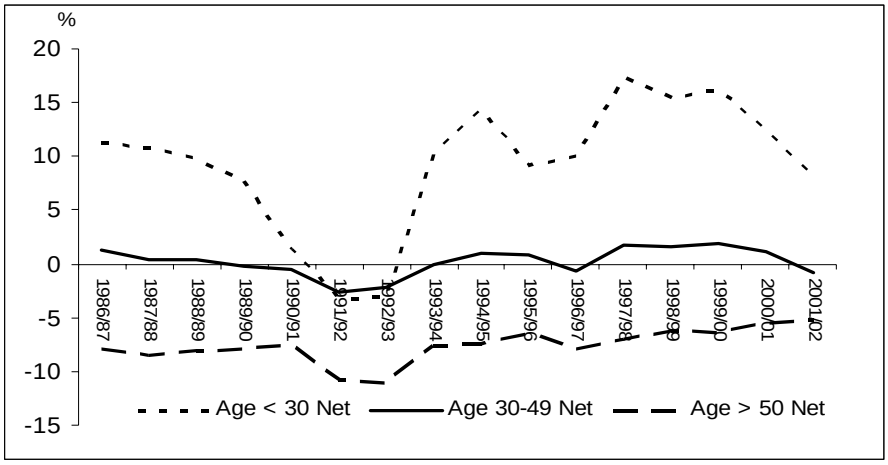
Average hirings amount to 23.5 percent of total employment each year, and separations amount to 23.3 percent, both somewhat more than twice the job creation and job destruction rates. On average, workers who start and quit in the course of a year (the worker reallocation rate), constitute to 46.9 percent of total employment.

6. Job and worker flows for different age groups

Figure 4 shows the annual changes in net employment for three different age groups: the earliest part of working life, 16-29 years, prime age working life, 30-49 and later part of working life, 50-64 years. As can be seen from the figure, the net employment rate has not been evenly distributed across age groups, instead there are large variations in the annual net employment changes between, as well as within, the age groups. Also, annual employment fell rather dramatically among the oldest workers during the whole period, not only during the recession years in the beginning of the 90s; the average net employment rate was minus 6.5 percent.[10] This is a large decline, especially compared to the middle aged group for which net employment showed a very small increase, 0.2 percent per year. If we consider those aged 16-29 year, annual net job employment rates are on average more than 9 percent, but with huge variations between single years. The dramatic consequences of the economic recession are well reflected in the figure. The recession especially affects the youngest and the oldest, but young workers seem to be more able to recover quickly during an economic upturn. In comparison, the middle-aged seemed to have been rather unaffected by the recession.

[10] The share of individuals in the age group 50-65 years old has increased during the studied period. However, the average net employment rate has been negative. This is explained by that we follow establishments and not individuals, i.e. new individuals enter each group and some individuals leave each group between years. When comparing two consecutive years, e.g. 1986 and 1987, we consider the age in 1986. Next, we compare the years 1987 and 1988 considering the age in 1987. Consequently, net employment rates for a group between years can be negative even though the number of individuals gets larger. All numbers are relatively to the average size of the group for the two consecutive years.

Figure 4. Net employment changes, all establishments, 1986/87 to 2001/02, percent



Source: The IFAU data base.

6.1 Job flows

In Figure 5 job creation and job destruction rates are shown for the three different age groups, while Table 1 shows average values for the period studied.[11] The surprising finding, when comparing the groups, is the large difference in job creation rates while job destruction rates are much more similar across the age groups.

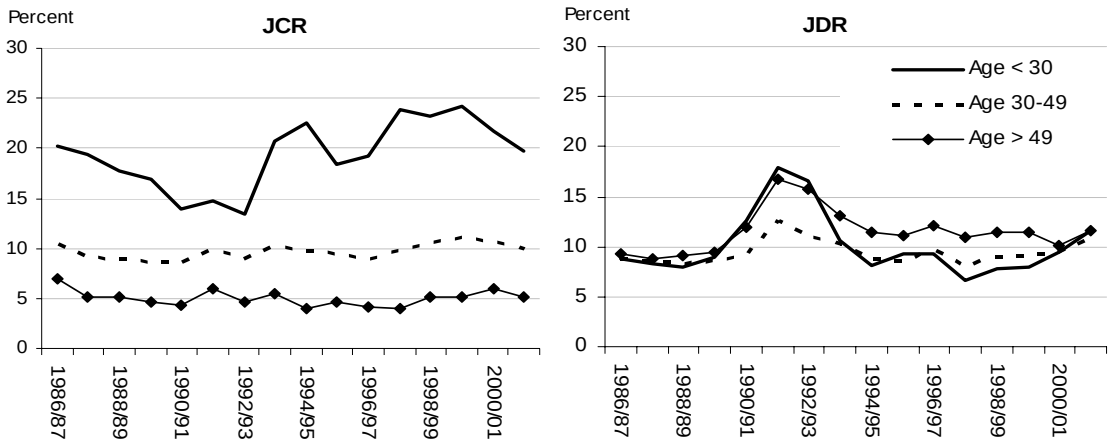
The youngest group has the highest job creation rate. During a typical year 2 out of 10 jobs were created and 1 out of 10 jobs were destroyed. In other words, for every job destroyed, around two new jobs were created. For the oldest group, the relation is the opposite. For each job created, nearly 3 jobs were destroyed.

During the worst years, nearly 18 percent of all jobs for the youngest workers were destroyed, while job destruction rates amounted to between 7 and 8 percent before and after the economic downturn. Job creations rates fluctuates a lot, between 13.4 percent 1992/93 and 24.2 per cent 1999/00. Since more jobs have been created than destroyed, the average net employment rate is as high as 9.2 percent each year.

Job flows for middle-aged are more stable than for younger and older workers. On average, 9.6 and 9.4 percent of all jobs were created and destroyed for middle-aged workers. The variation in the flows is relatively small, and the flows are surprisingly stable even during the recession years.

[11] Annual numbers for Figures 4 and 5 are presented in Tables A1, A3 and A5 in Appendix.

Figure 5. Job flows for different age groups, 1986/87 to 2001/02, percent



Source: The IFAU data base.

Table 1. Net employment change, job creation rate, job destruction rate and job reallocation rate, totally and for age groups, average of 1986/87 to 2001/02, percent

	NET	JCR	JDR	JRR
Total	0.20	10.42	10.22	20.64
Less than 30 years old	9.21	19.24	10.02	29.26
Between 30 and 50 years old	0.19	9.62	9.43	19.05
At least 50 years old	-7.61	4.59	12.20	16.79

Turning to the oldest workers, job creation rates are very stable and low. On average, job creation rates amounted to less than 5 percent of all jobs for these workers. Job destruction rates on the other hand, peaked during the recession years and then returned to lower, but still quite high levels. Job destruction rates increased from around 12 percent before, to nearly 17 percent during the recession, and then stayed on around 11 percent. During the whole period job destruction rates clearly exceeded job creation rates. As a result, the employment decreases on average with more than 7 percent each year.[12]

6.1.1 Job flows and the business cycle

Whether flows are countercyclical or procyclical have been discussed in previous studies. Gartell et al. (2007) find that job reallocation rates for the whole labor market are countercyclical.[13]

[12] The results that job creation rates are lower and job destruction rates are higher for the oldest group than for other age groups, and that the job reallocation rate is larger for younger and prime-aged workers than for older workers is also found in Gielen & van Ours (2006).

[13] However, when disaggregated for different educational groups the countercyclical behavior was only found among those with the lowest educational level. For workers with the highest education job reallocation rates were even found to be procyclical.

Table 2 shows the correlations between net employment rates, job creation rates, job destruction rates and job reallocation rates. The results are sensitive to if the labor force is treated as homogeneous or heterogeneous. The countercyclical pattern found for the whole labor market, is only found for the oldest age group, those age 50 to 65 years. The patterns for the other age groups are acyclical, that is the correlation between job reallocation and net employment is not significantly different from zero. The differences between groups are down to the fact that job destruction rates during downturns for older workers have not been compensated by higher job creation rates during good times.

According to Garibaldi (1998) this countercyclical pattern implies that firing costs (i.e. separation costs) are lower for older than for younger and prime-aged workers. This might be explained by that older worker are over-paid and/or have a different skill set than younger workers, see Lazear (1995) and Abowd et al. (2007).

Table 2. Pearson correlation coefficients, p-values in parenthesis

	Less than 30 years old	30-49 years old	At least 50 years old
(JRR,NET):	0.10 (0.711)	-0.40 (0.125)	-0.67 (0.004)
(JC,DC):	-0.77 (0.005)	0.13 (0.634)	0.32 (0.220)
(JC,NET):	0.94 (0.000)	0.47 (0.067)	0.14 (0.596)
(JD,NET):	-0.94 (0.000)	-0.82 (0.000)	-0.89 (0.000)
V(JD)/V(JC):	0.9	2.3	4.7

6.2 Worker flows

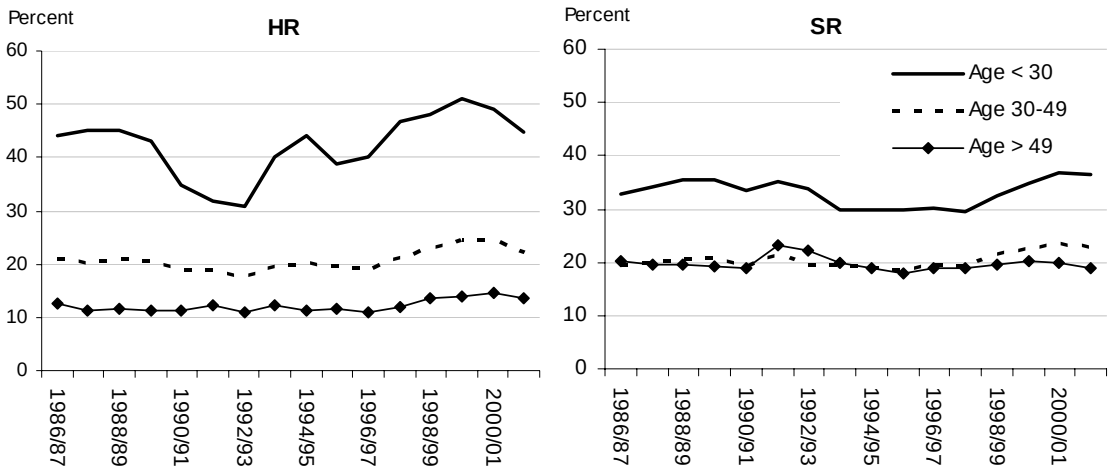
Worker flow rates are more than twice as high as job flow rates, resulting in high worker reallocation rates, which can be seen from Table 3. On average 23.5 percent of the workers were hired by an establishment each year, and 23.3 percent separated. Almost half of the work force either separated or was hired during two consecutive years. The flows differ a lot across age groups. Both hiring and separation rates are highest for the youngest workers. This is also found in Gielen & van Ours (2006). On average, more than 75 percent of the youngest workers either separated or were hired during two consecutive years. Consequently, every year, there is an enormous amount of workers being re-shuffled between establishments. As seen from Figure 6 below, there are also huge variations between single years, in particular in hiring rates that fluctuate much more than separation rates for the youngest age group.

