



The Ageing Workforce and Labour Market Mobility

- Do Mobility Patterns Differ between Age Groups and Welfare Regimes? -

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The European Panel Analysis Group (EPAG) is a consortium of European social and economic researchers who have been collaborating since 1990 in the development and analysis of household panel surveys in the European Union. Most recently it has been engaged in the study of flexible labour and its impact on earnings and poverty under a Eurostat contract, and a programme of research on social exclusion as part of the EU's Targeted Socio-Economic Research programme. The group has set up new comparative datasets based on five-year sequences of the British, German and Dutch national household panels, and is analysing the early data from the European Community Household Panel (ECHP). Most of the research to date has been in the fields of family formation, employment, household income and 'deprivation'.

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ABSTRACT

The ageing of the population will substantially affect the labour markets of most European countries. The traditional view derived from human capital theory is that the ageing work force will lead to reduced productivity, increased wage costs and rising unemployment. Moreover, the shortage of juvenile labour due to reduced fertility rates will change the intergenerational wage distribution in favour of the younger workers. Following this, it is argued that due to the low investment in their human capital senior workers will be less mobile and labour market mobility will hence fall because of ageing. However, these predictions derived from theory are hardly tested. The aim of this paper is to test whether these predictions make sense when examining the real evidence for a number of countries over a number of years. For the analysis, the five-wave dataset of the European Community Household Panel Survey (ECHP) covering the period 1994-1998 has been used. First we have investigated to what extent investments in training for senior workers are lower than for younger age groups. In general, senior workers in all employment regimes have lower education levels than young workers. Viewing the outcomes by employment regime, it appeared that workers across all age groups in Southern regimes had the lowest education levels. Our conjecture that the 'investment in human capital is lower for senior workers' has shown to be largely true: apart from the lower education levels of senior workers, in all regimes the percentage of people receiving training on the job falls with age. In addition, the type of training obtained also differs across age groups: senior workers are more likely to receive vocational training whereas younger workers are more likely to receive general training. Second, we looked at the impact this reduced investment in older worker's training efforts might have on the labour mobility of senior workers. The main question to be answered is to what extent investments in the human capital of senior workers affect their labour mobility compared with younger workers. The evidence suggests that in all employment regimes, both the young and the old have the highest job to non-job mobility. Although senior workers do have lower probabilities to become unemployed compared to the young, once they become unemployed they stay longer unemployed. Our conjecture that the job to non-job mobility in Social-democratic and Corporatist regimes is highest because of the use of social security arrangements as early retirement pathways is supported by the data.

In the final part of the paper, the hypotheses about movements to self-employment are analysed. The highest percentages of workers in all age groups working as self-employed are found in Southern regimes. People with longer tenure in their current job are not likely to move into self-employment probably because of build-up pension rights and rights to early retirement which are not available anymore when they move to self-employment. There seems to be an institutional barrier to move to self-employment for which reason it is more likely for them to use alternative exit pathways. The highest mobility into self-employment was expected in Liberal and Southern regimes. This seems only partially to be true: the probability of becoming self-employed is higher in Southern regimes whereas it is less likely to become self-employed in Corporatist regimes compared with the Liberal regime.

1. Introduction

The ageing of the population will substantially affect the labour markets of most European countries. The dominant view in academic and policy circles is that the ageing of the population and particularly the ageing work force will have significant effects on the performance of the European economies. Wage costs will likely be rising due to the payment of seniority wages in a number of countries and labour productivity will fall. This will be a barrier for economic growth. In some sectors of industry there will be shortage of juvenile labour for jobs requiring skills that senior workers generally not possess (e.g. physical demanding jobs). Many of these expectations seem to be derived from human capital theory that predicts that investments in human capital for senior workers are lower than for younger workers because the pay-off time is too short to make these investments profitable or efficient. The traditional view derived from human capital theory is therefore that the ageing work force will lead to reduced productivity, increased wage costs and rising unemployment. Moreover, the shortage of juvenile labour due to reduced fertility rates will change the intergenerational wage distribution in favour of the younger workers. Following this, it is argued that due to the low investment in their human capital senior workers will be less mobile and labour market mobility will hence fall because of ageing. However, these predictions derived from theory are hardly tested. The aim of this paper is to test whether these predictions makes sense when examining the real evidence for a number of countries over a number of years. First we will investigate to what extent investments in training for senior workers are lower than for younger age groups. Second, we want to look at the impact this reduced investment in older worker's training efforts might have on the labour mobility of senior workers. The aim is to examine transitional labour market patterns of senior workers and compare these with younger workers. The main question to be answered is to what extent investments in the human capital of senior workers affect their labour mobility compared with younger workers. Labour mobility here includes different types of mobility such as transitions from employment to unemployment or non-employment and transitions from employment to self-employment. The second purpose is to examine institutional differences across countries particularly with respect to training facilities, early retirement schemes and arrangements facilitating transitions to self-employment, and how these affect the age-related labour mobility patterns. We suspect that welfare regimes may capture at least part of these institutional differences.

For the analysis, the European Community Household Panel data (ECHP) data will be used. The transition rates of senior workers into various labour market states like unemployment, self-employment, or non-employment are modelled and compared with those for younger age groups. A

special focus will be on the impact of human capital investment and job characteristics triggering the transitions of senior workers on the labour market. The model attempts to control for endogenous selection problems, which arise because past conditions could affect the current state as well as the move into another state in the labour market. Initial results in single countries suggest that senior workers hardly receive any training, which could have an important impact on their 'employability' and labour mobility. Comparative evidence would provide substantial support for the development of policies to deal with the effect of an ageing workforce.

The paper will continue as follows. In section 2, the theoretical underpinnings of our main hypothesis are briefly sketched. The main focus is on human capital theory and we formulate some hypotheses on the main issue as well as on the impact of institutional differences across employment regime types. In section 3, some descriptive information on the sample population is presented. Next we present evidence on training efforts in various employment regimes, and on labour mobility patterns of different age groups. Eventually we report on the outcomes of our explanatory panel regression models (probit and multinomial regressions), which are used to test the main hypotheses. The paper ends with summarising the conclusions and presenting some ideas for further discussion.

2. Theoretical framework

2.1 Predictions from human capital theory

According to *human capital theory* (Becker, 1975), investment in human capital can be seen as the building up or the formation of capital (knowledge-based or skill-based) within people. Human capital is considered an investment in formal and informal knowledge obtained through pre-school learning, formal (primary, secondary and tertiary) education and job-related training. With job-related training we mean 1) formal or informal training on-the-job, 2) formal general training and 3) formal firm-specific training. When investing in human capital through on-the-job training both employers and workers must evaluate the costs and benefits of such training¹ and informal processes of learning through work experience. Costs not only include direct costs such as equipment and materials used, but also indirect costs such as the value placed on the time and effort of the trainees as well as of their trainers. The main return on investment in human capital is an expected increase in productivity, which for the worker is an expected increase in earnings². However, in this respect Becker clearly distinguishes two

¹ According to Mincer (1962) training on the job includes formally organised activities (e.g. apprenticeships and other training programs). Here, investments in on-the-job training are mainly concerned with the first type, the formally organised activities.

² Rational behaving firms pay their employees equal to their marginal products.

types of training: general training which also raises the productivity of the employee in other firms and specific training which only raises the productivity in the firm offering training. Since returns of general training are not firm-specific, rational employers would provide such training only if they can shift the costs to workers. Moreover, workers are willing to pay for these costs since training raises their productivity and wage over their future career. As a result, during training workers receive a wage below their average marginal product over the firm's career while receiving above average wages after training. On the contrary, specific training mainly yields firm-specific returns. The readiness to pay is now not as clear-cut as with general training. In case the employer pays for the training and the worker quits the firm after a while, the employer ends up with a lower productivity because a new employee will not have the same productivity as the trained employee. However, in the case the worker pays for the training and he is laid off he will receive a lower wage in his new job while the training he got in his old job is of no value for the new employer and hence, will not raise his marginal product. Both parties thus face a risk when paying for the training. Eventually, when behaving rationally, they would share the costs, which shares amongst others depend on the firm's quit rates and wages, its layoff rates and profits and how these factors are related to each other (Becker, 1975).

