ETLA ELINKEINOELÄMÄN TUTKIMUSLAITOS
THE RESEARCH INSTITUTE OF THE FINNISH ECONOMY
Lönnrotinkatu 4 B FIN-00120 Helsinki Finland
Tel. +358-9-609 900 Telefax +358-9-601 753
http://www.etla.fi

Keskusteluaiheita – Discussion papers

No. 660

Rita Asplund & Reija Lilja

Labour Market Transitions in Finland
Does background matter?

We want to thank Sinikka Littu and Eija Savaja for research assistance.
Financial support from the Technology Development Centre (TEKES)
is gratefully acknowledged.

ISSN 0781-6847 **18.12.1998**

ASPLUND, Rita – **LILJA**, Reija, **LABOUR MARKET TRANSITIONS IN FINLAND – DOES BACKGROUND MATTER?**, Helsinki, ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy, 1998, 30 p. (Keskusteluaiheita, Discussion Papers, ISSN, 0781-6847; no. 660)

ABSTRACT: The Finnish labour market has undergone marked structural changes over the past 20 years. The consequent reshaping of the labour force can be expected to have hit the least educated especially hard. Moreover, the labour market situation of the least educated may have been further impaired by strengthening trends of occupational upgrading, overeducation and 'bumping down' phenomenon.

The present study shows that the low-skilled workers have managed to adjust fairly smoothly to the changing working environment in Finland, at least in times of steady economic growth. The deep recession in the early 1990s appears to have put an end to this favourable situation, however. The chances of the least educated of keeping their jobs and of changing occupations declined substantially. Instead their fate was to an increasing extent to become unemployed or retired. The radical change in the performance of the least educated in the Finnish labour market of the early 1990s seems to be the combined outcome of the economic crisis and a growing 'bumping down' problem.

KEY WORDS: bumping down, educational attainment, labour market per-formance, overeducation

ASPLUND, Rita – **LILJA**, Reija, **TYÖMARKKINASIIRTYMÄT SUOMESSA – ONKO TAUSTALLA MERKITYSTÄ?**, Helsinki, ETLA, Elinkeinoelämän Tutkimus-laitos, The Research Institute of the Finnish Economy, 1998, 30 s. (Keskusteluaiheita, Discussion Papers, ISSN, 0781-6847; no. 660)

TIIVISTELMÄ: Viimeisen 20 vuoden aikana Suomen työmarkkinat ovat olleet merkittävien rakenteellisten muutosten kourissa. Työvoiman rakenteessa ilmenneiden muutospaineiden voidaan olettaa koskettaneen erityisesti heikosti koulutettua väestön-osaa. Matalan peruskoulutuksen varassa olevien tilannetta on voinut lisäksi heikentää voimistunut ammattien vaatimustason nousu, ylikoulutus sekä heikosti koulutettujen korvaaminen paremmin koulutetulla työvoimalla.

Käsillä oleva tutkimus osoittaa, että pelkästään peruskoulun varassa olevat ovat onnistuneet melko joustavasti sopeutumaan työympäristössä tapahtuneisiin muutoksiin Suomessa, ainakin vakaan taloudellisen kasvun aikoina. Tämä myönteinen tilanne kuitenkin päättyi 1990-luvun alussa koetun syvän laman myötä. Heikosti koulutettujen mahdollisuudet pitää työpaikkansa tai vaihtaa ammattia laskivat merkittävästi. Tämän sijaan heidän kohtalonaan oli työttömyys tai varhaiseläkkeelle siirtyminen. Radikaali muutos, jonka kouriin matalan peruskoulutuksen saaneet joutuivat 1990-luvun suoma-laisilla työmarkkinoilla, näyttää johtuvan sekä taloudellisesta kriisistä että lisääntyneestä heikosti koulutettujen työmarkkinoilta syrjäytymisestä.

AVAINSANAT: työmarkkinoilta syrjäytyminen, koulutussaavutukset, työmarkki-noiden toiminta, ylikoulutus

CONTENTS

1 INTRODUCTION

There exists a huge body of international work on overeducation, considerably less on undereducation.[1] This strong focus on overeducation and its implications no doubt reflects the assertion of overeducation being a more acute problem than undereducation. Obviously this stems primarily from the substantial investments in education that have been made in the industrialised countries over the past decades and the possibility that the economy has been unable to absorb the steady increase in the supply of well-educated labour market entrants. A major consequence would be that a non-negligible proportion of the labour force is actually overeducated.[2] Further support to the perception that not all workers are employed in jobs in which their educational attainment is a requirement, is provided by the declining trend in the rates of return to education that has been observed in most industrialised economies over the past decades.

The literature on overeducation is fairly rich in its attempts to test various predictions derived from a number of theoretical approaches offering explanations for the mismatch between individual educational attainment and job requirements. The theoretical approaches most frequently adopted in this context are: human capital theory, occupational mobility theory, matching theory, job competition models, job screening models and, most recently, assignment frameworks incorporating both the supply and demand sides of the labour market.[3] These theoretical approaches provide insight on three main issues on the overeducation agenda: What determines the existence of overeducation and to what extent does overeducation compensate for lower levels of experience, tenure and training? Is overeducation a short-term or a longer-term phenomenon at the individual level? What is the rate of return to overeducation?

In recent years increasing attention has been paid also to another potential implication of overeducation, viz. the so-called ‘bumping down’ phenomenon. This term refers to a

[1] For a comprehensive review of the literature in this field, see Hartog (1997).

[2] Estimates of overeducation among the US workforce range up to 40 per cent (Duncan and Hoffman 1981, Sicherman 1991, Cohn and Khan 1995 and Hersch 1995). The share of overeducated is estimated at 31 per cent in Britain (Sloane et al. 1997), 16 per cent in the Netherlands (Hartog and Oosterbeek 1988) and 17 per cent in Spain (Alba-Ramirez 1993).

[3] For a discussion of these theoretical approaches to the overeducation phenomenon, see e.g. Hartog (1997) and Sloane et al. (1997).

situation in the labour market where the overeducated, in accepting jobs below their educational attainment, take jobs away from those with a lower education (which would still be sufficient for matching the requirements of the job in question). As a consequence these lower-skilled workers are shifted (bumped) down the job requirement scale and, as a final outcome, may be forced into non-employment.[4]

The present study focuses on the Finnish labour market and, particularly, on the labour market outcome of the least educated over a 20-year period (1975–95). These years saw dramatic changes in the economic activity level with a longish economic upturn shifting into an economic boom in the late 1980s and then suddenly, in 1991, into the deepest recession since the economic crises in the 1930s (Figure 1). In three years (1990–93) some half a million jobs were lost, resulting in an unemployment rate creeping close to 20 per cent (compared to one of the lowest in Europe – 3.5 per cent – in 1990). Weak signs of economic recovery were discernible already in 1993, mainly in the export sector. The unemployment rate remained largely unaffected, however.

The outstanding structural changes in the labour force that have occurred over this period, speeded up by the turbulent years in the early 1990s, can be expected to have hit the least educated part of the labour force especially hard. In view of the continuous growth in the demand for and supply of well-educated people, there is also the possibility that the labour market situation of the least educated has been further impaired by strengthening trends of occupational upgrading and overeducation also in the Finnish labour market. Addressing these crucial aspects makes up the major part of this study.

[4] See e.g. Borghans et al. (1998) for an overview of the ‘bumping down’ process.

Figure 1. Labour force and employment, 1975–95

The analysis is based on the *1970–95 Longitudinal Census Data File* compiled by Statistics Finland. The data file has been constructed by merging register data covering the whole population. Information is available for every five years since 1970 with the ``````````````````````` sample has been drawn, containing information on a total of 603 153 individuals for the whole period 1970–95.