The number of hired workers for each job created is quite similar for the different age groups, between 2.1 for the middle-aged workers to 2.6 for the oldest age group. The number of workers that separated compared to the number of destroyed jobs fluctuates more, from 1.6 separations for each job destroyed among the oldest to 3.3 separations for each job destroyed among the youngest.

Worker reallocation rates decrease rather sharply with age. The average worker reallocation rate for the middle-aged is 41.2 percent, that is, more than two out of five workers either separated or become hired each year. The 41.2 percent is the sum of 20.7 percent of the workers being hired and 20.5 percent of the workers being separated. Both hiring and separation rates are very stable and nearly of the same size during the whole observed period, resulting in very small net employment changes for the 30-49 years old.

The average worker reallocation rates for the oldest workers are 32.0 percent, less than the reallocation rates for the other age groups. On average, hiring rates amounted to 12.2 percent and separation rates to 19.8 percent. Separation rates thereby constitute the main part of worker reallocation rates, that is, more workers are being separated than hired. However, hiring rates amounting to more than 12 percent means that a non-trivial amount of workers in older ages are being hired each year. Considering the number of institutions and regulations on the labor market that in a number of ways hinder, or make it rather risky, for older workers to change employer, these rates are surprisingly high. The even higher separation rates do, however, imply that the competition for jobs available for older workers is rather high.

Figure 6. Worker flows for different age groups, 1986/87 to 2001/02, percent



Source: The IFAU data base.

Table 3. Net employment change, hiring rate, separation rate, the ratio of hiring and job creation rates, the ratio of separation and job destruction rate and the reallocation of workers, totally and for age groups, average for 1986/87 to 2001/02, percent

	NET	HR	SR	HR/JCR	SR/JDR	WRR
Total	0.20	23.54	23.34	2.26	2.28	46.88
Less than 30 years old	9.21	42.36	33.14	2.20	3.31	75.50
30-49 years old	0.19	20.70	20.50	2.15	2.17	41.20
At least 50 years old	-7.61	12.18	19.78	2.65	1.62	31.96

To conclude, both job and worker flows are much higher for younger workers than for older. If the flows reflect a matching process that takes place between employers and workers, the flows suggest that a lot of matching takes place during younger ages and that better matches, likely to occur more often in the middle ages, is associated with a general decrease in the reallocation flows.[14]

Even though institutions and regulations on the labor market such as seniority rules may make it more difficult for individuals to change employer later in life, some workers do change employer even at older ages, but the mobility decreases sharply with age.

6.2.1 Worker flows and the business cycle

While the reallocation of jobs is larger during downturns, this does not hold for reallocation of workers. For the whole labor market worker reallocation is found to be acyclical. The correlation between worker reallocation and net employment change is positive but insignificant (see Gartell et al. 2007 for figures). One interpretation is that people are very careful not to leave their jobs during bad times: they only leave when their jobs disappear and they have no choice. Instead, they make the move to quit and find better jobs during upturns.

Table 4 presents the correlations for different age groups. The worker reallocation is found to be procyclical for the youngest group and acyclical for the other age groups. The procyclical pattern for the youngest group implies that more young people are hired and separated during upturns than during downturns. Also, cyclical adjustments occur more through fluctuations in hiring rates for young and prime-age workers than for older workers, while for old workers separation rates fluctuates more than for the other age groups.

[14] The pattern of decreasing reallocation rates by age supports the theory of turnover and job matching by Jovanovic (1979). The model predicts that each worker's separation probability is a decreasing function of his job tenure. This is because a mismatch between a worker and his employer is likely to be detected early on rather than later.

There is a positive correlation between the churning rate and the net employment rate for all groups, meaning that the share of the reallocation that takes place in excess of what is needed to mach job creation and destruction is larger during upturns than during downturns.

Table 4. Pearson correlation coefficients, p-values in parenthesis

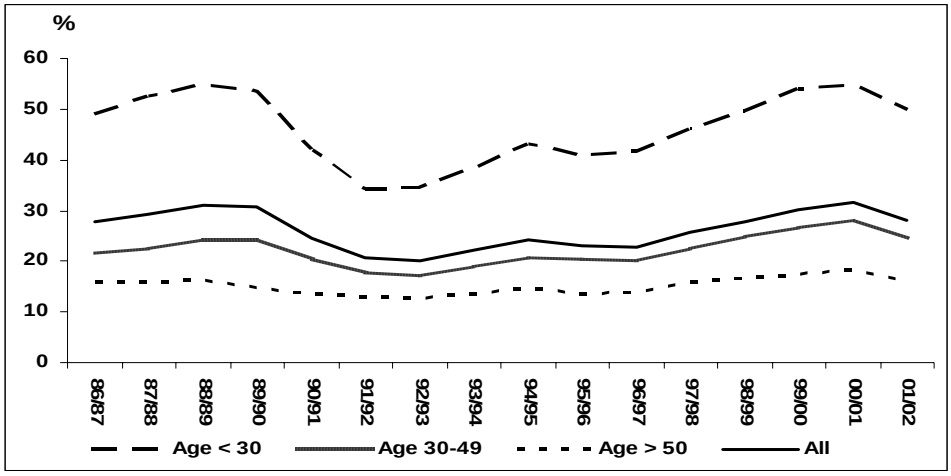
	Less than 30 years old	30 -49 years old	At least 50 years old
(WRR,NET):	0.69 (0.003)	0.42 (0.105)	-0.15 (0.576)
(ChR,NET):	0.64 (0.008)	0.63 (0.008)	0.67 (0.004)
(HR,SR):	0.93 (0.000)	0.75 (0.127)	0.74 (0.001)
(HR,NET):	0.91 (0.000)	0.78 (0.001)	0.59 (0.020)
(SR,NET):	-0.31 (0.246)	0.01 (0.956)	-0.72 (0.002)
V(SR)/V(HR):	0.2	0.5	1.3

6.3 Churning rates

The churning rate of age groups is presented in Figure 7. The churning show the volume of worker flows in excess of what is needed to match job flows. The rate is given by the difference between the worker reallocation rates and the job reallocation rates. This rate is high: on average 26 percent for all workers. Much of the mobility that takes place on the labor market can therefore not be explained by the reallocation of jobs. As seen from Figure 7 churning rates are higher for the youngest group, on average 46 percent, with quite large variations between single years. The high rates found means that many more young workers are being re-shuffled between establishments than necessary to match the job flows.[15]

[15] The figures for different age groups are presented in Tables A2, A4 and A6 in Appendix.

Figure 7. Churning rate for different age groups, average for 1986/87 to 2001/02, percent



The corresponding figures for the other two age groups are 22.1 percent and 14.7 percent, less than half the churning rates for the youngest. Thus, mobility that is not motivated by fluctuations in the number of jobs decreases with age. Most likely, the high churning rates reflects not only less employment security for younger workers but also the job matching process that takes part on the labor market.

During the last 20 years the numbers of highly educated workers have increased dramatically and especially among the youngest. Low educated workers are overrepresented among the oldest. Therefore, it is very likely that the effects found for different age groups may at least partly depend on educational level, something that is hard to separate for in these flows. In the next chapter we separate the educational and age effects.

7. Age effects in a multinomial logistic model

To test the robustness of the results we use a multinomial logistic model. Estimating this model allows us to control for different factors investigating the importance of age for the reallocation of labor. There are many factors that are likely related to both age and the reallocation of labor; two obvious controls are education and tenure. Further, observable characteristics as country of birth, sex, sector and size of establishment are controlled for.

7.1 The model

The multinomial logistic model estimates the effects of explanatory variables on a dependent variable with unordered response categories (see Liao, 1994; Aldrich & Nelson, 1984). The probability, *P*, of being in outcome *j* is given by the equation;

$$P(Y_i = j) = \frac{\exp\left(\sum_{k=1}^{K} \beta_{jk} X_k\right)}{1 + \sum_{j=1}^{J-1} \exp\left(\sum_{k=1}^{K} \beta_{jk} X_k\right)} \qquad \text{for j=1,2,…,J-1}$$

The dependent variable Y_i consist of different mutually exclusive states, *j*. The relative risk ratio Y=*j* to the base category is given by:

$P_j / P_S = \exp(\beta_j X)$,

where *s* is the reference category. The multinomial logistic model is estimated for each of the included par-wise years, covering the period from 1986/87 to 2001/02. The analysis is restricted to existing and continuing establishments. New establishments as well as establishments that were closed down during each observed two year period have been excluded from the analysis.

The worker flows have been divided into three different groups: *new entrants*, *changed employer* and *leavers*. The first group consists of workers that during each observed two-year period had employment in the latter but not in the preceding year. The main part of these workers is new entrants on the labor market, but some of them may have been unemployed, in labor market programs or outside the labor force. The second group consists of workers that changed employer between the observed two-year periods. The third group consists of workers who had employment the first observed year but not in the following year. Unfortunately, there is no information in data about the reasons why the workers separated from their jobs. Separations includes both voluntary and involuntary (job displacements) separations, workers with temporary employment who did not receive prolonged employment, early retirements and to some extent also retirements. Not to be able to distinguish between different types of separations is a limitation. However, the main focus is on the differences in flows and how those differences affect the restructuring process. More

precisely, we want to examine characteristics of workers hired to either replace workers that where separated from the establishments or to fill new jobs created at the establishments. The base category, to which the workers flows are related, is stayers i.e. workers employed at the same establishment during each observed two-year period.