Following human capital theory it may be expected that investment in human capital is lower for senior workers than for younger workers. Three reasons are given to support this argument. First, it is contended that the pay-off period is shorter for senior workers because of their higher age. However, it can be argued that younger workers have less attachment to the firm they are working for and change jobs quicker, especially when they are still searching for the best fitting job. Senior workers feel more attached to the firm they are working for and are not likely to change jobs as frequent as younger workers. As a result, it may be that the pay-off time for senior workers is in fact longer than that for younger workers (Muffels, 2001). Second, there is some evidence that training senior workers is more laborious and that they are more unsusceptible to training than younger workers are (Casey & Bruche, 1981). Third, investment in human capital may be lower for senior workers because of reduced willingness to pay for the costs on both sides. For the firm, the probability of the older worker getting disabled or retired is higher than for the younger worker, which lowers the willingness to pay for the costs. Moreover, the worker may feel that the probability of lay-off is higher because of his age lowering his willingness to pay for the costs of training. This reduced willingness of both parties to pay for the costs may lead to lower investments in human capital of senior workers. Since it is expected that human capital investments are lower for senior workers, they embody lower levels of human capital, which in turn lowers their labour market opportunities and hence their labour mobility. Moreover, senior workers have more experience and may therefore possess more firm-specific human

capital than younger workers. Following Becker again, this firm-specific human capital is of less value for other companies, which lowers the wage gain senior workers may obtain by changing to better-paid jobs outside their current firm. This reduces their (external) job mobility. In sum, based on human capital theory it is expected, that the labour mobility of senior workers is lower than of younger workers. Labour market mobility can be disaggregated into internal and external labour mobility. Internal labour mobility means the mobility within the internal labour market, within the firm or the organisation. This refers to the 'employability' issue and we then focus on job-to-job mobility, occupational mobility (a change of occupation) and function mobility (a change of function usually within the firm). The ECHP data does not permit to focus on these internal labour market mobility patterns. Hence, our concern is primarily with external mobility: the move to another job with another firm or to unemployment or self-employment. It is often argued that labour mobility varies with age: senior workers are perceived as less mobile than younger workers. According to Samorodov (1999) this is mainly because senior workers have a different position on the labour market than younger workers.

Contract theory basically argues that the relationship between an employer and an employee is largely determined by an explicit or implicit contract between the two. The reason for this is the asymmetric information that exists between them. When the employer hires the employee, he is not sure whether the employee will fulfil his tasks efficiently. On the other hand, the employee is not sure whether the employer will keep his promises. By means of a contract the employee commits to reach company goals by working in return for a reward, a wage (Muffels, 2001). This wage can be determined in several ways. In a situation of free competition an employer would pay his workers a wage according to their marginal product, regardless of their age. This would imply that senior workers are paid less, because of their lower productivity. However, a worker who already knows that his future wage will decline will be less committed to his work and will therefore be less productive. Following efficiency wage theory, for motivational reasons therefore it might be efficient not paying workers in accordance with their marginal productivity, but paying wages above the market wage in order to increase the motivational effort (Akerlof & Yellen, 1986; Katz, 1996) . For example, paying a worker below his marginal productivity when he is young and above his marginal productivity when he is older, could raise worker's commitment to the firm and a better performance on the job. The worker now knows his wage will increase when he grows older, a reward system known as 'seniority wages'. This is all part of an implicit contract between the worker and the employer (Lazear, 1979).

Following contract theory, the attachment of the employee to the firm is expected to be larger than in the free wage competition situation. This would result in less mobility of senior workers since in another firm he will earn a lower wage he is receiving at his current firm. There is an incentive to

remain with his current employer. The theory further suggests that the worker is also likely to be more productive, because he knows that when he stays at the firm and abstains from shirking his future wage will rise. The older worker may however exert 'free rider's' behaviour because he knows his wage is going to increase anyway, whether he is actually more productive or not. However, for the employer this implicit contract combined with seniority wages is an incentive to dismiss the older worker earlier because paying senior workers more implies higher wage costs to the firm. For these reasons we expect, all other things being equal, senior workers to have a higher probability making a transition into unemployment than younger workers, thus a higher job to non-job mobility.

Another theory that is useful in studying labour mobility of senior workers is the *job matching theory*. Jovanovic (1979) developed an equilibrium model of job mobility in which he explicitly looked at the tenure-turnover relation. His model predicted that each worker's probability of moving to another job is a decreasing function of job tenure. He argues that this is because a mismatch between employer and employee will manifest itself early on in the match, and a long tenure is therefore seen as signalling a good match. His model can also be used to explain wage growth with tenure: a mismatch leads to a lower wage and a higher probability of moving into another job. As long as tenure signals a good match, the wage will increase with tenure and the probability of moving will decrease. Apart from the wage loss a senior worker is expected to bear when changing jobs, there are other costs of moving involved that have to be taken into account, both financial and psychological. According to de Groot and Verberne (1997) senior workers are more likely to be emotionally connected to and integrated in their working environment. Their emotional ties with their peers are stronger, for which reason the psychological costs of moving into another job are higher than for younger workers. In addition, the pay-off time of the expected gains when moving is shorter for senior workers imposing a barrier to move. Also for this reason senior workers might face lower job-to-job mobility. Geographical mobility is expected to be even lower from this point of view because of the stronger emotional ties older persons may have with their social network (neighbours and friends).

In addition, theories dealing with statistical discrimination (Becker, 1975) might be relevant for explaining the lower job-to-job mobility of senior workers. The assumption is that employers judge the productivity of future workers on the average characteristics of the status groups to which they belong. For this reason senior workers might be a 'target' group for statistical discrimination. Examples of direct forms of age discrimination are mandatory retirement at a certain age as well as age barriers in vacancy advertisements, in 'hiring and firing' rules and in training practices. In addition, there is also indirect discrimination through early retirement of the older worker. The increase of such early retirement practices since the 1970s in a number of European countries has lowered the age at which

it is regarded 'normal' to retire. The general practice to leave the firm before mandatory retirement age will also lower the older worker's motivation and commitment to his job inducing him to retire earlier. Hence, we suspect that early retirement practices increase the job to non-job mobility rates of senior workers (Economic and Social Committee, 2000).

Some studies show that senior workers are often willing to continue working after normal retirement age, though in a non-standard way such as working as self-employed (in this case the older worker has much more freedom with respect to the age at which he chooses to withdraw fully) working in a part-time job or working at home (tele-working might becoming easier due to the rise of ICT applications) (OECD, 1995; Samorodov, 1999).

2.2. Employment regimes and labour market mobility

According to Esping-Andersen (1990) little attention has been paid to the impact various types of welfare states might have on the labour market behaviour of people. However, comparative research into the patterns of labour market behaviour should take account of the evidence that stocks and flows on the labour market are affected not only by the demographic and economic situation at the country level but also by cross-national institutional differences reflected in labour market policies and social security designs. Looking at the national settings it appears that there is great variety in goals, objectives, tools, institutions and policies. Despite this variety, the idea that these systems cluster one way or another in a limited set of welfare and employment regimes is in the literature well-known. These regimes represent different 'worlds of welfare capitalism' (Esping-Andersen, 1990, 1996, 1999), each being internally tightly integrated, and each being sharply differentiated from one another (Goodin et al., 1999). Each welfare state is, of course, uniquely defined by its own logic in terms of institutional set-up, policy design, and functioning but as suggested by Esping-Andersen also clusters around some distinct 'ideal-typical' regime type. He distinguished three types, a Liberal, a Social-democratic and a Corporatist welfare regime type. His typology was criticised by authors like Leibfried (1992), Ferrera (1996) and Bonoli (1997) for his neglect of what they called a Southern or 'Latin-Rim' model of the welfare state. They argued that the Southern, Mediterranean countries belong to a different welfare regime type with its familial characteristics and its immature and selective social security system granting poor benefits and lacking a guaranteed minimum benefit system. Esping-Andersen admitted in his later work (1996) that the Southern countries share some Catholic and familial traditions but do not form a specific type or group of countries, but were merely underdeveloped forms of the traditional Corporatist type (Arts and Gelissen, 2002). In the sequel we use the term employment regime while

our focus is primarily with employment issues and not with the broader welfare state. Referring to the amended Esping-Andersen's typology, four employment regimes are distinguished: a Liberal regime, a Corporatist regime, a Social-democratic regime and a Southern regime. In section 3 on data analysis a short discussion is given on the division of the fifteen countries of the ECHP into these four regime types.