The rest of the chapter is organised as follows. The next section displays trends in the educational structure of occupations over the 20-year period investigated. Section 3 depicts changes in the labour market status of the least educated over the past 20 years, while Section 4 aims to explore whether these changes might, at least in part, reflect a growing overeducation problem in the Finnish labour market. In Section 5, finally, an attempt is made to explain the observed transition patterns with the emphasis being on establishing whether or not the least educated in the Finnish labour market have faced a clear tendency of being crowded out of their 'traditional' jobs, possibly out of employment entirely. This econometric analysis is undertaken for two 10-year periods, 1975–85 and 1985–95,

[5] More information about the structure of the data file can be found in Statistics Finland (1995).

representing highly different levels of economic activity. Section 6 gives some concluding remarks.

2 TRENDS IN THE EDUCATIONAL STRUCTURE OF OCCUPATIONS

The subsequent descriptive analyses are restricted to 16–65 year-old full-year full-time[6] wage and salary earners with positive earnings.[7] Implementing various restrictions concerning the individuals' occupational status[8] produces a data set comprising for each year studied some 100 000 employees. These observations distributed over close to 300 occupational categories make up the basis for the description of general trends in occupational upgrading over the period 1975 to 1995 given below.

Calculating the average schooling level for each occupational category reveals a remarkable increase in the educational level of workers in practically all occupations over the years 1975–95 (Figure 2).[9] This has occurred irrespective of the occupation's relative position at the educational scale.[10] Simultaneously the difference in average education across the occupations has increased, the standard deviation being 2.1 schooling years in 1995 compared to 1.7 in 1975. It is noteworthy, however, that the ranking of occupational categories according to average education has changed only marginally. The rank correlation coefficient of occupations between the two years is extremely high (= 0.944).

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[6] Full-timers and part-timers are not distinguished in the data for 1970, 1990 and 1995. This is the main reason for not using 1970 as the 'starting' year in the analysis.

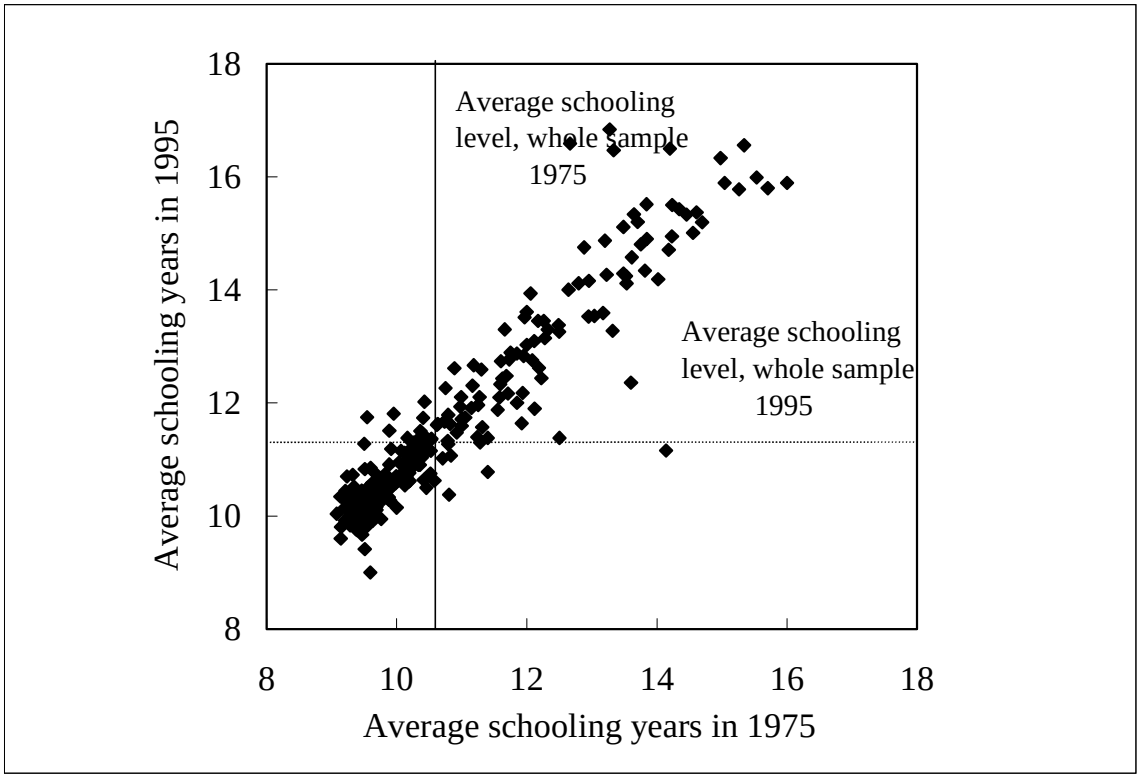
[7] Hence, apart from wage and salary earners with zero earnings also employees with entrepreneurial income have been excluded from the data used in the actual analysis. It may further be noted that replication of the analysis on a data set also including those employees who have worked less than 12 months during the year, did not change the results substantially.

[8] The occupational categories should be known, should comprise six or more observations and are not allowed to include a large share (20 per cent or more) of individuals recorded to have zero earnings. Excluding these 'outliers' leaves us with a total of 298 fairly homogeneous occupational categories.

[9] It is worthwhile mentioning that the dramatic increase in the average educational level of some occupations, as shown in Figure 2, is not primarily the result of a small number of observations. For example, the average educational level of the category of university teachers increased from 13,3 schooling years in 1975 (based on 198 observations) to no less than 16,8 schooling years in 1995 (based on 672 observations). This certainly reflects the reaction of the educational system to the rapid growth in the demand for high-quality university education in Finland over the past decades.

[10] Of the occupational categories under study only some 4 per cent had experienced a slight decline in the average educational level over the 20-year period from 1975 to 1995.

Figure 2. Comparison of average schooling years in 1975 and 1995, by occupational category



In 1975 the average educational level was rather low (below 10 years)[11] in a majority of occupations. Moreover, these occupations employed a considerable proportion of the labour force, some 52 per cent. By 1985 the share of occupations at the lowest end of the educational scale had declined to 25 per cent, and by 1995 to less than 9 per cent. The decline in employment in these occupations was equally dramatic: From over one-half in 1975 to one-fifth of the labour force in 1985 and to less than 2 per cent in 1995.

However, this dramatic drop from around 50 per cent in 1975 to below 9 per cent in 1995 in the share of the low-education occupations, does not mean that these occupations have disappeared altogether from the Finnish labour market. Instead in 1995 one can find them higher up the educational scale still employing a considerable proportion of the labour force (some 36 per cent in 1995).

[11] To be compared with completed primary schooling representing 9 years.

This improvement in the skills level of workers, not least within occupations at the lowest end of the educational scale, raises the question: What has become of the least educated employees?

3 LABOUR MARKET TRANSITIONS OF THE LEAST EDUCATED

This section provides a brief description of transitions in the Finnish labour market in general and of the least educated in particular. The analysis is based on two samples of individuals, one for 1975 and one for 1985. In both cases the mobility of the sample individuals is traced up to 1995.