In short, the analysis examines how different parts of the worker flows relate to the stock of continuously employed, and to what extent this relation can be explained by observable covariates. The analysis makes it possible to examine if the results from the previous analysis holds controlling for more observed characteristics of the worker flows on the individual and establishment level.

7.2 Results

Figure 8 shows the estimated odds ratios for workers in different age groups: 16-24, 25-29, 40-49, 50-59 and 60-65, compared to those continuously employed aged 30-39 years. An odds ratio higher/lesser than 1 implies a risk higher/lower compared to the reference group (here stayers 30-39 years old). The estimates are obtained after controlling for educational level, country of birth, sex, tenure, sector and size of establishments. Tenure is, for obvious reasons, not controlled for looking at new entrants.

The estimated odds ratios for new entrants are very high for the youngest age group. Young workers are more likely to establish themselves on the labor market, but less likely to be continuously employed. The economic downturn in the beginning of the 1990s and the second, milder, downturn in the middle of 1990s are reflected in temporarily lower hiring rates.

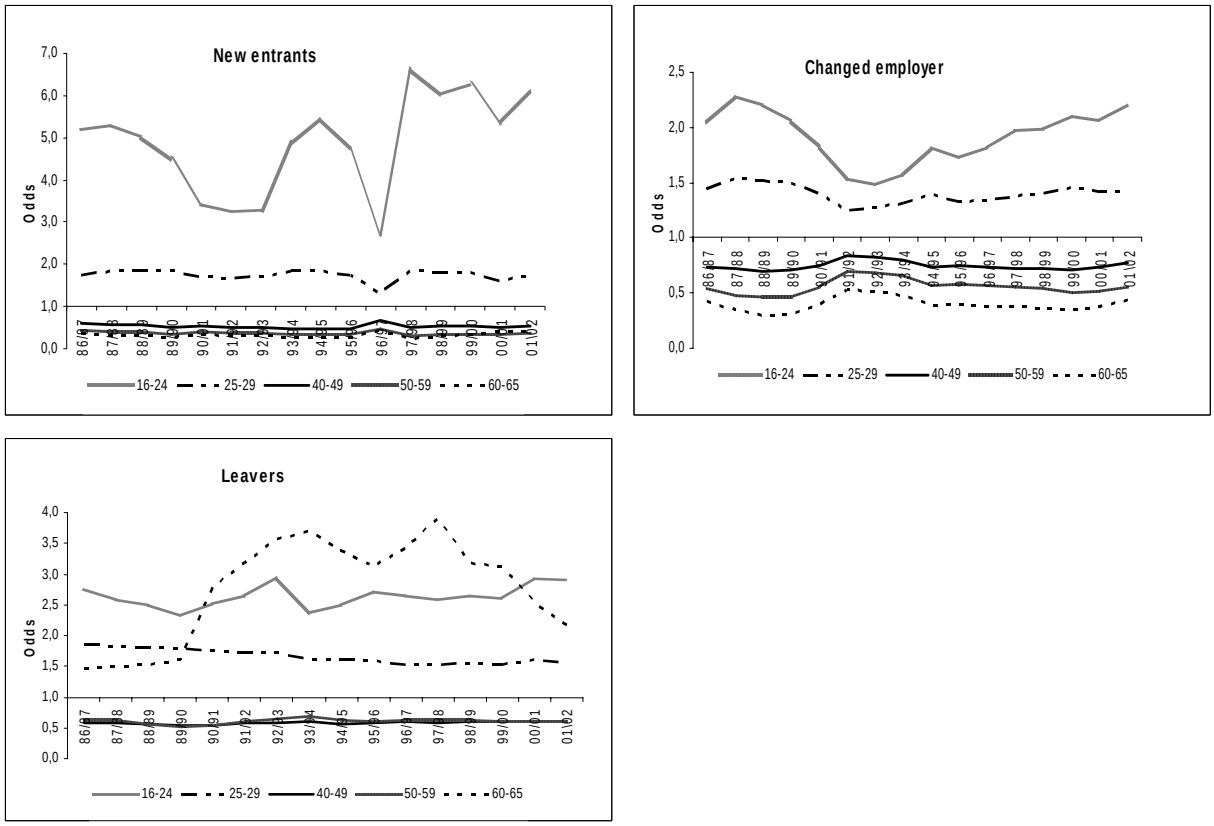
Workers older than 30-39 years (the reference group) are less likely to be hired if not employed the previous year; indicating that there might be difficulties for older workers to get new employment if they become unemployed or get out of labor force for some other reason. Estimated odds ratios for those who changed employer, either involuntarily or voluntarily, are highest for those up to thirty years. The odds ratios for changing employer after the age of 40 are relatively low. The last element of Figure 8 shows the estimated odds ratios for leaving an employer and not receiving a new job. The odds are highest for the youngest and the oldest group.

According to the seniority rules, when job displacement is in place, the last hired should be the first to go. It is therefore not surprising that we find higher risks for younger workers to

leave relative to those in the reference group (aged 30-39 years) and older workers. Older workers are more likely to be established on the labor market, with several years of service behind. The relatively higher risks for the oldest group (aged 60-65 years) are at least partly due to retirements and partly due to involuntarily leaves. As mentioned earlier deviations from the seniority rules have been rather common in the Swedish labor market. These results confirm the predictions made by Lazear (1995) that both younger and older workers will be laid off before prime-aged workers and previous results found by Calleman (1999) and Jans (2002).

Further, the relative lower estimated odds ratios of changing employer after age 40 are expected for the same reason. Hence, it is more costly to change employer if you have several years of service behind, given the seniority rules.

Figure 8. Estimated odds ratios showing the excess/under risk for workers belonging to different age groups for becoming new entrants, change employer or leave employment relative to stayers



Note: the reference category is Swedish male aged 35-44, with upper secondary education, working in an establishment with 25-100 employees. The base category is: *stayers*, workers employed at the same establishment during each observed two-year period.

The results presented in this section confirm the results presented in the previous section. Further, this section provides stronger evidence for age being an important factor, since age has great effects also when controlling for factors as education and tenure.

8. Conclusions

Job and worker flows are lower for older than for younger workers. Job reallocation rates decreases with age which is mainly explained by large differences in job creation rates while job destruction rates are much more similar across age groups. Both hiring and separation rates decreases with age which means that also worker reallocation rates are considerably lower for older than younger workers.

The results of job and worker flows suggest that the matching process between jobs and workers are important, something that is shown in the high flow rates found for the youngest workers. In the middle age group most workers are likely to have made a good match, a match that suits both the employer and the worker well, resulting in lower flow rates. The lower rates found for the elderly workers are probably closely linked to the Swedish institutions that regulate and influence the employment protection on the labor market, and not only the result of a good matching. Further, the results correspond to those found in data from the Netherlands.

Some previous studies have found job reallocation to be countercyclical, suggesting that downturns are periods of restructuring the establishment. Our results confirm those previous studies on an aggregate level and support the model by Mortensen and Pissarides (1994) predicting job reallocation to be countercyclical. According to Garibaldi (1998) this countercyclical pattern implies that firing costs (i.e. separation costs) are low. However, when examining the correlations between different age groups the countercyclical behavior was only found among the oldest workers. For the youngest and the middle-aged workers job reallocation rates were found to be acyclical. Contrary to expected this implicate that firing costs are lower for older than for younger workers, which might be explained by that older worker are over-paid and/or have a different skill set than younger workers (Lazear, 1995; Abowd et al., 2007).

While the reallocation of jobs is found to be larger during downturns on the aggregate level, this does not hold for reallocation of workers. Instead worker reallocation exhibits an acyclical pattern. The number of people hired is larger during upturns while the number of

people leaving displays no cyclical pattern. One interpretation is that people are very careful not to leave their jobs during bad times and only leave when they have to, preferring to quit during upturns to find better jobs. There are some differences between age groups. Worker reallocation for the youngest workers shows a strong procyclical pattern due to both more hirings and separations during up-turns. The oldest workers, on the other hand, have significantly more separations during downturns.

The effects found for different age groups may at least partly depend on their educational level, something that is hard to separate for in these flows. Consequently multinomial logistic models were estimated to separate effects of age and education. Even when controlling for educational level, among various other variables, the estimated age effects are substantial.