With respect to differences in labour mobility patterns across the various regimes the following conjectures are made.

- Liberal or market-oriented ('commodified') regimes oriented at making work pay and granting poor benefits to the unemployed or disabled, are expected to have the lowest job to non-job mobility rates for all age groups. The aim of this regime is to keep people at work and to create disincentives for receiving social benefits for which reason it is very unattractive for people to rely for their living on benefits. For the Social-democratic regimes with presumed generous levels of welfare state benefits in the case of unemployment or disability, we expect job to non-job mobility to be highest.
- For the same reason the labour market participation of the youngest and oldest age group is expected to be highest in Liberal regimes and the lowest in Social-democratic regimes. In Social-democratic regimes, younger people remain longer in education because of more generous study grants and senior workers can often retire through a variety of quite generous social security arrangements. In Corporatist employment regimes, it is not uncommon for companies to have very generous early retirement schemes, which reduces the participation of senior workers.
- With respect to transitions from paid employment to self-employment, we suspect these to occur more frequently in Southern regimes. Self-employment is believed to be more common in traditional economies such as the Southern ones. If people have poor chances to get a permanent job, as this happens to be the case in Southern regimes, they might try to build up a self-owned small sized firm. This explains at least partly why the number of small-sized firms is larger in Southern regimes. In Social-democratic and Corporatist regimes, transitions from paid work into self-employment are expected to be lowest since many social security arrangements exclude the self-employed for which reason it is more attractive to move into unemployment. For senior workers in these regimes it is more attractive to continue working as paid employee and to apply for the generous early retirement benefits when time has come to withdraw from the labour market. In particular, in Liberal regimes where no such generous arrangements exists, it might be more attractive for senior workers to continue working as a self-employed person while they then have more freedom to decide when they want to withdraw.

2.3 Hypotheses to be tested

The hypotheses resulting from the theoretical section deal with three main themes. They are discussed separately below:

1) *Investment in the human capital of younger and senior workers*

- Following human capital theory it is expected that the investment in human capital is lower for senior workers than for younger workers mainly due to a reduced willingness of the employer as well as the employee to pay for the costs of training
- In Social-democratic, Corporatist and Southern regimes we suspect the investment in the human capital of younger workers to be higher because of higher investment pay-off due to more strictness in the employment protection rules in these regimes compared to the Liberal regime. However, for senior workers investments in human capital are likely to be lower in Social-democratic and Corporatist regimes because of the early age at which people retire due to the generosity of the retirement benefits for which reason the pay-off time for investments in the human capital of senior workers is too low. This would follow from human capital theory as well as contract theory.

2) *Job to non-job mobility of younger and senior workers*

- Following human capital theory it is expected that the job to non-job mobility of senior workers is higher than of younger workers, since the investment in human capital is generally lower for senior workers.
- Following contract theory senior workers are expected to have higher job to non-job mobility because the implicit contract between the employer and the workers combined with seniority wages might act as an incentive for the employer to lay-off the senior worker or to favour early retirement.
- Referring to theories about employment discrimination senior workers are expected to have a higher job to non-job mobility than younger workers, mainly due to their worse competitive position on the labour market.
- Senior workers' transitions into unemployment are expected to be higher in Social-democratic and Corporatist regimes, because of the generous retirement benefits inducing senior workers to retire at an early age. Senior workers' job to non-job mobility is expected to be lowest in Liberal regimes, due to the poor levels of welfare state benefits.

3) *Mobility from employment to self-employment of younger and senior workers*

- Following contract theory, due to seniority wages and build-up pension entitlements senior workers are more likely to stay at the firm and less likely to move into self-employment.
- According to job matching theory senior workers have a lower job to self-employment mobility than younger workers due to longer job tenure and higher wages which signals a good match between the employer and the employee.
- In Southern and Liberal regimes, where no generous social security arrangements exist after labour market exit, the job to self-employment mobility is expected to be higher for senior workers since self-employment is more common in these regimes and offers more possibilities to continue working and to decide when they want to withdraw.

In addition to testing these hypotheses, we will estimate multinomial models explaining the various labour mobility patterns. In this respect it will be examined to what extent individual characteristics, human capital endowments, and job characteristics affect the various types of labour mobility. Viewing human capital indicators such as receiving training on-the-job, having finished higher education and tenure it is suspected that these will have a negative effect on the job to non-job mobility. With respect to job characteristics, for example, it is well documented that senior workers in civil servant jobs due to quite generous retirement benefits are more likely to withdraw at early ages from the labour market and hence experience higher levels of job to non-job mobility. People occupying supervisory jobs are more likely to move into self-employment than people working in non-supervisory jobs while the latter might lack the required management skills. Eventually, we will also study the likely impact of individual (socio-demographic) characteristics and human capital endowments on the investment in the human capital of younger and senior workers.

3. Empirical analysis

3.1 Data used

The ECHP Data

For the paper five waves of the European Community Household Panel Survey (ECHP), covering the years 1994 - 1998³ have been used. The ECHP dataset contains data on 15 European countries. For Germany and the United Kingdom, we use the GSOEP panel data for Germany and the BHPS for the United Kingdom instead of the original datasets included in the ECHP. For Austria only four waves were available for the years 1995-1998, for Finland and Sweden we only had two waves, for 1996-

³ The data are provided by Eurostat and used with their permission. However, the data provider bears no responsibility for the analyses or interpretations presented in this study.

1997 and 1997-1998 respectively. Luxembourg is excluded from the analysis because hardly any labour market transitions were found in the three available datasets.

The ECHP is designed to survey the income and living situation of individuals and households over time. The questionnaire deals with the socio-demographic and socio-economic situation of all persons 16 years and over living in households. The survey collects information on individual characteristics (e.g. age, sex, marital status), household composition (e.g. relation to household head, type of household, number of children), human capital endowments (e.g. highest education level attained, training on-the-job), labour market status (e.g. socio-economic status, type of job, sector of industry) and income sources (e.g. labour income, income from social security, private income).

For the analysis, people are classified into three different age categories: 16 to 24 being young workers; 25 to 49 being prime-aged workers; and 50 to 65 being senior workers. It is recognised that in some other studies on senior workers the age of 55 or even 58 is taken as the lower age limit for defining the older worker (Gustman and Steinmeier, 1984; Rust, 1990; Bercovec and Stern, 1991; Blau, 1994; Antolin and Scarpetta, 1998). However, there is ample evidence for some countries that already at the age of 50 senior workers reduce their working time and move into different labour market statuses in advance of full retirement at a later age (Lindeboom, 1998; Heyma, 2001). That is why the age limit is set at 50 years as the border line between the younger and the senior worker. The senior workers' group is further separated into people aged 50 to 58 and people aged 59 to 65. In some countries early retirement schemes exist that allow people to retire as early as from the age of 59. We will examine these retirement thresholds across countries and regimes to find out whether age limits are country or regime specific or not. The upper age of 65 is chosen because in most European countries this is the statutory retirement age for both men and women nowadays. Only in Denmark the statutory retirement age for both sexes is higher, 67 and in France it is much lower, 60. In Austria, Italy and the United Kingdom the statutory retirement age for women is 60 and in Belgium it is 62 (Missoc, 2000). However, the retirement ages for men and women are foreseen to become universal across Europe by the time the ageing of the population is expected to peak; in Belgium the age is gradually being increased up to the age of 65 by the year 2009, in the United Kingdom this gradual increase will take place between the years 2010 and 2020 while in Austria it will take place between the years 2019 and 2028 (OECD, 2000).