Table 1. Transition probabilities of all employees, separately for the 1975 and 1985 samples

Transition category	Transitions for the 1975 sample, %-shares				Transitions for the 1985 sample, %-shares	
	1975–80	1975–85	1975–90	1975–95	1985–90	1985–95
Stayed in same occupation[a]	48.0	36.8	29.5	19.4	56.5	40.6
Change of occupation[b]	37.5	39.4	41.3	31.9	32.0	30.6
Unemployed	1.9	2.9	1.7	11.0	1.2	10.7
Student	1.0	0.3	0.5	0.9	1.1	1.8
Retired	4.5	11.1	18.6	25.8	5.1	11.1
Other	7.0	9.6	8.4	11.0	4.2	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notes: [a] No change in the individual's 3-digit occupational code.
[b] The individual's 3-digit occupational code is different 5, 10, 15 or 20 years later.

As can be seen from Table 1 (row 1), the overall probability of staying in the same occupation declines rapidly with the years spent in working life. A comparison of the two samples points to a clear weakening in this tendency, though.[12] Correspondingly the

[12] In the 1975 sample 48 per cent were in the same occupation five years later compared to 57 per cent in the 1985 sample.

probability of occupational mobility (row 2) has persistently been higher within the 1975 sample, except for the recession period in the early 1990s when it dropped to much the same level as for the 1985 sample (i.e. some 31 per cent). The possibility to leave for retirement does not seem to have been affected by the dramatic change in the economic activity level (the probability of being retired 10 years later is some 11 per cent for both samples). As is to be expected, the recession years differ from the boom years mainly in a much higher probability of becoming unemployed rather than of finding a new job.

Table 2 answers the question whether the least educated, i.e. those with at most a basic education (9 years or less), have faced a higher risk of employment instability than their more educated colleagues.[13] The table shows that this is certainly the case. But the table also indicates that their smaller propensity to stay in the same occupation and to qualify for another occupation is largely compensated for by the much higher 'risk' of leaving for retirement. In other words, the negative consequences of the ongoing occupational upgrading in the Finnish labour market have been dealt with mainly through the retirement system and to a lesser extent by pushing the least educated into unemployment.

Table 2. The relative risk of transition of the least educated as compared to the more educated (more than 9 years of schooling)

	1975 sample				1985 sample	
Transition category	1975–80	1975–85	1975–90	1975–95	1985–90	1985–95
Stayed in same occupation	0.90	0.77	0.68	0.54	0.91	0.72
Change of occupation	0.98	0.92	0.87	0.75	0.92	0.78
Unemployed	1.82	1.53	1.58	1.30	1.86	1.57
Student	0.73	0.83	0.79	0.66	0.53	0.57
Retired	2.65	2.61	2.24	1.79	3.96	3.24
Other	1.18	1.32	1.43	1.57	1.03	1.27

The propensities reported in Table 2 further indicate that the worsening of the labour market situation of the least educated has possibly been moderated also by the strong egalitarian feature of the Finnish education system providing all with a sound basic

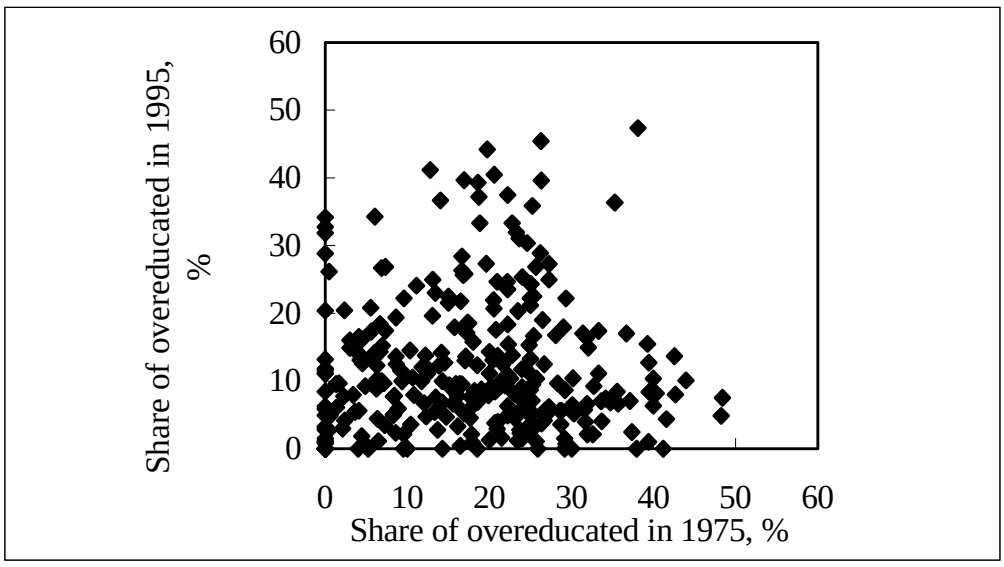
[13] Table 2 is constructed from tables similar to Table 1 above, one calculated for the least educated employees and one for employees with more than a basic education. Relating the percentage shares of the least educated to those of the better educated shows the risk of the least educated of being in a given labour market position relative to their more educated counterparts. An equally large share for both educational groups produces a value of one, indicating no difference in the relative risk. A value exceeding one points, in turn, to a higher relative risk of the least educated, and vice versa.

education. In that sense the least educated in Finland cannot be compared with the least educated in, for instance, the USA. In addition, also the least educated take active part in personnel training, albeit not to the same extent as the more educated.[14]

4 IS THERE A TENDENCY OF OVEREDUCATION?

As discussed in the outline, the continuous growth of the well-educated share of the labour force may have resulted in a situation with a growing share of employees being overeducated in their occupation also in the Finnish labour market. Such a tendency might have speeded up the worsening of the labour market status of the least educated. A simple way of shedding some light on this question is to compare the shares of overeducated in 1975 and 1995 for each occupational category. This is done in Figure 3 with the overeducated defined as those employees having an education exceeding the average educational level of the occupation plus one standard deviation.[15]

Figure 3. Share of overeducated in 1975 and 1995, by occupational category



[14] For more information on education, see the OECD publications *Education at a Glance*, and on personnel training, see statistics reported by Statistics Finland.

[15] The average educational level of the employees belonging to the occupation is, in other words, assumed to represent the skill requirements of that occupation. This method of defining overeducation dates back to Rumberger (1981a, 1981b) and Verdugo and Verdugo (1989). It is, however, by now a stylised fact that this measure produces lower estimates of overeducation than do more subjective measures derived from an explicit survey question on the educational attainment of individuals and the educational requirements to either obtain or perform their job.

Between 1975 and 1995 the share of overeducated declined in as much as 60 per cent of the investigated occupations. This declining trend in overeducation is evident also from the fact that in 1975, a share of overeducated exceeding 30 per cent was found in 14 per cent of the occupations and 20 years later in only 7 per cent of them.[16]

It seems obvious that the recession years in the early 1990s 'solved' the overeducation problem by forcing especially the least educated into unemployment or retirement, thereby making the occupations educationally more homogeneous. Furthermore, the very low correlation (= 0.027) between the ranking of occupations according to their share of overeducated in 1975 and 1995 suggests that the change in the share of overeducated across occupations has not occurred in a systematic way.

It may, finally, be asked whether the share of overeducated is related to the average educational level of the occupation or the unemployment rate among those belonging to the occupation. A strong negative correlation between the share of overeducated and the average educational level across occupations as well as a strong positive correlation between occupational shares of overeducated and occupation-specific unemployment rates could be interpreted as an indication of the least educated being crowded out in the Finnish labour market. Furthermore, in view of the large supply of highly educated youths and the fact that Finnish women are on average better educated than Finnish men, one could expect young people and women to be over-represented among the overeducated. However, the

Table 3. Dependency between the occupations' share of overeducated and selected features

Year	Correlation between the share of overeducated and			
	average educational level	unemployment rate	share of youths among overeducated	share of women among overeducated
1975	–0.336*	–	0.393*	–0.046
1980	–0.351*	0.146*	0.380*	0.093
1985	–0.288*	–0.019	0.270*	0.114*
1990	–0.243*	0.137*	0.160*	0.161*
1995	–0.016	0.078	0.055	0.018

Note: * indicates significance at the 5 % level.