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APPENDIX

Table A1. Job reallocation and its components, 1986 to 2002. Less than 30 years old. Percent

		JCR			JDR				
	Net	Entry	Expa.	Total	Exits	Contr.	Total	Stable	JRR
1986/87	11.25	3.63	15.60	19.70	3.17	5.28	8.45	0.47	28.16
1987/88	10.86	3.44	14.86	18.78	2.30	5.62	7.92	0.48	26.70
1988/89	9.69	3.64	13.36	17.46	2.08	5.70	7.77	0.46	25.23
1989/90	7.60	3.45	12.22	16.20	1.90	6.70	8.61	0.53	24.81
1990/91	1.31	3.17	10.43	13.89	2.49	10.09	12.58	0.29	26.47
1991/92	-3.19	4.28	10.26	14.77	3.34	14.62	17.97	0.24	32.74
1992/93	-3.05	3.31	9.97	13.45	3.10	13.40	16.50	0.17	29.95
1993/94	10.24	3.97	16.33	20.78	2.63	7.90	10.53	0.47	31.31
1994/95	14.33	3.45	18.43	22.47	2.15	5.98	8.14	0.59	30.60
1995/96	9.07	3.39	14.58	18.41	1.94	7.40	9.34	0.45	27.75
1996/97	9.98	3.16	15.66	19.30	2.11	7.20	9.32	0.47	28.61
1997/98	17.23	3.11	20.05	23.83	1.78	4.82	6.59	0.67	30.42
1998/99	15.51	3.75	18.91	23.26	2.25	5.50	7.75	0.61	31.01
1999/00	16.24	4.28	19.32	24.16	2.47	5.45	7.92	0.57	32.09
2000/01	12.25	3.54	17.40	21.58	2.41	6.93	9.34	0.64	30.92
2001/02	8.11	3.03	16.17	19.75	3.52	8.11	11.64	0.55	31.39
Aver.	**9.21**	**3.54**	**15.22**	**19.24**	**2.48**	**7.55**	**10.02**	**0.48**	**29.26**

Table A2. Worker reallocation and its components, 1986 to 2002. Less than 30 years old. Percent

		Hiring rates					Separation rates						
	Net	Entry	Exp.	Cont.	Stable	Total	Exit	Exp.	Cont.	Stable	Total	WRR	Chr
1986/87	11.25	3.63	27.37	10.75	2.42	44.17	3.17	11.77	16.03	1.96	32.93	77.10	48.94
1987/88	10.86	3.44	28.59	11.94	2.53	45.04	2.29	12.26	17.57	2.05	34.18	79.22	52.52
1988/89	9.69	3.64	25.63	13.17	2.57	45.01	2.08	12.27	18.87	2.12	35.33	80.34	55.11
1989/90	7.60	3.45	22.52	14.36	2.63	42.96	1.90	10.29	21.06	2.10	35.36	78.32	53.51
1990/91	1.31	3.17	18.51	11.08	2.17	34.93	2.49	8.01	21.21	1.92	33.62	68.56	42.08
1991/92	-3.19	4.28	16.47	9.39	1.82	31.96	3.34	6.22	24.01	1.58	35.16	67.12	34.37
1992/93	-3.05	3.31	16.05	9.48	1.90	30.74	3.10	6.08	22.88	1.73	33.78	64.52	34.56
1993/94	10.24	3.97	24.43	9.40	2.25	40.05	2.63	8.09	17.30	1.78	29.81	69.86	38.55
1994/95	14.33	3.45	28.16	9.79	2.62	44.02	2.15	9.73	15.77	2.03	29.69	73.71	43.11
1995/96	9.07	3.39	23.68	9.30	2.50	38.86	1.94	9.11	16.70	2.05	29.79	68.65	40.90
1996/97	9.98	3.16	24.48	10.03	2.49	40.17	2.11	8.83	17.23	2.02	30.19	70.37	41.75
1997/98	17.23	3.11	31.09	9.92	2.74	46.86	1.78	11.04	14.74	2.07	29.63	76.49	46.07
1998/99	15.51	3.75	30.92	10.69	2.75	48.11	2.25	12.01	16.19	2.14	32.59	80.70	49.69
1999/00	16.24	4.28	32.42	11.68	2.80	51.19	2.47	13.11	17.14	2.23	34.94	86.13	54.05
2000/01	12.25	3.54	30.15	12.36	2.87	48.92	2.41	12.75	19.29	2.23	36.68	85.60	54.68
2001/02	8.11	3.03	28.23	10.81	2.67	44.74	3.52	12.06	18.92	2.12	36.62	81.36	49.97
Aver.	**9.21**	**3.54**	**25.54**	**10.88**	**2.48**	**42.36**	**2.48**	**10.23**	**18.43**	**2.01**	**33.14**	**75.50**	**46.24**

Table A3. Job reallocation and its components, 1986 to 2002. Between 30 and 49 years old. Percent

		JCR			JDR				
	Net	Entry	Expa.	Total	Exits	Contr.	Total	Stable	JRR
1986/87	1.30	2.93	7.25	10.18	3.33	5.53	8.88	-0.02	19.06
1987/88	0.38	2.66	6.34	9.00	2.37	6.21	8.62	-0.04	17.61
1988/89	0.32	2.82	5.92	8.74	2.04	6.34	8.43	-0.05	17.17
1989/90	-0.22	2.63	5.73	8.36	1.74	6.84	8.58	0.00	16.94
1990/91	-0.57	2.61	5.92	8.58	2.17	6.98	9.15	0.04	17.73
1991/92	-2.64	3.52	6.43	9.99	2.82	9.81	12.63	0.04	22.62
1992/93	-2.10	2.56	6.26	8.92	2.80	8.22	11.02	0.10	19.94
1993/94	-0.03	2.98	7.19	10.20	2.65	7.58	10.23	0.03	20.43
1994/95	1.06	2.46	7.33	9.80	2.25	6.46	8.74	-0.03	18.54
1995/96	0.83	2.80	6.59	9.42	1.84	6.74	8.58	0.02	18.00
1996/97	-0.71	2.34	6.51	8.87	2.14	7.45	9.59	0.02	18.46
1997/98	1.73	2.23	7.56	9.79	1.88	6.18	8.06	0.00	17.84
1998/99	1.57	2.77	7.83	10.60	2.47	6.55	9.03	-0.01	19.64
1999/00	1.92	2.83	8.25	11.08	2.56	6.58	9.15	-0.02	20.23
2000/01	1.12	2.67	7.90	10.57	2.35	7.10	9.45	0.01	20.02
2001/02	-0.83	2.55	7.32	9.87	3.43	7.27	10.70	-0.01	20.58
Aver.	**0.19**	**2.71**	**6.90**	**9.62**	**2.43**	**6.99**	**9.43**	**0.00**	**19.05**

Table A4. Worker reallocation and its components. 1986 to 2002. Between 30 and 49 years old. Percent

		Hiring rates					Separation rates					WRR	Chr
	Net	Entry	Exp.	Cont.	Stable	Total	Exit	Exp.	Cont.	Stable	Total		
1986/87	1.30	2.93	12.91	4.20	0.96	21.00	3.33	5.66	9.73	0.98	19.71	40.71	21.65
1987/88	0.38	2.66	12.12	4.48	1.00	20.26	2.37	5.78	10.69	1.04	19.88	40.13	22.52
1988/89	0.32	2.82	11.89	5.10	1.08	20.89	2.04	5.97	11.44	1.13	20.58	41.48	24.31
1989/90	-0.22	2.64	10.95	5.87	1.10	20.55	1.74	5.22	12.71	1.10	20.77	41.32	24.38
1990/91	-0.57	2.61	10.21	4.94	0.97	18.74	2.17	4.27	11.91	0.95	19.31	38.05	20.32
1991/92	-2.64	3.52	9.73	4.79	0.79	18.83	2.82	3.30	14.60	0.74	21.47	40.30	17.67
1992/93	-2.10	2.56	9.28	4.86	0.79	17.48	2.80	3.02	13.08	0.68	19.58	37.06	17.12
1993/94	-0.02	2.98	11.42	4.34	0.86	19.59	2.65	4.23	11.92	0.83	19.61	39.20	18.77
1994/95	1.06	2.46	12.26	4.40	0.97	20.09	2.25	4.93	10.85	1.00	19.03	39.12	20.58
1995/96	0.83	2.80	11.28	4.46	1.00	19.54	1.84	4.69	11.20	0.98	18.71	38.25	20.25
1996/97	-0.71	2.34	10.91	4.66	0.95	18.86	2.14	4.40	12.11	0.93	19.57	38.43	19.96
1997/98	1.73	2.23	13.61	4.20	1.03	21.06	1.88	6.05	10.38	1.03	19.34	40.40	22.56
1998/99	1.57	2.77	14.28	4.87	1.10	23.01	2.47	6.45	11.41	1.11	21.44	44.45	24.82
1999/00	1.92	2.83	15.14	5.28	1.19	24.44	2.56	6.89	11.85	1.21	22.52	46.96	26.72
2000/01	1.12	2.67	15.16	5.66	1.18	24.66	2.35	7.26	12.76	1.17	23.54	48.21	28.19
2001/02	-0.83	2.55	13.81	4.68	1.10	22.14	3.43	6.49	11.95	1.11	22.98	45.12	24.54
Aver.	**0.19**	**2.71**	**12.18**	**4.80**	**1.00**	**20.70**	**2.43**	**5.29**	**11.79**	**1.00**	**20.50**	**41.20**	**22.15**

Table A5. Job reallocation and its components, 1986–2002. At least 50 years old. Percent

		JCR			JDR				
	Net	Entry	Expa.	Total	Exits	Contr.	Total	Stable	JRR
1986/87	-7.93	2.27	2.20	4.47	3.59	8.22	12.40	-0.59	16.87
1987/88	-8.55	1.98	1.21	3.19	2.29	8.88	11.74	-0.57	14.94
1988/89	-7.99	2.32	1.25	3.57	2.06	8.97	11.55	-0.52	15.12
1989/90	-7.91	2.08	1.85	3.93	1.73	9.70	11.85	-0.41	15.78
1990/91	-7.67	2.04	2.27	4.31	2.12	9.39	11.97	-0.46	16.28
1991/92	-10.82	2.94	3.03	5.97	2.71	13.68	16.79	-0.39	22.75
1992/93	-11.13	1.93	2.68	4.61	2.83	12.51	15.75	-0.42	20.36
1993/94	-7.62	2.25	3.16	5.40	2.78	9.90	13.03	-0.36	18.43
1994/95	-7.42	1.82	2.24	4.06	2.33	8.69	11.48	-0.46	15.54
1995/96	-6.37	2.10	2.59	4.69	1.86	8.79	11.06	-0.41	15.75
1996/97	-7.98	1.83	2.30	4.13	2.13	9.56	12.12	-0.42	16.25
1997/98	-7.01	1.74	2.18	3.92	2.00	8.43	10.93	-0.50	14.85
1998/99	-6.25	2.14	3.05	5.19	2.53	8.45	11.44	-0.45	16.62
1999/00	-6.33	2.04	3.05	5.10	2.59	8.43	11.43	-0.41	16.52
2000/01	-5.46	1.93	3.40	5.33	2.26	8.21	10.79	-0.32	16.12
2001/02	-5.23	2.11	3.51	5.62	3.13	7.45	10.85	-0.27	16.47
Aver.	**-7.61**	**2.10**	**2.50**	**4.59**	**2.43**	**9.33**	**12.20**	**-0.44**	**16.79**

Table A6. Worker reallocation and its components, 1986–2002. At least 50 years old. Percent