Clustering countries into employment regimes

The ECHP data cover transitional data for a period of five years, which is rather short especially because a number of country samples are small in size like the Netherlands, Belgium, Greece and

Ireland. On the other hand, because the ECHP data contain comparable information on the fifteen European member states including the Southern European countries, it is feasible to test whether countries with different employment regimes show different labour mobility patterns. To look at the effects of cultural habits, institutions and policies on labour supply one could opt for a regional classification into Northern, Central European and Southern European countries. Apart from the lack of theoretical underpinnings for such a distinction, its disadvantage is that the UK, Ireland and the Nordic countries (Denmark, Finland and Sweden) would be classified under the same heading. According to Esping-Andersen's classification discussed earlier, the UK and Ireland, as Liberal welfare states in an 'ideal-typical' sense, should be set apart from the Nordic and continental Social-democratic welfare states. The classification of Ireland under the liberal heading by Esping-Andersen (1990, 1999) is, however, rather doubtful. Considering a range of labour market indicators, it only shares the liberal feature of a low level of employment protection regulation. Looking at the other labour market indicators it seems to share the corporatist feature of an active labour market policy and the corporatist 'breadwinner's state' characteristic of a low female employment rate. In terms of family characteristics, it shares the typical features of a Southern welfare state. Ireland should, therefore, be considered as part of a *hybrid* type of welfare state that does not fit into any of the 'ideal-typical' welfare states. In order to avoid the inclusion of Ireland as the only example of a hybrid type it was decided to keep it under the same liberal heading as the UK and to test, using the five-wave European panel-data, whether that makes sense empirically. In earlier papers using the ECHP data an amended version of Esping-Andersen's classification provided the best results. According to that classification the UK and Ireland were kept under the liberal heading, notwithstanding our reservations for Ireland, but the Southern welfare states had to be set apart as a distinct regime (Arts and Gelissen, 1999; Goodin et al., 1999). Countries like Germany, Belgium, France and Austria are classified as a continental Corporatist type of welfare state and the Netherlands, Finland, Sweden and Denmark as Social-democratic regime. The Southern regime cluster includes Spain, Portugal, Greece and Italy.

Weighted data

In the ECHP dataset, cross-sectional weights are provided. Because we use a sub-sample of the entire population sample we needed to rescale the weights by a factor representing the proportion of the adult population (P_c) to the (weighted) sample size (S_c) as done in Fouarge (2002; 170). This is necessary since the original (cross-sectional) weights in the ECHP do not account for the fact that the countries' sample sizes are not in relation to countries' adult population sizes. For cross-country

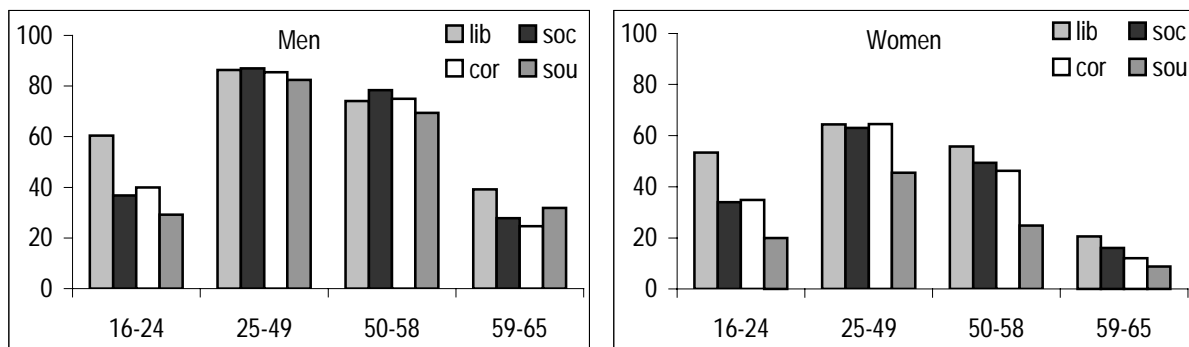
differences this is not necessary, however, in this paper a cross-regime analysis is presented implying aggregated country data within regime types.

3.2 Labour market trends by age and regime type

Employment rates and main activity of the non-employed in the sample

Below we present an overview of the labour market situation by age and regime type over the five-year observation period. For all the analyses performed in this paper, the five annual waves were pooled and people aged 65 years and over were dropped. In fig.1 we present information about the employment rate by age, gender and employment regime. Employment here means paid employment, paid apprenticeship or training and self-employment carried out for at least 15 hours a week.

Fig. 1: Employment rates of all age groups and employment regimes, pooled data 1994-1998



In general, the highest employment rates are found for prime-aged people. For men these are about 85 percent, with only small differences between countries and for women these range from about 45 percent in Southern regimes to over 60 percent in the other regimes. In most countries, except for Scandinavian countries, women have lower participation rates because of their caring duties. This effect is strongest in Southern regimes where female employment rates are lowest. The earlier mentioned trend of declining labour participation rates of senior workers is evident viewing the employment rates of the older two age groups. For 50-58 aged men, employment rates are still over 70 percent, except in Southern regimes where the employment rate is just below that level. For 59-65 aged men these rates drop to levels below 40 percent. This drop, moving to the oldest age group, is largest in Social-democratic and Corporatist regimes, where early retirement schemes and other social security arrangements allow exit at early ages from the labour force. For women the story is similar viewing the employment rates of the 50-58 year old ranging from 25 percent (Southern regimes) to 56

percent (Liberal regimes). These rates drop to only 9 percent for the Southern regimes up to 21 percent for the Liberal regimes for the 59-65 year old women. A difference with the male situation is that the drop is now about the same across all regimes. This might be attributed to women in some cases not being eligible for these early retirement schemes.

Finally, employment rates of the young are lower than of prime-aged people within all employment regimes. However, large differences are found across regimes. It is evident that these differences are mainly due to differences in education systems and in the labour market participation rates. For example, in Liberal regimes employment rates of the young are highest, probably due to strong incentives to work caused by poor benefit levels, strict conditions for getting a benefit as well as the content of labour market policies making work pay. It is known that labour market entry tends to take place at the earliest age in Liberal regimes. Stronger differences between the youngest and the two oldest age groups can be observed viewing the main activity of the non-employed people as shown in table 1.

Table 1: Main activity status of non-employed people by age and employment regime, pooled data 1994-1998

	Aged 16-24				Aged 50-58				Aged 59-65			
	Lib	Soc	Cor	Sou	Lib	Soc	Cor	Sou	Lib	Soc	Cor	Sou
Missing	0.9	0.1	0.9	0.1	0.3	0.3	2.1	0.1	0.2	0.1	0.5	0.1
Unpaid family work	0.1	0.1	0.2	2.1	0.1	0.7	0.9	3.2	0.0	0.3	0.5	1.3
Education / training	46.	82.	72.	63.	0.4	2.2	0.8	0.1	0.2	1.0	0.1	0.0
	3	3	7	8								
Unemployed	19.	9.6	14.	23.	12.	25.	24.	9.1	3.8	4.4	5.9	2.7
	7		4	8	7	2	0					
Work/ study < 15hrs	1.1	1.7	1.9	0.3	16.	2.5	2.8	0.6	7.7	3.7	1.0	0.2
					2							
Other inactivity	31.	6.2	9.9	9.9	70.	69.	69.	86.	88.	90.	92.	95.
	9				4	1	4	9	0	5	1	7

Source: EUROSTAT, ECHP 1994-1998

In general, most young people are in education or training, with percentages varying strongly between the employment regimes. In Social-democratic regimes over 80 percent of the non-employed young people is in education, which may be attributed to the existence of special grants or benefits for school-going children as well as for students. Apparently, these benefits are not granted that easy in Liberal employment regimes where the lowest percentage of 46 percent is found. In addition, unemployment rates for young people are rather large. Especially in Southern employment regimes, youth unemployment rates are relatively high, 24 percent compared to 10 percent in Social-democratic

regimes. The figures found here for the ECHP data correspond largely with figures provided by the European Commission (2001) based on the Labour Force Survey.