[16] The corresponding share was still close to 15 per cent in 1990.

correlation coefficients reported in Table 3 give no support to these hypotheses However, the correlation coefficients reported in Table 3 give only weak support to these hypotheses; a majority of the correlation coefficients are small and of the expected sign, but statistically significant. It is noteworthy, though, that all four correlations are insignificant for 1995.

5 EXPLAINING LABOUR MARKET TRANSITION PATTERNS

5.1 Methodology

To explore how labour market transitions depend on individual background factors we focus on analyzing two samples, one collected in 1975 and the other in 1985.[17] The labour market performance of individuals is evaluated by looking at their labour market status after a period of ten years. The subsequent empirical analyses are restricted to four types of transitions; to those in which an individual stayed in the same occupation, changed occupation, became unemployed, or retired over the 10-year observation period. These transitions cover over 90 per cent of all transitions (see Table 1).[18] Focusing on the above mentioned groups leaves us with a sample of 84 108 individuals for the period 1975–85 and 111 449 individuals for the period 1985–95.

In modelling the transition probabilities a multinomial logit model is used. The model is based on the assumption that the transitions are mutually exclusive. This assumption, which is in many ways restrictive, is in accordance with our decision to exclude the heterogeneous group of other transitions from our analyses.

The probability that transition s (s = 2,3,4) occurs for a person j can be written as follows:

$$(1) \qquad \Pr(I_j = s) = \frac{\exp(z_j \alpha_s)}{1 + \sum_{k=2}^{4} \exp(z_j \alpha_k)} ,$$

[17] As before these samples are restricted to 16–65 year-old, full-year, full-time wage earners and salaried employees.

[18] Individuals in other transition categories were excluded due to the fact that these categories were very heterogeneous including students, housewives, permanently ill and people who died during the observation period. Despite this, in our preliminary analyses, we did include these categories but it appeared that the background variables could not explain the probability of being selected into these groups. It seems, therefore, that these groups represent a fairly random sample in terms of observed characteristics in our data.

where z_j represents the vector of factors influencing the j^{th} person's transition probability and α_s represents his/her vector of parameters for transition s. In order to identify the parameters transition $s = 1$ (stayed in the same occupation) is chosen as a base case, i.e. it is assumed that $\alpha_1 = 0$. The model is estimated using maximum likelihood methods.

Both demand- and supply-side factors influence the above transition probabilities. Therefore, the estimated multinomial logit model can be regarded as a reduced-form model capturing the combined effect of both types of factors. In order to highlight potential 'bumping down' effects we have supplemented the models with as many explanatory variables as possible which could be expected to track down potentially disadvantaged groups in the Finnish labour market. The included individual characteristics are: age, education, gender, marital status and region. The job-related characteristics are: relative wage position measured by wage quintiles, overeducation in one's own occupation, public versus private sector and socio-economic status.

Estimation results for the period 1975–85 are presented in Appendix 1 and for the period 1985–95 in Appendix 2. It appears from the appendices that the chosen variables are statistically highly significant explanatory factors for the observed labour market transitions. The χ-squared tests show that the null hypotheses that the explanatory variables do not have any influence on the transition probabilities are strongly rejected in both samples. This is also reflected in the high values of t-statistics that most of the variables have received in the estimations. Next these results are discussed in more detail.

5.2 Average transition patterns

To get an overall picture of the general transition patterns in our data sets average transition probabilities are calculated from the estimation results of the logit model and the mean values of explanatory variables (Table 4). These numbers thus represent transition probabilities of a person with an 'average background' in the two samples. Accordingly they differ from the crude probabilities represented earlier in Table 1. These probabilities differ from those in Table 1 also in the sense that they are conditional on the fact that one of the four transitions specified above had occurred.

Table 4 shows that an average individual in 1975 had a 44 per cent probability of staying in the same occupation and an almost 50 per cent probability of changing occupation over the 10-year period to follow. Thus the steady economic growth during these years increased the possibility of making a career move.[19] There was only a three per cent chance for the average individual to become unemployed, and a relatively modest chance, about 3.5 per cent, to retire. It appears that for the average employee the period 1975–85 represented quite mobile labour markets in Finland.

Table 4. Average transition probabilities

	Same occupation %	Change of occupation %	Unemployed %	Retired %
1975–85	43.96	49.44	3.06	3.54
1985–95	49.18	34.98	11.79	4.05

The situation changed markedly during the period 1985–95 when the Finnish economy experienced its deepest recession ever. The mobility among the employed dropped dramatically and labour market adjustment took place mainly through unemployment. The average individual in 1985 had an almost 50 per cent chance to remain in the same occupation but only a 35 per cent chance to change occupation. The probability of becoming unemployed in ten years time was 12 per cent, a four times higher figure than for the average employee ten years earlier. The propensity to retire increased also slightly.

Table 4 provides us with an overall picture of labour mobility patterns in the two sample periods. It does not, however, reveal how and to what extent different groups of employees have been subjected to adjustment. In the next section we focus on the role of individual characteristics in this process.

[19] This result is in accordance with previous literature in which labour turnover is found to be procyclical (see e.g. Anderson and Meyer, 1994).

5.3 The role of individual characteristics

Age has a major impact on transition probabilities.[20] It appears from Figures 4 and 5 that the young and the old have markedly different mobility patterns in the labour market. The younger you are, the more likely you are to change occupation. Between 1975 and 1985 as many as 70 per cent of the 16 year-olds (with average characteristics) changed occupation. For the period 1985–95 this share had dropped to about 60 per cent. Between 1975 and 1985 more than 50 per cent of those under 30 years of age changed occupation. In the latter period this share was even higher. These figures show that among young age groups the major channel to labour market adjustment is occupational mobility. This is also reflected in the fact that unemployment rates are below the average among young employees.

When people push towards the age of 30 the labour market situation starts to become more stable. Between 30–40 years of age the propensity to remain in the same occupation for (at least) a period of ten years peaks. About 50 per cent of the employees in this age group remained in the same occupation over the two 10-year observation periods. It seems that for the majority of people this phase of life means a period of stability and employment security.

After people reach the age of 40 the situation changes. It appears that between 40–50 years of age the propensity to remain employed decreases significantly. In mid 40s the risk of becoming unemployed peaks and in late 40s the propensity to retire starts to rise sharply. Labour market adjustment occurs through unemployment and retirement rather than through occupational change. Middle age can thus be characterised as being a period when insecurity in terms of employment and health becomes a reality of life.

[20] These transition probabilities are evaluated at the mean values of all other variables, and thus refer to individuals who differ in terms of age but have otherwise similar characteristics. A similar procedure is adopted when calculating transition probabilities for the other variables investigated, i.e. they are also evaluated at the mean values of all other variables.