		Hiring rates					Separation rates					WRR	Chr
	Net	Entry	Exp.	Cont.	Stable	Total	Exit	Exp.	Cont.	Stable	Total		
1986/87	-7.93	2.27	7.87	1.89	0.41	12.44	3.59	5.67	10.10	1.00	20.37	32.81	15.93
1987/88	-8.55	1.98	6.70	2.02	0.42	11.13	2.29	5.50	10.90	0.99	19.68	30.81	15.87
1988/89	-7.99	2.32	6.61	2.31	0.47	11.71	2.06	5.36	11.29	0.99	19.69	31.41	16.29
1989/90	-7.91	2.08	6.06	2.67	0.49	11.30	1.73	4.21	12.37	0.90	19.21	30.50	14.72
1990/91	-7.67	2.04	6.34	2.35	0.45	11.17	2.12	4.03	11.79	0.90	18.84	30.01	13.74
1991/92	-10.82	2.94	6.60	2.51	0.37	12.43	2.71	3.57	16.19	0.77	23.24	35.67	12.91
1992/93	-11.13	1.93	6.20	2.53	0.37	11.04	2.83	3.51	15.04	0.79	22.17	33.21	12.84
1993/94	-7.62	2.25	7.19	2.35	0.42	12.21	2.78	4.03	12.25	0.78	19.84	32.05	13.61
1994/95	-7.43	1.82	6.94	2.21	0.47	11.43	2.33	4.70	10.90	0.92	18.86	30.29	14.75
1995/96	-6.37	2.10	6.63	2.27	0.45	11.46	1.86	4.05	11.06	0.86	17.83	29.29	13.54
1996/97	-7.98	1.83	6.33	2.42	0.45	11.03	2.13	4.03	11.98	0.87	19.02	30.05	13.80
1997/98	-7.01	1.74	7.56	2.17	0.48	11.94	2.00	5.38	10.59	0.98	18.95	30.89	16.04
1998/99	-6.25	2.14	8.29	2.51	0.51	13.45	2.53	5.24	10.96	0.96	19.70	33.15	16.53
1999/00	-6.33	2.04	8.58	2.65	0.59	13.86	2.59	5.53	11.07	1.00	20.19	34.05	17.52
2000/01	-5.46	1.93	9.01	3.00	0.61	14.57	2.26	5.63	11.22	0.93	20.03	34.59	18.47
2001/02	-5.23	2.11	8.46	2.55	0.57	13.68	3.13	4.94	10.00	0.84	18.91	32.59	16.12
Aver.	**-7.61**	**2.10**	**7.21**	**2.40**	**0.47**	**12.18**	**2.43**	**4.71**	**11.73**	**0.91**	**19.78**	**31.96**	**15.17**

Table A7. Multinomial logistic model

	1986/1987			1987/1988			1988/1989		
	Model 1		Model 2	Model 1		Model 2	Model 1		Model 2
Variables	**Changed**	**Left**	**New**	**Changed**	**Left**	**New**	**Changed**	**Left**	**New**
Sex									
Female	0.99 (.014)	**1.31 (.014)**	**1.36 (.026)**	1.01 (.023)	**1.34 (.015)**	**1.39 (.014)**	**0.97 (.012)**	**1.31 (.014)**	**1.45 (.013)**
Male	1	1	1	1	1	1	1	1	1
Age									
16-24	**1.82 (.027)**	**2.27 (.028)**	**5.58 (.115)**	**1.87 (.024)**	**2.04 (.031)**	**5.63 (.075)**	**1.67 (.022)**	**1.89 (.026)**	**5.44 (.062)**
25-29	**1.39 (.014)**	**1.73 (.016)**	**1.84 (.025)**	**1.44 (.012)**	**1.68 (.017)**	**1.91 (.017)**	**1.38 (.012)**	**1.63 (.018)**	**1.90 (.015)**
30-39	1	1	1	1	1	1	1	1	1
40-49	**0.75 (.007)**	**0.63 (.007)**	**0.59 (.007)**	**0.76 (.007)**	**0.62 (.006)**	**0.55 (.006)**	**0.76 (.006)**	**0.62 (.007)**	**0.53 (.005)**
50-59	**0.52 (.009)**	**0.72 (.009)**	**0.42 (.008)**	**0.50 (.010)**	**0.72 (.009)**	**0.39 (.007)**	**0.54 (.009)**	**0.68 (.010)**	**0.38 (.006)**
60-65	**0.38 (.013)**	**4.37 (.059)**	**0.33 (.010)**	**0.37 (.018)**	**4.26 (.056)**	**0.29 (.009)**	**0.38 (.011)**	**4.08 (.058)**	**0.29 (.008)**
Country of Birth									
Sweden	1	1	1	1	1	1	1	1	1
Nordic Countries	**1.17 (.025)**	**1.43 (.020)**	**1.43 (.048)**	**1.16 (.022)**	**1.42 (.020)**	**1.33 (.024)**	**1.17 (.021)**	**1.38 (.025)**	**1.59 (.023)**
West Europe	**1.17 (.028)**	**1.32 (.030)**	**1.57 (.038)**	**1.16 (.027)**	**1.36 (.030)**	**1.62 (.037)**	**1.08 (.024)**	**1.22 (.026)**	**1.61 (.036)**
South Europe	**1.18 (.060)**	**2.22 (.085)**	**2.09 (.127)**	**1.16 (.061)**	**2.28 (.118)**	**1.91 (.086)**	**1.16 (.051)**	**1.99 (.075)**	**2.00 (.097)**
East Europe	**1.13 (.039)**	**1.65 (.065)**	**1.77 (.057)**	**1.09 (.037)**	**1.56 (.042)**	**1.83 (.069)**	1.04 (.026)	**1.41 (.030)**	**1.79 (.040)**
North America, Oceania	**1.20 (.059)**	**1.76 (.076)**	**2.49 (.111)**	**1.19 (.054)**	**1.69 (.070)**	**2.65 (.105)**	**1.17 (.049)**	**1.52 (.062)**	**2.62 (.096)**
South America	**1.43 (.068)**	**2.26 (.094)**	**3.77 (.172)**	**1.50 (.066)**	**2.25 (.100)**	**4.12 (.156)**	**1.43 (.057)**	**1.59 (.061)**	**4.33 (.164)**
Africa, Asia	**1.23 (.042)**	**2.18 (.056)**	**3.61 (.163)**	**1.28 (.039)**	**2.36 (086)**	**3.86 (.096)**	**1.24 (.037)**	**1.94 (.050)**	**3.78 (.085)**
Educational level									
Pre-upper secondary	**0.83 (.009)**	**1.15 (.009)**	1.04 (.023)	**0.85 (.015)**	**1.13 (.012)**	**1.12 (.010)**	**0.90 (.009)**	**1.14 (.014)**	**1.16 (.008)**
Secondary	1	1	1	1	1	1	1	1	1
University ≤ 3 years	**1.20 (.019)**	**0.87 (.012)**	**1.06 (.017)**	**1.19 (.021)**	**0.85 (.011)**	**1.03 (.012)**	**1.08 (.013)**	**0.85 (.010)**	**1.04 (.011)**
University > 3 years	**1.29 (.028)**	**0.67 (.012)**	**0.90 (.021)**	**1.34 (.030)**	**0.76 (.020)**	**0.85 (.015)**	**1.24 (.021)**	**0.67 (.011)**	0.99 (.025)
Tenure in years	**0.47 (.010)**	**0.49 (.010)**	------	**0.66 (.008)**	**0.68 (.008)**	------	**0.73 (.005)**	**0.74 (.006)**	------
Sector									
Private	1	1	1	1	1	1	1	1	1
Public	**1.19 (.044)**	**1.18 (.027)**	**1.27 (.038)**	**1.12 (.042)**	**1.12 (.021)**	**1.25 (.030)**	**1.13 (.030)**	**1.07 (.019)**	**1.30 (.024)**
Other	0.99 (.050)	**0.93 (.029)**	1.09 (.123)	1.11 (.080)	0.92 (.056)	**0.85 (.026)**	**1.22 (.050)**	0.96 (.070)	**0.92 (.022)**
Number employed									
1-26	**0.97 (.013)**	**1.05 (0.11)**	**1.10 (.013)**	0.99 (.012)	**1.07 (.012)**	**1.10 (.012)**	**0.94 (.011)**	**1.04 (.011)**	**1.12 (.012)**
26-100	1	1	1	1	1	1	1	1	1
101-250	1.01 (.029)	0.98 (.021)	**0.91 (.023)**	0.96 (.024)	0.99 (.024)	**0.91 (.021)**	0.96 (.022)	**0.91 (0.17)**	**0.95 (.023)**
> 250	**0.89 (.046)**	**0.87 (.288)**	**0.82 (.047)**	**0.86 (.051)**	**0.83 (0.28)**	**0.78 (.027)**	**0.84 (.031)**	**0.88 (. 31)**	**0.69 (.017)**
Log likelihood ratio	-1 801 045	-1 801 045	-897 173	-1 914 228	-1 914 228	-896 400	-2 007 150	-2 007 150	-906 710
No. Observations	2 919 429	2 919 429	2 653 687	3 016 401	3 016 401	2 701 746	3 080 391	3 080 391	2 728 866

Note: The relative odds ratios are presented. Bold coefficients are significant at 1% or 5 % level. Clustered standard errors in parenthesis.

Table A7 cont.