With respect to the oldest age groups the majority (over 65 percent for people aged 50-58 and over 85 percent for people aged 59-65) is found in the category 'other inactivity' which includes retirement. As already mentioned briefly, in recent decades it has become more and more common for senior workers to retire before the mandatory retirement age (Bercovec and Stern, 1991; Guillemard and van Gunsteren, 1991; Blau, 1994; Antolin and Scarpetta, 1998; Blondahl and Scarpetta, 1998; Casey, 1998; Kapteyn and de Vos, 1998; Hansen, 2000; Lindeboom, 2000; Heyma, 2001). The percentage of early retirees is lowest in Liberal employment regimes, which can be explained by the virtual non-existence of generous early retirement schemes. This is supported by the findings here that the percentage of senior workers in small part-time jobs (less than 15 hours a week) is highest in Liberal regimes. It is 16 percent for people aged 50-58, and 8 percent for people aged 59-65. Fairly high unemployment figures are found for the age group 50-58; about 25 percent in Social-democratic and Corporatist regimes, whereas only about 5 percent is unemployed in the oldest 59-65 age group. This latter finding is clearly due to the high levels of early retirement in this oldest age group. About 90 to 95% exit the labour market through early retirement. For the 50 to 58 age group, the figures illustrate that exit through unemployment is used as just another channel in the welfare system to allow senior workers to quit work at ages well in advance before normal retirement age (usually at or around the age of 60).

Main characteristics of the employed

Since the analysis focuses on employed people, it is important to examine their profile in more detail, as shown in table A1 in the Appendix. First, it is shown that men are over-represented. Male employment rates are generally higher. For this reason it is not surprising that the overstatement is largest in the traditional Southern employment regimes where fewer women work. Second, looking at marital status, the majority of the young is still single while in the oldest two age groups most people are married. The number of widowed people is increasing with age and is highest in the Southern employment regimes, which reflects the lower life expectancy in these countries. The number of divorced or separated people is highest in the Liberal regimes, across all age groups. This finding is documented in many other studies (see Goodin et al., 1999). The number of divorces is highest among prime-aged people. Children are largely born in households with prime-aged people whereas in households with younger or older people children are nearly absent.

Employed people in the Southern regime have the lowest education level. The majority of working people in this regime share a low education level. In Liberal regimes, the majority of working people in the youngest two age groups have a high education level, while in the oldest age group the majority share a low education level. This finding reflects a generation effect; younger generations generally have higher education levels than older generations. With respect to subjective health status, the majority of people appear to be in good health, though the health status declines with age. Across regime types, it appears that the highest shares (although still modest) of people in bad health are observed in Corporatist regimes. The reason for this observation remains unclear.

Looking at the job characteristics of the employed, it is shown that the highest percentage of civil servants is found in Social-democratic regimes and the lowest in Southern regimes. This must likely be attributed to the size of the public sector, which is largest in the Social-democratic regimes and lowest in Southern regimes. The majority of working people work in the service sector. There are small differences across age groups. Only a small number of people is working in the agricultural sector; the highest percentages are found in the Southern regimes, which can be explained by a less developed and more traditional economy. Regarding the number of hours worked, the majority of people work fulltime (35 hours a week or more) but the proportion declines with age. That older people work less must be due to early retirement practices. In all age groups the majority of people are employed in a non-supervisory job though in the older two age groups the percentages of people working in supervisory jobs are higher. There are no significant differences across regime types.

Finally, viewing net hourly wages, it is shown that in most regimes, hourly wages increase with age until the age of 59 after which wages tend to fall. Across regimes we observe lower wages in the less prosperous economies of the south across all age groups. The findings eventually show that the widely documented gender wage gap turns out to be existent across all regimes

3.3 Evidence on investments in the human capital of senior workers

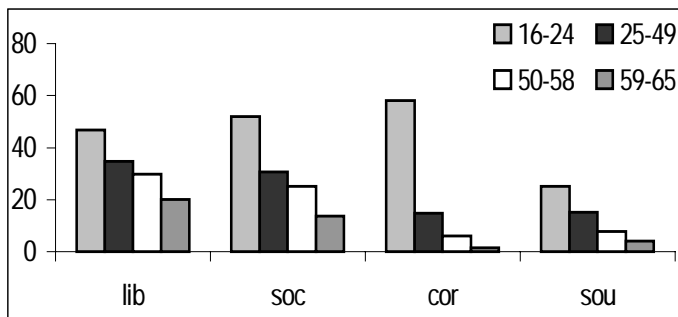
The first set of hypotheses deals with differences in human capital investments between senior and younger workers. We first examined the share of employed people receiving training or education, as shown in fig. 2⁴.

In all regimes, the percentage of people receiving training while employed declines with age. As set out in the theoretical section, this might be due to shorter pay-off time of senior workers' investment or to

⁴ For the Netherlands, no information is available for wave 1 (1994) and Sweden is excluded from this analysis because of a relatively high percentage of missing observations (about 40 percent).

'discrimination' of senior workers with respect to access to training. Another striking feature is the rather high percentage of young people in training in Corporatist regimes. In Germany, one of the largest Corporatist regimes in the data, there is a dual system where young people are at work while still receiving formal training or education, which might explain the relatively high percentage and the large drop from the young to the prime-aged category. Perhaps this dual system for the young is also an explanation for the relatively low percentages found in older age groups. Because the young are rather well educated, there is less need to re-train them at later ages. Finally, in Liberal regimes fairly high percentages of people participate in training. This might be explained by the larger turnover on the labour market (a higher job-to-job mobility) for which reason employers tend to invest more in training in order to enhance commitment to the job. Also the employee might be more willing to invest in training in order to be more employable and hence to maintain their standard of living through working, particularly because they know that when they lose their job they will be entitled to rather poor benefits. Earlier it was found that in Liberal regimes relatively low percentages of young people were in education while out of the labour force, whereas education levels were relatively high among the young. This might suggest that young people particularly receive training on-the-job.

Fig. 2: Percentage of employed people receiving training, pooled data 1994-1998



Source: EUROSTAT, ECHP 1994-1998

With respect to the type of training received, a distinction is made between (a) general or higher education only, (b) vocational training only, (c) a combination of vocational training with other types of training, and (d) a combination of general training with other types of training not being vocational training. Table 2 shows the types of training people are engaged in.

The older the worker gets, the less he will be engaged in general training and the more he participates in vocational training only. Young people still need more general training, which explains the relatively high fractions of them receiving this type of training. In Corporatist regimes where much effort is put in training of the employed, the percentage of senior workers still receiving general training

is more than 20 percent. In Liberal regimes, we found the lowest percentage of workers engaged in general training. Liberal regimes tend to invest more in job-related vocational training to commit workers to their job.

Table 2: Type of training employed people are engaged in, pooled data 1994-1998

Age class	Regime type	General only	Vocational only	Combination with vocational	Combination with general
16-24	Lib	17.2	45.7	36.7	0.4
	Soc	23.6	53.4	17.1	6.0
	Cor	35.2	57.5	5.1	2.2
	Sou	41.3	37.8	8.1	12.8
25-49	Lib	7.5	90.0	1.7	0.8
	Soc	8.6	60.9	23.7	6.8
	Cor	30.0	53.9	7.8	8.3
	Sou	14.7	54.9	10.2	20.2
50-58	Lib	5.3	94.9	0.2	0.6
	Soc	2.4	66.8	18.9	12.0
	Cor	21.2	60.5	7.0	11.4
	Sou	6.0	66.8	8.1	19.1
59-65	Lib	6.2	92.6	0.4	0.8
	Soc	3.0	65.4	19.3	12.3
	Cor	22.0	63.1	4.1	10.8
	Sou	5.7	71.4	5.9	17.1

Source: EUROSTAT, ECHP 1994-1998

In Southern regimes where investments in training across all age groups are generally fairly low, we observe quite high percentages of senior workers being engaged in job-related vocational training only or in combinations of training practices with general training. This might reflect the traditional nature of the economy in which particularly older generations of workers faces poor levels of education and hence need additional training when the economy advances. These large investments in the training of senior workers might also be due to the strict employment protection regulations (except for Greece) because of which senior workers cannot be easily laid-off.