Figure 4. Transition probabilities by age, 1975–85, %

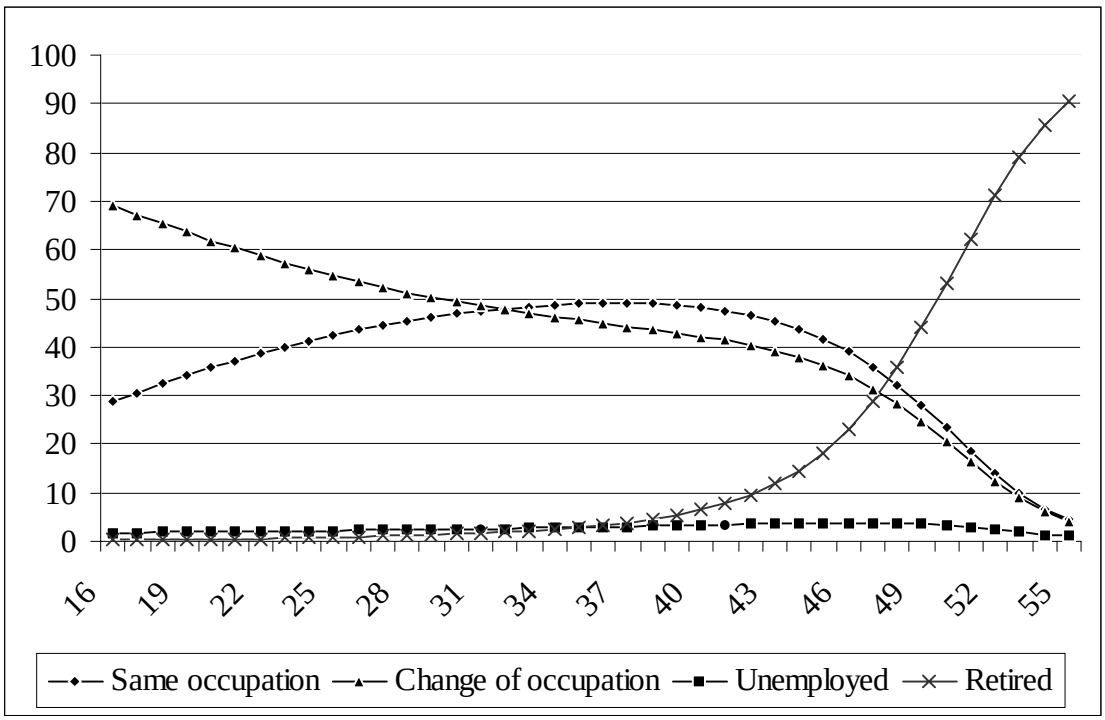
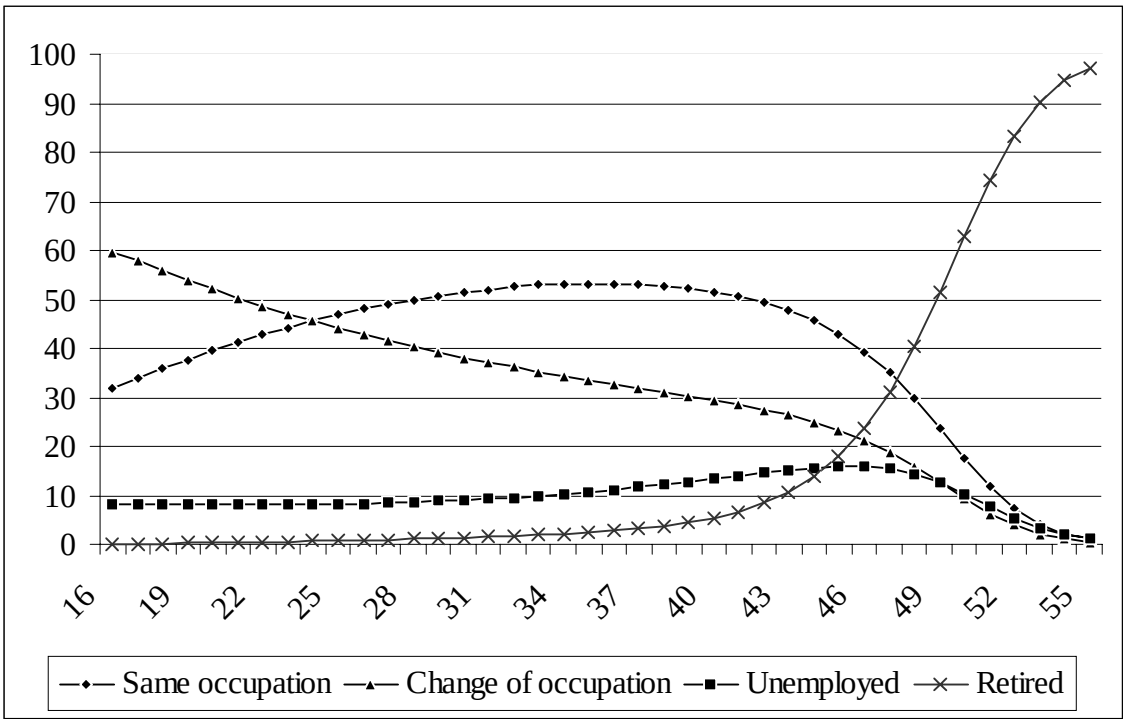


Figure 5. Transition probabilities by age, 1985–95, %



In Finland the statutory pension age is 65 years in the private sector and 63 years in the public sector. Most people retire before they reach their statutory pension age. It appears from Figures 4 and 5 that when people reach the age of 50 their probability of retiring in ten years time becomes higher than that of remaining in the labour force. This probability increases rapidly when people grow older (partly because they approach their statutory pension ages). After the age of 50 occupational mobility becomes negligible and retirement seems to be the only relevant channel of labour market adjustment.

To study the potential presence of a 'bumping down' phenomenon in the Finnish labour market we have calculated transition probabilities for different educational groups (Table 5). A higher level of education appears to bring along a more stable labour market career. Employees with a graduate or post-graduate degree had an over 50 per cent chance of being in the same occupation ten years later whereas among employees with a basic education this probability was around 40 per cent.

The steady economic growth during the period 1975–85 made it possible for the least educated employees to adjust to changes in the labour market through occupational change. These employees had an over 50 per cent chance of shifting to another occupation during these years and only a three per cent chance of being hit by unemployment. However, the deep recession in the early 1990s changed the situation dramatically. Between 1985 and 1995 there was only a 30 per cent chance that employees with a basic education changed occupation, and an almost 15 per cent chance that they became unemployed (five times as high a number as in the former period). Among these employees the propensity to become unemployed was 2.5 times as high as in the group of employees with a post-graduate degree. Hence, the lower the level of education, the higher the risk of unemployment. The propensity to retire early is also highest among the least educated. These results are in accordance with the 'bumping down' hypothesis stating that the unskilled are most likely to lose their jobs if labour markets are slack at the same time as skills are upgraded.[21]

[21] However, these results do not provide direct measures of the 'bumping' down effect and therefore indicate only indirectly the existence of this phenomenon in the Finnish labour market.

Table 5. Transition probabilities by education

	Same occupation %	Change of occupation %	Unemployed %	Retired %
Basic education				
1975–85	39.98	52.87	3.40	3.75
1985–95	44.83	35.97	14.72	4.47
Secondary education				
1975–85	47.99	45.85	2.78	3.37
1985–95	50.21	34.56	11.28	3.95
Graduate degree				
1975–85	52.52	41.48	2.82	3.18
1985–95	57.31	30.11	8.48	4.10
Post-graduate degree				
1975–85	54.81	41.74	1.26	2.19
1985–95	53.66	38.14	5.93	2.27

It is a well-documented fact that the labour market position of men and women differs in many crucial respects. Transition probabilities for men and women are therefore reported in Table 6. It appears that women have a higher tendency to hold on to the same occupation, whereas the risk of unemployment and the propensity to retire is higher among men. These differences are not marked, however.

Table 6 further reveals an interesting difference in the labour market adjustment of men and women when the economic situation worsens. Even though the risk of unemployment and retirement is higher for men in absolute terms, the relative increase in these risks was markedly higher for women during the latter period. Between 1985 and 1995 the risk of women of becoming unemployed was almost five times as high as between 1975 and 1985. For men the corresponding increase was threefold. At the same time the propensity to retire grew by about 25 per cent among women and by only 8 per cent among men. Women thus seem to have lost some of their relative advantage in terms of employment during the latter period when the situation in the labour market became tougher.