	1989/1990			1990/1991			1991/1992		
	Model 1		Model 2	Model 1		Model 2	Model 1		Model 2
Variables	**Changed**	**Left**	**New**	**Changed**	**Left**	**New**	**Changed**	**Left**	**New**
Sex									
Female	1.01 (0.14)	**1.34 (.017)**	**1.45 (.013)**	**1.03 (.015)**	**1.38 (.016)**	**1.47 (.022)**	**1.08 (.022)**	1.26 (.015)	**1.56 (.022)**
Male	1	1	1	1	1	1	1	1	1
Age									
16-24	**1.54 (.019)**	**1.78 (.020)**	**4.77 (.051)**	**1.36 (.016)**	**1.86 (.020)**	**3.64 (.043)**	**1.21 (.017)**	**1.96 (.021)**	**3.50 (.048)**
25-29	**1.33 (.011)**	**1.59 (.014)**	**1.88 (.015)**	**1.21 (.010)**	**1.55 (.013)**	**1.70 (.015)**	**1.13 (.011)**	**1.50 (.013)**	**1.71 (.017)**
30-39	1	1	1	1	1	1	1	1	1
40-49	**0.79 (.006)**	**0.61 (.007)**	**0.48 (.004)**	**0.85 (.007)**	**0.60 (.006)**	**0.50 (.007)**	**0.94 (.008)**	**0.65 (.006)**	**0.46 (.006)**
50-59	**0.56 (.009)**	**0.64 (.009)**	**0.32 (.004)**	**0.69 (.009)**	**0.66 (.010)**	**0.36 (.007)**	**0.86 (.011)**	**0.78 (.009)**	**0.33 (.007)**
60-65	**0.41 (.011)**	**3.88 (.064)**	**0.24 (.006)**	**0.53 (.014)**	**2.33 (.039)**	**0.30 (.009)**	**0.74 (.016)**	**3.06 (.059)**	**0.26 (.009)**
Country of Birth									
Sweden	1	1	1	1	1	1	1	1	1
Nordic Countries	**1.17 (.030)**	**1.44 (.019)**	**2.12 (.035)**	**1.07 (.023)**	**1.44 (.020)**	**1.31 (.024)**	0.99 (.021)	**1.39 (.020)**	**0.27 (.0.27)**
West Europe	**1.11 (.025)**	**1.27 (.028)**	**2.33 (.053)**	**1.06 (.025)**	**1.41 (.032)**	**1.49 (.036)**	0.96 (.024)	**1.28 (.028)**	**1.38 (.037)**
South Europe	**1.15 (.047)**	**1.80 (.070)**	**3.12 (.135)**	**1.18 (.060)**	**1.99 (.082)**	**1.73 (.088)**	0.91 (.045)	**1.80 (.074)**	**1.67 (.087)**
East Europe	1.05 (.033)	**1.41 (.030)**	**2.84 (.056)**	0.96 (.029)	**1.52 (.031)**	**1.66 (.042)**	**0.92 (.033)**	**1.59 (.042)**	**1.60 (.043)**
North America, Oceania	**1.20 (.050)**	**1.61 (.062)**	**4.08 (.152)**	1.04 (.047)	**1.81 (.067)**	**2.25 (.085)**	1.05 (.045)	**1.76 (.064)**	**1.85 (.078)**
South America	**1.32 (.048)**	**1.50 (.052)**	**6.73 (.243)**	**1.14 (.051)**	**1.73 (.058)**	**2.21 (.077)**	0.99 (.057)	**1.90 (.070)**	**1.85 (.077)**
Africa, Asia	**1.17 (.033)**	**1.89 (.043)**	**6.27 (.138)**	**1.10 (.045)**	**2.15 (.049)**	**2.35 (.057)**	**0.95 (.041)**	**2.17 (.064)**	**2.11 (.057)**
Educational level									
Pre-upper secondary	**0.88 (.009)**	**1.10 (.008)**	**1.11 (.008)**	**0.84 (.010)**	**1.16 (.008)**	**1.12 (.011)**	**0.77 (.010)**	**1.11 (.009)**	**1.09 (.012)**
Secondary	1	1	1	1	1	1	1	1	1
University ≤ 3 years	**1.12 (.015)**	**0.87 (.011)**	**1.18 (.011)**	**1.16 (.016)**	**0.86 (.008)**	**1.06 (.012)**	1.01 (.016)	**0.82 (.009)**	**1.14 (.013)**
University > 3 years	**1.33 (.024)**	**0.70 (.011)**	**0.97 (.014)**	**1.45 (.029)**	**0.69 (.011)**	**0.95 (.017)**	**1.05 (.026)**	**0.66 (.012)**	**0.89 (.016)**
Tenure in years	**0.77 (.006)**	**0.79 (.005)**	------	**0.79 (.004)**	**0.79 (.004)**	------	**0.82 (.005)**	**0.81 (.003)**	------
Sector									
Private	1	1	1	1	1	1	1	1	1
Public	**1.08 (.031)**	**1.06 (.027)**	**1.30 (.021)**	**1.13 (.030)**	0.97 (.020)	**1.46 (.043)**	**1.84 (.078)**	0.96 (.022)	**1.68 (.049)**
Other	**1.08 (.042)**	**0.86 (.020)**	0.97 (.025)	**1.25 (.070)**	**0.85 (.020)**	0.98 (.031)	**1.50 (.103)**	**0.88 (.031)**	0.98 (.046)
Number employed									
1-26	**0.93 (.011)**	**1.09 (.011)**	**1.13 (.011)**	**0.96 (.013)**	**1.04 (.010)**	**1.19 (.014)**	**0.83 (.014)**	**0.96 (.011)**	**1.16 (.014)**
26-100	1	1	1	1	1	1	1	1	1
101-250	1.04 (.024)	0.99 (.020)	**0.88 (.017)**	1.00 (.028)	0.96 (.019)	**0.87 (.023)**	**1.18 (.041)**	1.05 (.026)	0.95 (.030)
> 250	**0.91 (.040)**	0.94 (.037)	**0.67 (.017)**	**0.89 (.036)**	0.95 (.030)	**0.68 (.042)**	0.96 (.057)	0.94 (.032)	**0.64 (.029)**
Log likelihood ratio	-2 044 919	-2 044 919	-874 598	-1 896 307	-1 896 307	-830 027	-1 936 427	-1 936 427	-717 373
No. Observations	3 126 467	3 126 467	2 743 131	3 116 717	3 116 717	2 764 751	3 051 840	3 051 840	2 620 880

Note: The relative odds ratios are presented. Bold coefficients are significant at 1% or 5 % level. Clustered standard errors in parenthesis.

Table A7 cont.

	1992/1993			1993/1994			1994/1995		
	Model 1		Model 2	Model 1		Model 2	Model 1		Model 2
Variables	**Changed**	**Left**	**New**	**Changed**	**Left**	**New**	**Changed**	**Left**	**New**
Sex									
Female	0.97 (.019)	**1.15 (.011)**	**1.44 (.022)**	**0.93 (.016)**	**1.21 (.015)**	**1.19 (.012)**	**0.87 (.015)**	**1.26 (.013)**	**1.23 (.020)**
Male	1	1	1	1	1	1	1	1	1
Age									
16-24	**1.27 (.020)**	**2.30 (.024)**	**3.50 (.045)**	**1.29 (.018)**	**1.88 (.022)**	**5.26 (.064)**	**1.45 (.020)**	**1.93 (.026)**	**6.04 (.066)**
25-29	**1.20 (.013)**	**1.54 (.013)**	**1.70 (.017)**	**1.22 (.012)**	**1.48 (.014)**	**1.88 (.016)**	**1.28 (.013)**	**1.47 (.014)**	**1.89 (.015)**
30-39	1	1	1	1	1	1	1	1	1
40-49	**0.92 (.010)**	**0.66 (.006)**	**0.47 (.006)**	**0.90 (.008)**	**0.67 (.006)**	**0.46 (.005)**	**0.83 (.007)**	**0.64 (.007)**	**0.45 (.004)**
50-59	**0.82 (.014)**	**0.80 (.009)**	**0.33 (.007)**	**0.80 (.011)**	**0.83 (.009)**	**0.32 (.005)**	**0.68 (.009)**	**0.76 (.010)**	**0.30 (.004)**
60-65	**0.70 (.019)**	**3.56 (.057)**	**0.27 (.007)**	**0.65 (.017)**	**3.62 (.056)**	**0.29 (.006)**	**0.53 (.013)**	**3.25 (.055)**	**0.23 (.006)**
Country of Birth									
Sweden	1	1	1	1	1	1	1	1	1
Nordic Countries	**1.08 (.026)**	**1.34 (.019)**	**1.24 (.024)**	**1.06 (.020)**	**1.28 (.019)**	**1.37 (.021)**	**1.05 (.023)**	**1.30 (.018)**	**1.32 (.021)**
West Europe	1.00 (.028)	**1.25 (.027)**	**1.35 (.040)**	1.04 (.028)	**1.28 (.030)**	**1.64 (.040)**	1.02 (.027)	**1.40 (.033)**	**1.67 (.040)**
South Europe	**1.17 (.071)**	**1.88 (.067)**	**1.73 (.078)**	0.99 (.051)	**1.85 (.068)**	**1.66 (.076)**	1.08 (.063)	**1.79 (.080)**	**1.70 (.083)**
East Europe	1.03 (.036)	**1.56 (.030)**	**1.51 (.046)**	1.04 (.030)	**1.54 (.033)**	**1.90 (.047)**	0.97 (.030)	**1.56 (.040)**	**2.26 (.056)**
North America, Oceania	1.07 (.051)	**1.72 (.063)**	**1.74 (.071)**	1.06 (.050)	**1.61 (.065)**	**2.30 (.092)**	1.05 (.050)	**1.74 (.073)**	**2.33 (.107)**
South America	**1.16 (.069)**	**2.01 (.065)**	**1.74 (.071)**	1.03 (.052)	**2.03 (.068)**	**2.03 (.073)**	1.09 (.055)	**1.90 (.069)**	**2.35 (.112)**
Africa, Asia	**1.15 (.059)**	**2.16 (.047)**	**1.96 (.054)**	1.04 (.039)	**2.14 (.052)**	**2.48 (.066)**	0.97 (.041)	**2.02 (.061)**	**2.77 (.015)**
Educational level									
Pre-upper secondary	**0.82 (.012)**	**1.11 (.008)**	**1.11 (.014)**	**0.82 (.011)**	**1.09 (.009)**	**1.08 (.010)**	**0.84 (.013)**	**1.11 (.010)**	**1.13 (.011)**
Secondary	1	1	1	1	1	1	1	1	1
University ≤ 3 years	**1.17 (.018)**	**0.82 (.008)**	**1.22 (.014)**	**1.13 (.016)**	**0.84 (.010)**	**1.14 (.018)**	**1.35 (.027)**	**0.93 (.010)**	**1.20 (.015)**
University > 3 years	**1.33 (.029)**	**0.70 (.012)**	1.01 (.019)	**1.26 (.025)**	**0.67 (.011)**	**1.19 (.012)**	**1.36 (.027)**	**0.74 (.011)**	**1.09 (.021)**
Tenure in years	**0.82 (.006)**	**0.83 (.003)**	------	**0.82 (.004)**	**0.85 (.003)**	------	**0.84 (.003)**	**0.86 (.003)**	------
Sector									
Private	1	1	1	1	1	1	1	1	1
Public	**1.49 (.059)**	**1.05 (.020)**	**1.35 (.035)**	**1.54 (.048)**	**1.11 (.021)**	**1.19 (.025)**	**1.47 (.050)**	**1.17 (.026)**	**1.17 (.033)**
Other	**1.63 (.115)**	**0.92 (.024)**	**1.13 (.055)**	**1.67 (.077)**	**1.17 (.038)**	0.95 (.028)	**1.42 (.073)**	1.06 (.036)	1.03 (.021)
Number employed									
1-26	**0.96 (.016)**	**1.04 (.012)**	**1.16 (.015)**	**0.94 (.015)**	**1.05 (.012)**	**1.11 (.013)**	0.99 (.014)	**1.09 (.012)**	**1.14 (.012)**
26-100	1	1	1	1	1	1	1	1	1
101-250	0.98 (.036)	**0.94 (.021)**	**0.90 (.026)**	1.01 (.035)	0.97 (.022)	**0.87 (.021)**	0.99 (.032)	0.96 (.023)	**0.88 (.017)**
> 250	**0.86 (.066)**	**0.86 (.025)**	**0.69 (.031)**	**0.86 (.049)**	**0.94 (.028)**	**0.66 (.024)**	0.95 (.050)	0.94 (.034)	**0.71 (.027)**
Log likelihood ratio	-1 744 516	-1 744 516	-712 582	-1 655 060	-1 655 060	-801 799	-1 637 021	-1 637 021	-941 249
No. Observations	2 917 030	2 917 030	2 561 577	2 795 855	2 795 855	2 539 549	2 813 751	2 813 751	2 596 831