Apart from the type of training received, the ECHP data contains information about whether the employer paid for the training or not and whether the employee took part in training that is aimed at improving his/her job prospects. The information is presented in table 3 below⁵. Across the board, it appears that the employer pays for the costs of job-related vocational training. Nevertheless, some differences are found across age groups and across regimes. The lowest percentages of employers paying for the costs of training are found within the youngest age group whereas the highest

⁵ Sweden and Germany are excluded from the analysis because only missings were reported.

percentages are observed within the middle two age groups. The difference with the oldest age group, however, is not large. Employers seem willing to pay for the training of their employees, regardless whether they are older or not. It must be noted, however, that no information is available about whether the employer pays the full costs, or whether employee and employer share the costs. Viewing the findings across regime types, it is shown that employers are least willing to contribute in Southern regimes though the difference with the other regimes is not large. This might be due to the larger number of very small firms in the Southern regimes, which generally are less willing to contribute while they believe they cannot afford it. The table also shows that in all regimes except the Liberal one almost all people engaged in training consider this training to be important for improving their job prospects. It appears that training in the Liberal regimes is not expected to pay off as much as in the other regimes in terms of finding better jobs after training. Why that would be the case remains unclear.

Table 3: Characteristics of training of the employed, pooled data 1994-1998

		Employer pays for training?			Training to improve job prospects?		
		No	yes	missing	No	Yes	missing
16-24	Lib	30.3	59.4	10.3	30.0	45.9	24.2
	Soc	39.7	51.5	8.8	6.7	85.5	7.9
	Cor	40.3	55.1	4.6	4.5	89.5	6.1
	Sou	73.1	25.8	1.1	7.8	90.7	1.5
25-49	Lib	4.9	84.1	11.0	21.4	56.4	22.2
	Soc	21.4	77.3	1.3	15.8	83.5	0.7
	Cor	21.6	75.6	2.8	8.8	87.8	3.4
	Sou	33.6	65.6	0.7	5.9	93.4	0.8
50-58	Lib	4.4	83.9	11.7	22.9	54.7	22.4
	Soc	13.7	86.0	0.3	15.0	84.7	0.2
	Cor	16.8	81.6	1.5	13.6	85.0	1.4
	Sou	22.3	75.3	2.3	6.4	91.3	2.3
59-65	Lib	3.9	81.6	14.6	24.9	49.9	25.2
	Soc	15.2	84.8	0.0	19.5	80.5	0.0
	Cor	20.4	78.7	0.9	11.0	88.5	0.5
	Sou	30.2	69.8	0.0	6.6	93.4	0.0

Source: EUROSTAT, ECHP 1994-1998

The descriptive analysis so far shows that training practices may differ across age groups as well as across employment regimes. In general it is shown that the older workers are, the less training they face. However, no evidence is found for a barrier at the side of the employer to pay for the training of senior workers. To get a deeper picture, a next step in our analysis has been to assess the factors that have a significant impact on the likelihood of receiving training or not. In Table A2 of the appendix

we present the estimation results of some probit regressions models. The set of variables included in the empirical model were derived from the theoretical assumptions set out in the beginning of the paper. The set consists of individual characteristics (derived from segmentation theory and job matching theories), human capital variables (derived from human capital theory and contract theory), job characteristics (derived from job matching theories), regime type dummies (accounting for the role of policy regimes or institutional variations across countries) and year dummies (accounting for economic cycle effects). The dependent variable is equal to 1 in the case employed persons report receiving training and equal to 0 otherwise. Model 1 is without incorporation of regime type dummies, whereas these dummies are contained in model 2. Furthermore, in model 3 some interaction terms are added to examine whether the effects of age vary across employment regimes.

First, viewing the effects of individual characteristics like age it is shown, that young people clearly have a higher probability of receiving training than prime-aged people (aged 25-49, the reference group). Although not significant in all models, senior workers are less likely to be engaged in training. Furthermore, women are on the other hand more likely to receive training. This might be because women in general are more in need of on-the-job training due to less working experience or a lower level of finished education. Widowed persons show to have a significant lower probability of receiving training than married persons, which might be attributed to their relatively high age. Singles have a significant higher probability of receiving training most likely due to being more committed to work and therefore willing to invest in their careers through education. Finally, people in good health have a higher probability of being engaged in training which is most likely due to their better capabilities in completing or successfully following the training, though a bad health does not have the reverse effect.

Two human capital indicators are included in the model: education level and tenure in the current job. Note that with respect to education level, the reference category is having a medium education level (ISCED level 3). All models show that higher educated people (ISCED 5-7) are more likely to receive training whereas this is much less likely for lower educated people (ISCED 0-2). This supports the documented 'accumulation thesis' stating that investments in training will especially be devoted to those who already have a higher education level. The 'compensation thesis' according to which it would make more sense to offer training to those who are lowly educated to compensate for the inadequacies in their education profile seems to be less relevant in daily practice. Assuming that employers are risk-averse they might argue that the likelihood of a 'risky' investment in training is higher with lowly educated workers. Furthermore, the findings show that the longer tenure in the current job is, the less likely it will be for these employees to receive training. This supports the

assumptions of the human capital theory according to which tenure implies a lower remaining pay-off time for new investments in training. Tenure also captures part of the age effect because of which investments in training, as was shown earlier, decline with age.

Viewing the effects for job characteristics it is shown that working in the public sector has a positive effect on the probability of receiving training. This might just reflect the larger training opportunities for public sector employees. People occupying a job at a higher or a lower than intermediate level, which is the reference category, seem less likely to receive training. For people working in higher level jobs this might point to a 'ceiling' effect; since these workers already possess a high-level job, training may add little to improve their job prospects. For people with low-level jobs the reasoning might be the same as for people with a low education level: risk-averse employers prefer less risky investments. Note the significant negative effect of unemployment history on receiving training (having been unemployed before the current job). Employers seem to consider investments in training of formerly unemployed people risky and therefore do not offer training facilities to them. Viewing the effects of income it is first shown that people with higher personal labour earnings are more likely to receive training. Second, people living in households with higher labour earnings of other household members are also more likely to receive training. For people having higher personal or household incomes it appears that the costs of training when they either have to pay fully or partly for it are less of a barrier for joining training.

Eventually, referring to our main hypotheses about the effects of policy regimes we discuss the effects of the regime type dummies and the interaction effects of regime type and age. First, with respect to regime type dummies it is shown that not living in a Liberal regime (the reference group) lowers the likelihood of receiving training, with the highest negative effect found for Corporatist regimes and the lowest effect for Social-democratic regimes. This is already shown in figure 2. The effect for the Corporatist regime might seem remarkable but recall that this regime tends to invest in training particularly of the younger age groups. Liberal regimes tend to offer more people training than the other regimes for all age groups except for the youngest one. Therefore, it is interesting to examine whether there are significant interaction effects of age and regime type (Model 3). Since the inclusion of interaction terms also changes the interpretation of the age and regime type dummies, these are discussed again. Looking at age first, there still is a significant positive effect for the youngest age group indicating that they are more likely to receive training than the prime-aged group even after holding regime type constant. A difference with model 1 and 2 is that this effect now particularly holds for Corporatist and Social-democratic regimes but not for the Southern regime, again compared with Liberal regimes (the reference category). These results are not surprising since, as was found earlier,

young people remain longer in training in Social-democratic and Corporatist regimes than in Liberal regimes. Recall that in most Corporatist regimes extensive dual systems of working and apprenticeships exist, particularly in Germany. In addition, in Corporatist but particularly in Southern regimes the odds for the two age groups older than 50 years to receive training compared with the prime-aged group is significantly lower than in Liberal regimes. For Corporatist regimes this might be due to the existence of generous early retirement schemes that induce senior workers to retire instead of to engage in training. For Southern regimes, as was explained earlier, the conjunction of the less advanced economy requiring less training with the burden of the training costs being too large for the large number of small-sized firms might be responsible for this. Apart from these interaction effects the remaining effects appear not very much different from the ones found in models 1 and 2.