Table 6. Transition probabilities by gender

	Same occupation %	Change of occupation %	Unemployed %	Retired %
Women				
1975–85	46.23	48.76	2.26	2.75
1985–95	51.59	34.22	10.75	3.45
Men				
1975–85	42.04	49.76	3.89	4.31
1985–95	46.95	35.60	12.78	4.66

Marital status has also proved to have an impact on the labour market performance of individuals. In Table 7 we report how marital status influences transition probabilities in our two samples.

Table 7. Transition probabilities by marital status

	Same occupation %	Change of occupation %	Unemployed %	Retired %
Married				
1975–85	44.39	49.63	2.76	3.22
1985–95	45.95	41.31	9.33	3.41
Single				
1975–85	43.27	49.10	3.57	4.07
1985–95	47.00	34.34	14.19	4.47

Between 1975 and 1985 married and single people had relatively similar transition patterns. The married had slightly lower propensities to become unemployed and to retire than the singles. Moreover, during the period 1985–95 when the economic situation worsened both the unemployment risk and the pension propensity rose more sharply among the singles than among the married. These results suggest that being a single brings along an additional insecurity of employment that an otherwise similar married person does not have.

In evaluating the performance of labour markets one cannot neglect regional differences. In Table 8 an attempt is made to take these differences into account by calculating transition probabilities separately for Southern Finland and the rest of the country. Southern Finland represents a region in which employment growth has been higher than average.

Table 8. Transition probabilities by region

	Same occupation %	Change of occupation %	Unemployed %	Retired %
Southern Finland				
1975–85	40.70	54.05	2.28	2.97
1985–95	44.54	38.97	12.65	3.83
Rest of the country				
1975–85	45.34	47.35	3.49	3.82
1985–95	51.37	33.14	11.36	4.14

Between 1975 and 1985 an average employee living in Southern Finland had a higher propensity to change occupation and a lower propensity to be unemployed or retired than an otherwise similar person living elsewhere. Between 1985 and 1995 the situation changed, however. In particular, the risk of becoming unemployed became higher in the southern part than in the rest of the country. Also in relative terms the situation worsened: a person living in the south was 5.6 times more likely to become unemployed compared to the 1975–85 period. The corresponding increase in the risk of unemployment was only threefold in the rest of the country.

These findings reflect, most likely, the regional labour market policy being practised in Finland. Unemployment rates have persistently been lower than the average in the southern part of Finland. Therefore, in relative terms this region has received less funding from labour market programmes than the rest of the country. This has, in turn, allowed a sharper than average rise in unemployment in this region during the turbulent period of 1985–95.

5.4 The role of job-related characteristics

The previous section has shown that individual characteristics do influence labour market performance. Let us next focus on characteristics that are more closely related to the jobs that these individuals hold.

One could assume that the 'bumping down' tendency that was detected among the least educated employees could have implications also for individuals holding low-paid jobs. To study the effect of the wage level on labour market performance, transition probabilities are reported for each wage quintile in Table 9.

Table 9. Transition probabilities by wage quintile

	Same occupation %	Change of occupation %	Unemployed %	Retired %
First				
1975–85	37.98	51.30	5.64	5.08
1985–95	38.58	36.77	19.53	5.12
Second				
1975–85	40.41	51.77	3.93	3.89
1985–95	44.52	36.59	14.67	4.23
Third				
1975–85	43.30	50.28	3.02	3.40
1985–95	50.09	34.8	11.57	3.53
Fourth				
1975–85	46.63	48.19	2.20	2.98
1985–95	55.00	31.94	9.31	3.75
Fifth				
1975–85	50.25	44.91	1.98	2.87
1985–95	55.98	33.15	7.24	3.63

The higher up in the wage hierarchy a person is the more stable his/her labour market career appears to be. Employees in the fifth (i.e. highest) wage quintile in 1975 had an over 50 per cent chance of being in the same occupation ten years later, whereas this probability was only 38 per cent for those in the first (i.e. lowest) quintile. Simultaneously the

advantageous economic environment made it possible for more than half of the low-paid employees to change occupations. But it also appears that even in tight labour markets low-paid employees have a significantly higher than average risk of unemployment or retirement.

When the economic situation worsened in the early 1990s the low-paid employees experienced high levels of employment insecurity. The propensity to become unemployed rose to 20 per cent. The unemployment risk was 2.7 times as high in the first quintile as it was in the fifth quintile. These results are in line with those reported for the different educational levels since education and wages are highly correlated. Thus it seems that low-paid employees have been subjected to tough adjustments over both observation periods. Our results suggest that there have been factors at force in the labour market that have pushed unskilled employees at the low-end of the wage spectrum towards unemployment and out of the labour market.

A phenomenon that is closely related to skills upgrading and 'bumping down' is overeducation. To study the implications of overeducation on individual behaviour transition, probabilities for those who are overeducated in their occupations are reported in Table 10.[22]

Table 10. Transition probabilities by overeducation

	Same occupation %	Change of occupation %	Unemployed %	Retired %
Overeducated				
1975–85	35.66	57.87	3.16	3.31
1985–95	40.56	43.55	12.28	3.61
Non-overeducated				
1975–85	45.85	47.54	3.03	3.58
1985–95	50.53	33.69	11.67	4.11

If a person is overeducated in his/her occupation he/she turns out to be much more likely to change occupation than a person whose job is in line with his/her educational attainment

[22] As before a person is defined to be overeducated if his/her years of education are more than one standard deviation above the average years of education in his/her occupational group.

level. The propensity to change occupation is 10 percentage points higher for the overeducated than for the others. For example, during the period 1975–85, when the economy grew steadily, the overeducated had a 58 per cent probability of shifting to another occupation.

Overeducation does not seem to protect from unemployment, however. On the contrary, the overeducated are found to be slightly more likely to become unemployed than the non-overeducated. All in all, overeducation does not bring any additional advantages with respect to overall labour market performance. Those who are better matched do perform at least as well as those who are overeducated.

When analyzing labour market transitions it is not irrelevant in which sector the individual is working. Therefore, in Table 11 transition probabilities are reported separately for the public and the private sector.

It appears that individuals in public-sector employment have faced much more stable careers than those employed in the private sector. Between 1985 and 1995 there was an over 15 per cent probability for private-sector employees to become unemployed whereas this probability was only 7 per cent in the public sector. These differences reflect the fact that the deep recession in the early 1990s hit private-sector employment first and spread to the public sector only later, in the mid-1990s.

Table 11. Transition probabilities by sector

	Same occupation %	Change of occupation %	Unemployed %	Retired %
Public				
1975–85	48.74	45.99	1.62	3.65
1985–95	55.08	33.61	6.69	4.63
Private				
1975–85	42.20	50.49	3.82	3.49
1985–95	45.85	35.14	15.27	3.73

Above we have compared similar employees who differed in each comparison only with respect to the characteristic under study to explore which individual and job-related characteristics may or may not have been important for the labour market performance of

individuals. To deepen our understanding of the potential employee groups that might have been most severely hit by changes in the labour market, we focus next on different socio-economic groups. In Table 12 the percentage distribution of employees according to socio-economic status is presented for both sample years, 1975 and 1985.

The Finnish labour market could still in 1975 be characterised as a blue-collar market. Over 50 per cent of the full-time workers were manual workers. The situation changed rapidly over the next 10-year period. The share of manual workers dropped by 15 per cent, and already in 1985 a majority of the full-time workers were salaried employees. From 1975 to 1985 the share of upper-level employees grew the fastest, by 47 per cent, suggesting that significant skills upgrading had taken place in the Finnish labour market.