Note: The relative odds ratios are presented. Bold coefficients are significant at 1 or 5 % level. Clustered standard errors in parenthesis.

Table A7 cont

	1995/1996			1996/1997			1997/1998		
	Model 1		Model 2	Model 1		Model 2	Model 1		Model 2
Variables	**Changed**	**Left**	**New**	**Changed**	**Left**	**New**	**Changed**	**Left**	**New**
Sex									
Female	0.93 (.015)	**1.22 (.019)**	**1.39 (019)**	**0.89 (.014)**	**1.20 (.032)**	**1.31 (.014)**	**0.95 (.014)**	**1.26 (.030)**	**1.32 (.016)**
Male	1	1	1	1	1	1	1	1	1
Age									
16-24	**1.34 (.019)**	**2.04 (.031)**	**5.24 (.062)**	**1.40 (.027)**	**2.05 (.050)**	**6.57 (.085)**	**1.51 (.023)**	**2.04 (.033)**	**7.55 (.109)**
25-29	**1.22 (.0125)**	**1.44 (.015)**	**1.80 (.016)**	**1.22 (.019)**	**1.39 (.025)**	**1.97 (.017)**	**1.24 (.012)**	**1.40 (.017)**	**2.06 (.019)**
30-39	1	1	1	1	1	1	1	1	1
40-49	**0.85 (.008)**	**0.67 (.009)**	**0.45 (.005)**	**0.85 (.009)**	**0.70 (.015)**	**0.47 (.005)**	**0.84 (.008)**	**0.65 (009)**	**0.48 (.006)**
50-59	**0.72 (.011)**	**0.76 (.011)**	**0.30 (.004)**	**0.73 (.012)**	**0.80 (.014)**	**0.30 (.006)**	**0.70 (.010)**	**0.76 (.011)**	**0.30 (.007)**
60-65	**0.55 (.014)**	**3.04 (.051)**	**0.25 (.006)**	**0.54 (.023)**	**3.57 (.082)**	**0.23 (.007)**	**0.53 (.012)**	**3.87 (.060)**	**0.20 (.008)**
Country of Birth									
Sweden	1	1	1	1	1	1	1	1	1
Nordic Countries	1.00 (.018)	**1.25 (.019)**	**1.26 (.021)**	1.12 (.071)	**1.28 (.028)**	**1.24 (.021)**	**1.04 (.017)**	**1.25 (.022)**	**1.32 (.024)**
West Europe	1.00 (.028)	**1.34 (.034)**	**1.74 (.041)**	1.02 (.031)	**1.28 (.033)**	**1.71 (.043)**	0.98 (.025)	**1.25 (.033)**	**1.68 (.040)**
South Europe	**1.14 (.054)**	**1.59 (.071)**	**1.85 (.098)**	1.21 (.197)	**1.65 (.075)**	**1.85 (.086)**	1.04 (.053)	**1.59 (.105)**	**1.86 (.081)**
East Europe	**0.89 (.036)**	**1.48 (.039)**	**2.49 (.056)**	0.98 (.080)	**1.45 (.038)**	**2.64 (.060)**	0.96 (.022)	**1.32 (.032)**	**2.99 (.063)**
North America, Oceania	1.02 (.051)	**1.97 (.081)**	**2.30 (.090)**	0.98 (.046)	**1.75 (.075)**	**2.42 (.094)**	1.07 (.043)	**1.82 (.073)**	**2.44 (.084)**
South America	1.03 (.044)	**1.77 (.089)**	**2.33 (.099)**	1.08 (.051)	**1.74 (.068)**	**2.17 (.071)**	**1.11 (.040)**	**1.60 (.058)**	**2.42 (.070)**
Africa, Asia	1.04 (.044)	**2.10 (.110)**	**2.58 (.112)**	1.04 (.051)	**192 (.083)**	**2.39 (.049)**	1.04 (.023)	**1.75 (.048)**	**2.73 (.054)**
Educational level									
Pre-upper secondary	**0.81 (.011)**	**1.12 (.011)**	**1.15 (.012)**	**0.85 (.020)**	**1.14 (.013)**	**1.23 (.013)**	**0.84 (.010)**	**1.14 (.010)**	**1.33 (.017)**
Secondary	1	1	1	1	1	1	1	1	1
University ≤ 3 years	**1.24 (018)**	**0.88 (.011)**	**1.25 (.016)**	**1.25 (.025)**	0.98 (.039)	**1.29 (.015)**	**1.26 (.015)**	0.96 (.035)	**1.32 (.013)**
University > 3 years	**1.41 (.027)**	**0.70 (.014)**	**1.18 (.020)**	**1.39 (.037)**	**0.75 (.018)**	**1.31 (018)**	**1.43 (.022)**	**0.73 (.016)**	**1.18 (.017)**
Tenure in years	**0.85 (.003)**	**0.86 (.003)**	------	**0.87 (.007)**	**0.87 (.007)**	------	**0.90 (.004)**	**0.90 (.004)**	------
Sector									
Private	1	1	1	1	1	1	1	1	1
Public	**1.46 (.045)**	**1.25 (.039)**	**1.21 (.032)**	**1.27 (.079)**	**1.43 (.083)**	**1.13 (.037)**	**1.22 (.038)**	**1.22 (.044)**	**1.21 (.033)**
Other	**1.83 (.087)**	**1.28 (.043)**	**1.06 (.029)**	**1.32 (.088)**	**1.07 (.027)**	1.07 (.037)	**1.35 (.056)**	**1.23 (.034)**	1.00 (.029)
Number employed									
1-26	0.97 (.014)	**1.10 (.013)**	**1.14 (.012)**	**0.96 (.016)**	**1.12 (.015)**	**1.14 (.013)**	0.98 (.013)	**1.14 (.012)**	**1.09 (.011)**
26-100	1	1	1	1	1	1	1	1	1
101-250	1.03 (.033)	**0.95 (.024)**	**0.90 (.023)**	0.99 (.030)	1.01 (.024)	**0.89 (.021)**	**0.93 (.025)**	**0.92 (.020)**	**0.90 (.017)**
> 250	0.93 (.046)	**0.88 (.044)**	**0.70 (.029)**	1.06 (.116)	1.16 (.130)	**0.72 (.026)**	**0.82 (.040)**	**0.89 (.052)**	**0.70 (.035)**
Log likelihood ratio	-1 653 206	-1 653 206	-785 707	-1 688 577	-1 688 577	-755 824	-169 9771	-1 699 771	-844 766
No. Observations	2 874 192	2 874 192	2 612 469	2 876 953	2 876 953	2 593 223	2 876 456	2 876 456	2 644 717

Note: The relative odds ratios are presented. Bold coefficients are significant at 1% or 5 % level. Clustered standard errors in parenthesis.

Table A7 cont.