Concluding this section it can be argued that the ECHP data support the hypothesis *following human capital theory that investments in human capital are lower for senior workers than for younger workers*. First of all, significant age effects were found, showing positive odds for being young and negative odds for being older (50 years and more) for receiving training compared with the prime-aged group. Second, the negative effects found for widowhood and tenure also indicate indirectly that statuses related to being older have a negative effect on receiving training. Apart from the age-effects significant positive effects on training were found for having a high education level or having a good health. These findings reflect most likely the existence of generation effects; younger generations being better educated and having better health than older generations and therefore are more likely to receive training. This stresses the 'accumulation thesis' according to which investments in training by risk-averse employers are directed to those who already have better skills and more learning potentials. With respect to the second hypothesis about *Social-democratic and Corporatist regimes investing most in terms of human capital in younger workers and the least in senior workers*, we found partial support in the data. Indeed, it turns out that belonging to the younger generations (16-24 years) has a positive effect on training efforts in Corporatist and Social-democratic regimes. Further, the results show that the found negative effects of belonging to the oldest generations on training efforts are largest in Corporatist regimes but, unexpectedly next largest in Southern regimes. Liberal regimes tend to invest most in training of the older worker most likely because senior workers stay longer at the firm because retirement schemes are less generous and attractive than in Corporatist and Social-democratic regimes.

3.4 Evidence on job to non-job mobility of senior workers

In this section the hypotheses concerning job to non-job mobility of senior and younger workers are tested. Job to non-job mobility here refers to transitions between states of employment, unemployment and other inactivity. Unemployment refers to all people not being employed, but still seeking a job while 'other inactivity' refers to all people not being employed who are also not actively searching anymore. The non-activity status group includes young people who quit their job to attend school again or older people who have been retired as well as women who have left the labour force to take care of the children. As already noted by Muffels et. al (2002), because of the relatively short observation period (1994-1998), it is possible that the observed labour market mobility is influenced by differences in the business cycle across countries. However, at the mid 1990s, all countries under observation were in the same (upward) phase of the business cycle. The labour market transitions reported are all observed year-to-year transitions during the sampling period 1994-1998 between the states of employment (working at least 15 hours a week), unemployment or other inactivity. Table 4 shows the observed transition rates across all regimes and all age groups.

Table 4: Transitions rates between year t and $t+1$ by labour market status, pooled data 1994 –1998

	Aged 16-24				Aged 25-49				Aged 50-58				Aged 59-65			
	M	E	U	O	M	E	U	O	M	E	U	O	M	E	U	O
Liberal																
Missing	12. 3	45. 6	6.3	35. 8	3.1	43. 6	20. 3	33. 0	0.0	0.0	18. 2	81. 8	46. 0	0.0	0.0	54. 0
Employed	0.1	88. 2	3.8	7.9	0.1	94. 1	1.5	4.3	0.0	90. 9	1.9	7.3	0.1	75. 9	1.3	22. 7
Unemployed	0.0	43. 7	38. 2	18. 2	0.6	34. 1	40. 6	24. 7	0.0	25. 4	41. 5	33. 1	1.4	15. 0	29. 2	54. 4
Other inactive	0.5	29. 3	6.3	63. 9	0.3	17. 7	3.4	78. 6	0.3	7.5	2.4	89. 9	0.0	2.6	1.0	96. 5
Social-democratic																
Missing	0.0	59. 6	34. 1	6.3	8.0	16. 4	33. 8	41. 8	0.0	25. 5	30. 1	44. 4	0.0	0.0	0.0	10 0
Employed	0.1	80. 9	3.7	15. 2	0.0	92. 5	2.6	4.9	0.0	88. 6	3.1	8.3	0.1	67. 2	2.1	30. 6
Unemployed	0.3	39. 9	28. 0	31. 8	0.1	27. 0	45. 6	27. 3	0.3	14. 3	53. 9	31. 4	0.3	9.9	25. 4	64. 4
Other inactive	0.0	28. 5	4.4	67. 1	0.2	20. 1	16. 8	62. 9	0.1	6.7	7.4	85. 8	0.1	4.5	0.8	94. 6
Corporatist																
Missing	24. 7	38. 9	5.8	30. 6	12. 4	59. 1	7.4	21. 1	18. 8	51. 3	6.1	23. 9	10. 4	34. 9	1.6	53. 1
Employed	0.3	84. 0	7.8	7.9	0.3	93. 3	3.2	3.3	0.5	89. 2	3.8	6.5	1.1	67. 3	2.1	29. 5
Unemployed	0.5	36. 8	45. 7	17. 1	0.5	32. 6	52. 1	14. 8	0.2	12. 8	71. 1	15. 9	0.0	0.7	38. 6	60. 7
Other inactive	0.5	15.	5.4	78.	0.5	16.	4.8	78.	0.2	4.0	4.3	91.	0.2	1.2	0.8	97.

		8	3		3	4		4		9						
Southern																
Missing	0.0	30.8	27.7	41.5	0.3	62.7	7.0	30.0	0.0	66.8	0.0	33.2	0.0	47.3	0.0	52.7
Employed	0.1	82.9	9.7	7.3	0.0	93.7	3.7	2.7	0.1	88.8	2.5	8.7	0.1	74.1	2.4	23.4
Unemployed	0.2	25.6	54.6	19.7	0.0	30.3	51.6	18.2	0.1	19.0	58.5	22.4	1.6	10.7	40.7	47.1
Other inactive	0.1	9.1	11.9	78.8	0.0	9.9	6.8	83.3	0.0	3.9	2.0	94.1	0.0	1.7	0.4	97.9

Note: M=missing; E=employed; U=unemployed; O=other inactivity

Source: EUROSTAT, ECHP 1994-1998

Viewing the 'staying (survival) probabilities' in employment, these are highest in the 25-49 age group and lowest in the 59-65 age group for all employment regimes; over 90 percent of the 25-49 old people who are employed in year t are still employed one year later in year $t+1$, against 67% to 75% for the oldest age group. The lowest percentages for the oldest group were found in the Corporatist and Social-democratic regimes, which might be explained by the generosity of their early retirement arrangements. The likelihood that workers remain employed the year after is the largest in Liberal regimes for all age groups. That the 'employability' of workers irrespective of age is larger in the Liberal regime does not imply that labour market mobility is lower. On the contrary, the job-to-job mobility might be higher but the intermittent periods of unemployment shorter due to less generous benefit levels. The findings here therefore suggest that Liberal regimes tend to have a more efficiently working labour market in which the job-to-job mobility is higher but the job to non-job mobility is lower. Some more evidence about this is given below. With respect to transitions from employment to unemployment (job to non-job mobility), these are quite low for all age groups but the highest for the youngest age group in all employment regimes except the Social-democratic one. In the latter regime it is the prime age group with lowest transition rates.

With respect to transitions from unemployment into employment, it is shown that in all regimes, these re-entry rates into the labour market decline with age. Re-employment probabilities are lower as people grow older. This seems to support the hypothesis that older people experience more barriers in finding a new job than young people, for reasons already explained in the theoretical part of this paper. Whether these declining re-entry probabilities are due to employers being reluctant to hire elderly workers or to the elderly themselves not seeking hard enough to find a job remains unclear. Across employment regimes, the findings show the re-employment transitions to be highest in Liberal regimes, where the benefits are least generous and therefore the incentives to work strongest. The 'staying probabilities' in unemployment are highest for the 50 to 58 aged across all age groups in all regimes.