Even though the overall share of lower-level employees increased during 1975–85 it can be seen from Table 12 that this was not true for all employee groups. The share of clerical and sales workers with independent work dropped by almost 20 per cent. This reflects the occurrence of hierarchical restructuring in firms, which hit lower-level employee posts relatively hard.

Table 12. Socio-economic status of employees, percentage distribution

	1975 %	1985 %
UPPER-LEVEL EMPLOYEES		
Upper management	2.01	2.61
Employees in research & planning	2.84	4.00
Employees in education & training	2.64	3.03
Other senior officials	2.23	4.69
Subtotal	9.72	14.33
LOWER-LEVEL EMPLOYEES		
Supervisors	5.81	7.64
Clerical and sales workers, independent work	17.24	13.92
Clerical and sales workers, routine work	5.44	7.00
Other lower-level employees	7.78	10.95
Subtotal	36.27	39.51
MANUAL WORKERS		
Workers in agriculture, forestry, fishing	1.19	1.44
Distribution and service workers	14.77	13.81
Manufacturing workers	27.72	21.94
Other production workers	10.34	8.98
Subtotal	54.02	46.16

To display labour market transitions for the different socio-economic groups we have chosen an approach that differs slightly from our previous analyses. Rather than comparing 'otherwise similar' individuals we compare 'typical' employees in each group. This means that the subsequent transition probabilities are evaluated by using mean values of variables that are calculated separately for each socio-economic group rather than using overall sample means as we did before.

The propensity to remain in the same occupation over the two observation periods is reported for each socio-economic group in Table 13. The single socio-economic group with the highest propensity to remain in the same occupation is that of teachers. Between 1975 and 1985 over 70 per cent of the employees in education and training remained in the same occupation and between 1985 and 1995 over 85 per cent did so.

Table 13. Propensity to remain in the same occupation

	1975–85 %	1985–95 %
UPPER-LEVEL EMPLOYEES		
Upper management	33.55	37.96
Employees in research & planning	42.52	53.26
Employees in education & training	71.07	85.33
Other senior officials	52.24	61.02
LOWER-LEVEL EMPLOYEES		
Supervisors	43.48	45.00
Clerical and sales workers, independent work	38.66	42.32
Clerical and sales workers, routine work	47.01	42.30
Other lower-level employees	54.13	65.09
MANUAL WORKERS		
Workers in agriculture, forestry, fishing	49.60	33.66
Distribution and service workers	50.87	52.15
Manufacturing workers	38.49	39.49
Other production workers	38.62	41.85

During the former period upper management showed the lowest propensity to remain in the same occupation, which no doubt reflects the advantageous career possibilities that emerged in the strong economic upturn. Over the 1985–95 period the situation changed, however. Now the lowest propensity to remain in the same occupation was found among

workers in agriculture and related activities: only about one-third of them remained in the same occupation. On the whole manual workers, except for those in distribution and services, appear to be the least likely to keep their old occupations in turbulent economic periods. Whether this is a reflection of higher than average occupational mobility is highlighted in Table 14.

In both periods upper management experienced the highest propensity to change occupation, reflecting this group's higher than average career mobility. When the economic situation was beneficial during the years 1975–85 as many as 60 per cent of those in upper management changed occupation. Even between 1985 and 1995 almost 50 per cent of them managed to do so. Hence, in this socio-economic group the low probability to remain in the same occupation reflects to a large extent occupational mobility.

The lowest propensity to shift to another occupation appears to be among employees in education and training. Less than 10 per cent of these employees did so during the latter observation period. This suggests that in this group of employees, which consists mainly of teachers, occupational choices are rather limited.

Table 14. Propensity to change occupation

	1975–85 %	1985–95 %
UPPER-LEVEL EMPLOYEES		
Upper management	60.76	49.31
Employees in research & planning	55.32	40.88
Employees in education & training	26.28	9.66
Other senior officials	43.74	31.56
LOWER-LEVEL EMPLOYEES		
Supervisors	49.16	38.11
Clerical and sales workers, independent work	56.45	43.00
Clerical and sales workers, routine work	49.63	42.88
Other lower-level employees	41.93	25.74
MANUAL WORKERS		
Workers in agriculture, forestry, fishing	35.45	44.98
Distribution and service workers	39.21	25.84
Manufacturing workers	51.36	35.47
Other production workers	53.57	36.86

In Table 15 unemployment propensities are reported for each socio-economic group. Between 1985 and 1995, during which the Finnish economy plunged into its deepest recession ever, the most severely hit group of employees was manufacturing workers: 21 per cent of those still working in 1985 were unemployed in 1995. Also typical agricultural and related workers and other production workers had a high (16 per cent) probability of becoming unemployed during this period.

The relatively high unemployment rate among upper management compared to that of other upper-level employees reflects the hierarchical restructuring which occurred in internal labour markets during these periods, affecting managerial level more than other upper-level employee groups. The unemployment risk rose sharply also among lower-level employees between the two periods. For example, in the latter period the risk of unemployment became fivefold among supervisors. These results suggest that in relative terms the changes in the internal labour markets hit middle-level management more severely than upper management.

Table 15. Propensity to become unemployed

	1975–85 %	1985–95 %
UPPER-LEVEL EMPLOYEES		
Upper management	2.57	8.31
Employees in research & planning	1.1	4.75
Employees in education & training	0.51	1.26
Other senior officials	1.18	4.84
LOWER-LEVEL EMPLOYEES		
Supervisors	2.41	12.00
Clerical and sales workers, independent work	3.03	12.37
Clerical and sales workers, routine work	1.85	11.70
Other lower-level employees	1.03	5.52
MANUAL WORKERS		
Workers in agriculture, forestry, fishing	7.47	16.31
Distribution and service workers	3.49	14.45
Manufacturing workers	5.32	20.71
Other production workers	3.98	16.61

The propensity to retire has been relatively small in the different socio-economic groups (Table 16). Between 1975 and 1985 the highest retirement probability (7.5 per cent) was in

the group of agricultural and related workers. The lowest retirement probability, only one per cent, was among employees engaged in research and planning. Between 1985 and 1995, in contrast, typical workers in distribution and services were the most likely to retire, whereas employees in research and planning still had the smallest retirement probabilities. As was the case with unemployment the typical manual workers are the ones who are most likely to retire, too. Also in the groups of upper management and supervisors the option of retirement has been taken more often than average. This may also reflect the restructuring of internal labour markets that has taken place during the past 10–15 years.

Table 16. Propensity to retire

	1975–85 %	1985–95 %
UPPER-LEVEL EMPLOYEES		
Upper management	3.12	4.42
Employees in research & planning	1.06	1.12
Employees in education & training	2.14	3.76
Other senior officials	2.84	2.58
LOWER-LEVEL EMPLOYEES		
Supervisors	4.94	4.89
Clerical and sales workers, independent work	1.86	2.32
Clerical and sales workers, routine work	1.50	3.13
Other lower-level employees	2.92	3.65
MANUAL WORKERS		
Workers in agriculture, forestry, fishing	7.47	5.05
Distribution and service workers	6.43	7.57
Manufacturing workers	4.83	4.33
Other production workers	3.83	4.68

6 CONCLUDING REMARKS

The Finnish labour market has seen a dramatic increase in occupational skills over the past few decades. The educational level has increased especially in occupations that were dominated by the least educated still some 20 years ago. Nevertheless the low-skilled workers seem to have managed to keep their jobs or to shift to another occupation, at least in times of steady economic growth. The fairly smooth adjustment of the least educated to

the changing working environment has been made possible by the high standards of Finnish compulsory schooling and the training they have received during their working lives. For older employees a generous retirement system has opened an alternative way of adjustment.