	1998/1999			1999/2000			2000/2001		
	Model 1		Model 2	Model 1		Model 2	Model 1		Model 2
Variables	**Changed**	**Left**	**New**	**Changed**	**Left**	**New**	**Changed**	**Left**	**New**
Sex									
Female	**0.96 (.014)**	**1.28 (.020)**	**1.34 (.017)**	**0.97 (.013)**	**1.36 (.015)**	**1.36 (.013)**	1.01 (.023)	**1.35 (.027)**	**1.44 (.013)**
Male	1	1	1	1	1	1	1	1	1
Age									
16-24	**1.49 (.044)**	**2.04 (.026)**	**6.86 (.082)**	**1.58 (.021)**	**2.19 (.030)**	**6.98 (.085)**	**1.60 (.020)**	**2.31 (.027)**	**6.69 (.069)**
25-29	**1.23 (.018)**	**1.38 (.012)**	**2.00 (.017)**	**1.27 (.013)**	**1.42 (.013)**	**1.99 (.016)**	**1.25 (.010)**	**1.43 (.011)**	**1.97 (.015)**
30-39	1	1	1	1	1	1	1	1	1
40-49	**0.84 (.009)**	**0.68 (.008)**	**0.50 (.006)**	**0.81 (.009)**	**0.68 (.010)**	**0.52 (.005)**	**0.84 (.007)**	**0.69 (.006)**	**0.54 (.005)**
50-59	**0.69 (.012)**	**0.79 (.011)**	**0.32 (.006)**	**0.65 (.010)**	**0.78 (.012)**	**0.33 (.004)**	**0.65 (.009)**	**0.77 (.008)**	**0.35 (.005)**
60-65	**0.54 (.013)**	**3.19 (.054)**	**0.25 (.008)**	**0.51 (.013)**	**3.27 (.057)**	**0.29 (.006)**	**0.52 (.011)**	**2.77 (.045)**	**0.35 (.007)**
Country of Birth									
Sweden	1	1	1	1	1	1	1	1	1
Nordic Countries	**1.11 (.046)**	**1.24 (.018)**	**1.32 (.022)**	**1.06 (.017)**	**1.28 (.020)**	**1.47 (.023)**	**1.06 (.018)**	**1.25 (.017)**	**1.43 (.022)**
West Europe	1.02 (.026)	**1.29 (.032)**	**1.72 (.039)**	1.01 (.023)	**1.28 (.030)**	**1.98 (.044)**	**0.95 (.022)**	**1.37 (.032)**	**1.91 (.044)**
South Europe	1.20 (.014)	**1.65 (.064)**	**2.08 (.103)**	0.97 (.046)	**1.51 (.069)**	**2.08 (.079)**	1.05 (.045)	**1.57 (.062)**	**2.10 (.084)**
East Europe	0.97 (.039)	**1.23 (.025)**	**2.84 (.060)**	**0.96 (.019)**	**1.20 (.024)**	**2.68 (.045)**	**0.92 (.018)**	**1.20 (.020)**	**2.23 (.040)**
North America, Oceania	1.02 (.043)	**1.79 (.069)**	**2.49 (.092)**	**1.18 (.041)**	**1.85 (.071)**	**2.50 (.077)**	**1.13 (.037)**	**1.94 (.067)**	**2.34 (.074)**
South America	**1.17 (.040)**	**1.50 (.047)**	**2.52 (.097)**	**1.26 (.036)**	**1.53 (.047)**	**2.54 (.065)**	**1.31 (.032)**	**1.48 (.039)**	**2.28 (.073)**
Africa, Asia	**1.12 (.030)**	**1.72 (.033)**	**2.92 (.080)**	**1.16 (.024)**	**1.71 (.038)**	**3.36 (.063)**	**1.21 (.030)**	**1.72 (.031)**	**2.83 (.046)**
Educational level									
Pre-upper secondary	**0.91 (.015)**	**1.16 (.009)**	**1.44 (.012)**	**0.92 (.010)**	**1.17 (.010)**	**0.97 (.008)**	**0.86 (.009)**	**1.14 (.010)**	**1.17 (.011)**
Secondary	1	1	1	1	1	1	1	1	1
University ≤ 3 years	**1.30 (.024)**	**0.95 (.012)**	**1.33 (.016)**	**1.34 (.017)**	**0.96 (.011)**	**1.02 (.010)**	**1.22 (.013)**	**0.98 (.009)**	**1.12 (.014)**
University > 3 years	**1.37 (.031)**	**0.72 (.011)**	**1.07 (.018)**	**1.33 (.020)**	**0.74 (.010)**	**1.43 (.024)**	**1.34 (.022)**	**0.75 (.009)**	**1.15 (.021)**
Tenure in years	**0.87 (.004)**	**0.90 (.002)**	------	**0.87 (.002)**	**0.92 (.003)**	------	**0.89 (.002)**	**0.91 (.001)**	------
Sector									
Private	1	1	1	1	1	1	1	1	1
Public	**1.13 (.045)**	**1.13 (.029)**	**1.30 (.031)**	**1.10 (.029)**	**1.10 (.025)**	**1.08 (.026)**	**1.15 (.028)**	1.00 (.018)	**1.51 (.034)**
Other	**1.18 (.058)**	**1.16 (.030)**	**1.14 (.035)**	**1.15 (.042)**	**1.16 (.043)**	**1.47 (.023)**	**1.22 (.055)**	**1.20 (.036)**	**1.43 (.022)**
Number employed									
1-26	**0.96 (.013)**	**1.08 (.012)**	**1.09 (.011)**	**0.94 (.011)**	**1.05 (.010)**	**1.05 (.010)**	**0.93 (.010)**	**1.05 (.010)**	**1.10 (.010)**
26-100	1	1	1	1	1	1	1	1	1
101-250	1.00 (.026)	**0.95 (.021)**	**0.89 (.019)**	1.01 (.024)	**0.95 (.016)**	**0.92 (.019)**	1.03 (.023)	0.99 (.019)	**0.95 (.018)**
> 250	0.93 (.076)	**0.88 (.040)**	**0.72 (.033)**	0.92 (.040)	0.92 (.045)	**0.69 (.025)**	**0.89 (.039)**	**0.87 (.030)**	**0.74 (.029)**
Log likelihood ratio	-1 828 421	-1 828 421	-882 969	-1 929 635	-1 929 635	-915 459	-2 052 181	-2 052 181	-912 140
No. Observations	2 939 551	2 939 551	2 664 749	3 012 180	3 012 180	2 704 529	3 112 193	3 112 193	2 741 457

Note: The relative odds ratios are presented. Bold coefficients are significant at 1% or 5 % level. Clustered standard errors in parenthesis.

Table A7 cont.

	2001/2002		
	Model 1		Model 2
Variables	**Changed**	**Left**	**New**
Sex			
Female	1.03 (.015)	**1.37 (.014)**	**1.37 (.012)**
Male	1	1	1
Age			
16-24	**1.73 (.025)**	**2.37 (.034)**	**6.88 (.074)**
25-29	**1.25 (.013)**	**1.43 (.014)**	**1.95 (.015)**
30-39	1	1	1
40-49	**0.88 (.008)**	**0.72 (.006)**	**0.53 (.005)**
50-59	**0.73 (.012)**	**0.80 (.009)**	**0.35 (.005)**
60-65	**0.61 (.018)**	**2.57 (.040)**	**0.33 (.008)**
Country of Birth			
Sweden	1	1	1
Nordic Countries	**1.04 (.018)**	**1.28 (.019)**	**1.45 (.023)**
West Europe	**0.95 (.022)**	**1.34 (.029)**	**2.00 (.045)**
South Europe	1.05 (.046)	**1.52 (.059)**	**2.05 (.079)**
East Europe	**0.93 (.022)**	**1.22 (.024)**	**1.98 (.033)**
North America, Oceania	1.06 (.037)	**1.80 (.064)**	**2.30 (.075)**
South America	**1.26 (.034)**	**1.43 (.039)**	**2.09 (.055)**
Africa, Asia	**1.17 (.030)**	**1.74 (.036)**	**2.63 (.050)**
Educational level			
Pre-upper secondary	**0.92 (.012)**	**1.19 (.011)**	**1.16 (.010)**
Secondary	1	1	1
University ≤ 3 years	**1.20 (.015)**	**0.96 (.013)**	**1.20 (.010)**
University > 3 years	**1.26 (.025)**	**0.69 (.021)**	**1.22 (.013)**
Tenure in years	**0.88 (.003)**	**0.91 (.002)**	------
Sector			
Private	1	1	1
Public	**1.18 (.042)**	1.03 (.032)	**1.42 (.024)**
Other	1.05 (.038)	1.02 (.025)	**1.34 (.035)**
Number employed			
1-26	**0.95 (.011)**	**1.07 (.010)**	**1.10 (.011)**
26-100	1	1	1
101-250	1.00 (.024)	0.99 (.019)	**0.90 (.017)**
> 250	0.99 (.056)	1.00 (.049)	**0.71 (.021)**
Log likelihoods ratio	-2 005 403	-2 005 403	-847 223
No. Observations	3 149 705	3 149 705	2 774 423

Note: The relative odds ratios are presented. Bold coefficients are significant at 1% or 5 % level. Clustered standard errors in parenthesis.

Former Working Papers:

- **Arbetsrapport/Institutet för Framtidsstudier; 2000:1- 2005:21,** see www.framtidsstudier.se.

- **Arbetsrapport/Institutet för Framtidsstudier; 2006:1**
  Alm, Susanne, *Drivkrafter bakom klassresan –kvantitativa data i fallstudiebelysning*
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:2**
  Duvander, Ann-Zofie, *När är det dags för dagis? En studie om vid vilken ålder barn börjar förskola och föräldrars åsikt om detta*
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:3**
  Johansson, Mats, *Inkomst och ojämlikhet i Sverige 1951-2002*
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:4**
  Malmberg, Bo & Eva Andersson, *Health as a factor in regional economic development*
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:5**
  Estrada, Felipe & Anders Nilsson, *Segregation och utsatthet för egendomsbrott. - Betydelsen av bostadsområdets resurser och individuella riskfaktorer*
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:6**
  Amcoff, Jan & Erik Westholm, *Understanding rural change – demography as a key to the future*
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:7**
  Lundqvist, Torbjörn, *The Sustainable Society in Swedish Politics – Renewal and Continuity*
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:8**
  Lundqvist, Torbjörn, *Competition Policy and the Swedish Model*.
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:9**
  de la Croix, David, Lindh, Thomas & Bo Malmberg, *Growth and Longevity from the Industrial Revolution to the Future of an Aging Society*.
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:10**
  Kangas, Olli, Lundberg, Urban & Niels Ploug, *Three routes to a pension reform. Politics and institutions in reforming pensions in Denmark, Finland and Sweden.*
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:11**
  Korpi, Martin, *Does Size of Local Labour Markets Affect Wage Inequality? A Rank-size Rule of Income Distribution*
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:12**
  Lindbom, Anders, *The Swedish Conservative Party and the Welfare State. Institutional Change and Adapting Preferences.*
- **Arbetsrapport/Institutet för Framtidsstudier; 2006:13**
  Enström Öst, Cecilia, *Bostadsbidrag och trångboddhet. Har 1997 års bostadsbidragsreform förbättrat bostadssituationen för barnen?*
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