The deep recession in the early 1990s seems to have put an end to this favourable situation, however. The sudden loss of half a million jobs hit the least educated especially hard. Their probability of keeping their jobs as well as of changing occupations declined substantially. Instead their fate was to an increasing extent to become unemployed or retired.

The declining employment among the least educated boosted the ongoing upgrading of occupational skills. Simultaneously those employees being overeducated in their occupation showed an increasing tendency of shifting to jobs that better matched their qualifications. These trends are, in turn, reflected in less overeducation within occupations in 1995 compared to the situation in 1975. In other words, occupations are today more homogeneous when it comes to educational attainment than some 20 years ago. A cautious conclusion would be that the radical change in the performance of the least educated in the Finnish labour market of the early 1990s, is the combined outcome of the economic crisis and a growing ‘bumping down’ problem.

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Appendix 1. Multinomial logit estimation results for labour market transitions between 1975 and 1985

Variable	Change of occupation	Unemployed	Retired
Constant	3.4364 (0.3530)	-0.2720 (0.7823)	-6.8161 (1.0077)
Age	-0.1860 (0.0335)	-0.0499 (0.0737)	0.3298 (0.0838)
Age^2	0.3527 (0.1003)	0.0324 (0.2179)	-1.0186 (0.2214)
Age^3	-0.0214 (0.0097)	0.0147 (0.0207)	0.1428 (0.0189)
Woman	-0.1155 (0.0210)	-0.6382 (0.0541)	-0.5438 (0.0453)
Married	-0.0149 (0.0177)	-0.2831 (0.0468)	-0.2586 (0.0397)
Secondary education	-0.3252 (0.0208)	-0.3839 (0.0606)	-0.2874 (0.0537)
Graduate degree	-0.5156 (0.0494)	-0.4614 (0.1827)	-0.4381 (0.1226)
Post-graduate degree	-0.5519 (0.0647)	-1.3114 (0.3368)	-0.8519 (0.1687)
Overeducated	0.4479 (0.0247)	0.2931 (0.0727)	0.1741 (0.0695)
Second wage quintile	-0.0529 (0.0252)	-0.4239 (0.0589)	-0.3277 (0.0556)
Third wage quintile	-0.1511 (0.0265)	-0.7565 (0.0662)	-0.5327 (0.0574)
Fourth wage quintile	-0.2676 (0.0288)	-1.1442 (0.0751)	-0.7389 (0.0615)
Fifth wage quintile	-0.4130 (0.0335)	-1.3283 (0.0882)	-0.8490 (0.0696)
Upper management	0.7284 (0.0642)	0.2185 (0.1886)	-0.5246 (0.1400)
Research & planning	0.5874 (0.0599)	0.0321 (0.2239)	-0.6756 (0.1604)
Education & training	-0.3492 (0.0682)	-0.8664 (0.3259)	-0.8345 (0.1565)
Other senior officials	0.0316 (0.0606)	-0.4001 (0.2306)	-0.2797 (0.1423)
Supervisors	0.1793 (0.0416)	-0.1681 (0.1214)	-0.1559 (0.0862)
Independent work	0.0481 (0.0314)	-0.1112 (0.0798)	-0.3782 (0.0718)
Routine work	-0.2616 (0.0413)	-0.4142 (0.1290)	-0.5156 (0.1031)
Other lower-level employees	-0.2045 (0.0392)	-0.6102 (0.1400)	-0.1275 (0.0868)
Workers in Agriculture & related	-0.7337 (0.0787)	-0.1657 (0.1491)	-0.2382 (0.1466)
Distribution & services	-0.5509 (0.0320)	-0.3695 (0.0800)	-0.2048 (0.0647)
Manufacturing	-0.0496 (0.0288)	0.1521 (0.0684)	0.2181 (0.0607)
Public sector	-0.2374 (0.0201)	-1.0038 (0.0734)	-0.1006 (0.0427)
Southern Finland	0.2404 (0.0174)	-0.3162 (0.0523)	-0.1444 (0.0386)
Log-likelihood function	-71555.56		
χ-squared test (d.f. 78)	40714.45		

Note: Standard errors of coefficients are in parentheses.

Appendix 2. Multinomial logit estimation results for labour market transitions between 1985 and 1995

Variable	Change of occupation	Unemployed	Retired
Constant	3.4316 (0.5039)	2.6807 (0.6239)	-13.9100 (1.3857)
Age	-0.1961 (0.0465)	-0.2023 (0.0569)	0.9693 (0.1121)
Age^2	0.3632 (0.1383)	0.4475 (0.1668)	-2.9668 (0.2941)
Age^3	-0.0227 (0.0133)	-0.0195 (0.0158)	0.3365 (0.0252)
Woman	-0.1338 (0.0186)	-0.2679 (0.0264)	-0.3949 (0.0408)
Married	-0.0458 (0.0156)	-0.3973 (0.0222)	-0.2492 (0.0339)
Secondary education	-0.1536 (0.0179)	-0.3796 (0.0243)	-0.2386 (0.0379)
Graduate degree	-0.4238 (0.0397)	-0.7977 (0.0728)	-0.3327 (0.0953)
Post-graduate degree	-0.1212 (0.0486)	-1.0891 (0.1087)	-0.8591 (0.1347)
Overeducated	0.4764 (0.0236)	0.2707 (0.0356)	0.0921 (0.0642)
Second wage quintile	-0.1480 (0.0231)	-0.4291 (0.0308)	-0.3353 (0.0540)
Third wage quintile	-0.3160 (0.0242)	-0.7845 (0.0334)	-0.6330 (0.0549)
Fourth wage quintile	-0.4952 (0.0259)	-1.0951 (0.0365)	-0.6672 (0.0570)
Fifth wage quintile	-0.4758 (0.0298)	-1.3641 (0.0436)	-0.7181 (0.0644)
Upper management	0.6532 (0.0529)	-0.0059 (0.0881)	-0.2367 (0.1164)
Research & planning	0.2379 (0.0492)	-0.1936 (0.0903)	-0.9269 (0.1382)
Education & training	-1.2380 (0.0729)	-1.4197 (0.1747)	-0.9347 (0.1322)
Other senior officials	-0.1903 (0.0451)	-0.4886 (0.0782)	-0.4607 (0.1057)
Supervisors	0.2234 (0.0358)	-0.0285 (0.0512)	-0.3349 (0.0768)
Independent work	0.1749 (0.0313)	-0.2992 (0.0435)	-0.4708 (0.0717)
Routine work	0.2533 (0.0368)	-0.0771 (0.0531)	-0.0748 (0.0845)
Other lower-level employees	-0.5063 (0.0346)	-0.6921 (0.0552)	-0.3226 (0.0742)
Workers in Agriculture & related	0.3772 (0.0653)	0.1351 (0.0891)	0.3484 (0.1393)
Distribution & services	-0.6138 (0.0319)	-0.4350 (0.0420)	-0.1380 (0.0639)
Manufacturing	0.0317 (0.0291)	0.1694 (0.0376)	0.1319 (0.0617)
Public sector	-0.2280 (0.0179)	-1.0088 (0.0308)	0.0304 (0.0385)
Southern Finland	0.3047 (0.0159)	0.2499 (0.0233)	0.0664 (0.0350)
Log-likelihood function	-105674.60		
χ-squared test (d.f. 78)	62893.12		

Note: Standard errors of coefficients are in parentheses.