Across regimes they are particularly high in the Corporatist regime indicating that due to lower incentives the labour market for this group does not work very efficiently. The Social-democratic regime performs better for this age group. Again, the findings show that the Liberal regime performs most efficiently for the 50 to 58 aged indicating better re-employment opportunities. Across all age groups the transition from unemployment into out of the labour force (non-activity) is highest for the oldest age group, the 59-65 aged. Across regimes the lowest transition rates from unemployment into out of the labour force are again found in the Liberal regime and particularly in the Southern regime. This finding points to the lack of attractive retirement gateways in these regimes.

These transition rates only tell part of the story. It is therefore more interesting to look at the factors explaining these transitions. Accordingly, a multinomial logit regression analysis is performed to examine what triggers the movements of the various age groups into the various labour market states. The transition models to be estimated consist largely of the same type of covariates used in the models explaining the engagement in training. Again the models contain individual characteristics, human capital variables, job characteristics and regime type dummies. The models attempt to control for endogenous selection problems that may arise because past conditions can affect the current state as well as the transition from one state to another. Formally, one would like to estimate panel multinomial logit models with a Heckman selection, to correct for a possible selection effect because the population of employed people is not fully random. However, to surmount the technical econometric problems that are raised by such an approach and which to date are to the best of our knowledge not satisfactorily resolved in the literature, we opted for a much simpler, less questionable and widely adopted solution. A standard multinomial logit model is estimated using unemployment history variables to control for possible endogenous selection problems. Three models are estimated. Model 1 is the most parsimonious model with most of the mentioned variables included except the regime type dummies. Model 2 is similar to model 1 but with inclusion of regime type dummies and model 3 is similar to model 2 but with inclusion of interaction effects between age category and regime type⁶.

Before the results are discussed, a short note on the absolute number of transitions is of interest. In almost all cases the number of people making a transition is sufficient large for executing the analyses (larger than 25), except for the age group 59-65. Only 18 people in Liberal regimes and 23 people in Social-democratic regimes in this age group appears to move from employment to unemployment on an annual basis. This reflects the observed trend that people of this age tend to

⁶ For model 3 only two age groups are used since there were too little transitions for people aged over 59 in some employment regimes, which led to ambiguous estimates. Note that in model 3 the age coefficients only hold for people living in Liberal regimes, since age in this model is part of an interaction term.

move into retirement instead of unemployment. Furthermore, only 19 people in Liberal regimes, 21 people in Social-democratic regimes and 4 in Corporatist regimes aged between 59 and 65 appear to re-enter employment after being unemployed. Because of the rather small number of transitions within the oldest age group, the two oldest age groups are combined in model 3.

Table A3 in the appendix presents the results of the transition models. These models examine the transitions out of employment (origin state) into the other main states at the labour market (destination states). The reference group consists of people remaining in the original state of employment. In all models, the two oldest age groups tend to have a significant higher probability of moving out of employment both, into unemployment or into non-activity compared to the prime-aged reference group. The largest effects for these age groups are found for the transition into inactivity. This suggests again that unemployment is used as an early exit gateway for those who are not entitled to the generous early retirement schemes. Whether this transition must be written on the account of the employers who perceive senior workers as less productive and/or whether it is the result of voluntary 'choice' of the employee remains unclear. Since the incentives work in favour of both, the employer and the employee, it might be argued that both underlying effects play a role. Moreover, the effect increases with age for both types of transitions out of employment. This indicates the higher job to non-job mobility of senior workers already at early ages (50 years or more). Also the young worker shows to have a significant higher probability to move out of the labour force into non-activity. A possible explanation for their withdrawal is that young people leave their jobs to engage in education trajectories.

With respect to gender differences women have a higher probability of withdrawing from the labour market than men, possibly due to the caring duties of women forcing them to quit their jobs. Another reason could be that they, when losing their job, are not entitled to unemployment benefits because of discontinuous labour careers. Being divorced or widowed as well as never been married, have a negative effect on moving out of the labour market. Single people whether due to divorce, widowhood or not finding the right partner might prefer working for economic as well as for social reasons (social contacts). Single people who have never married are more likely to move into unemployment which effect may point to the disincentive effect of the benefit system for which reason the economic need to work is less prominent. Unemployment may for them also serve the goal of finding a more suitable job that better meets their preferences. Looking at health status, it is evident that having a bad health has a positive effect on moving out of employment into unemployment or to withdraw from the labour market at all. The effect is largest for the move out of the labour market, indicating that a bad health is a strong barrier to find a job. For a similar reason, a good health has a

negative effect on the transition into unemployment. Healthy people are less likely to become unemployed. The more children there are in the household the more likely people tend to withdraw from the labour market. Over 70 percent of the people moving out of the labour market while having children appear to be women, which explains the former effect. Women tend to withdraw when they need to take care for their children.

Human capital variables like having a high education (compared to having a medium education level) lowers the probability of moving into unemployment but increases the probability of moving out of the labour force. The first part mirrors the well-known favourable labour market position of higher educated people while the second part indicates the better retirement opportunities of this group. In addition, having a low education level has a positive effect on the probability of moving into unemployment. This mirrors the worse employment situation of low educated people in the knowledge economy. Furthermore, the findings show that tenure in the current job lowers the probability of moving out of employment. People with longer tenure are most likely trained on-the-job and therefore have a more stable employment situation. The negative effect of tenure is smallest for the movement out of the labour force, which might be attributed to the design of early retirement schemes providing better benefits the longer the duration of the current job. This might counterbalance the negative effect of tenure on leaving the labour market. The last human capital indicator to be discussed here is whether the worker is receiving training or not. Training reduces the likelihood of a transition out of employment. It appears that to be engaged in training pays off, since the probability of becoming unemployed or to withdraw from the labour market is significantly reduced.

With respect to job characteristics, the more hours someone works, the less likely he is to move out of employment. The reason for this is that the number of preferred working hours mirrors the preference for work compared to leisure. Working in the public sector has a negative impact on the probability of moving out of employment indicating the better employment protection situation within the public sector. Workers occupying a job at intermediate or non-supervisory level (relative to having a supervisory job) are not more likely to move into unemployment but remarkably though have a significant lower probability to move out of the labour market. The latter finding may point to less generous exit routes out of employment for people in lower level jobs. The findings also show that workers with an unemployment record before the current job are more likely to re-enter unemployment. This mirrors their lower human capital or worse labour market position. For the same reasons people with higher labour earnings are less likely to move out of employment. Another reason might be that the opportunity costs of losing a well-paid job are higher. The existence of labour income of other

household members raises the probability of moving out of the labour market. This mirrors the widely documented disincentive effects of other income sources in the household.

Viewing the effect of employment regime (Model 2) it is shown that all regime type dummies exert a significant positive effect on moving into unemployment and a negative effect on moving out of the labour force. The positive effects for moving into unemployment signal the more efficiently operating labour market in the Liberal regime. The Corporatist and Southern regime appear to perform worse in this respect. These outcomes signal the disincentive effects of the generous benefit systems in these regimes. These regimes, as shown before, also have the highest unemployment rates. The negative effects for moving out of the labour force, which are strongest for the Corporatist regime, may signal the attractiveness of the generous unemployment benefit system.

Viewing the interaction dummies in Model 3, it turns out that the odds of becoming unemployed are significantly lower for the youngest generation in Social-democratic regimes compared to the odds in Liberal regimes. This confirms our previous findings that Liberal regimes tend to invest little in the human capital of young workers for which reason this group experiences a more unstable employment career with more intermittent periods of unemployment. On the other hand it might signal the active labour market policy of Social-democratic regimes oriented at the youngest age group. Also the odds of moving out of the labour force are lower for these young workers in Social-democratic regimes compared to their odds in Liberal regimes. This again points to the more active labour market policies in the Social-democratic regime offering more opportunities for young people to raise their human capital through education and schooling. The results also indicate that in Southern regimes both the youngest and the older generations of workers have a higher probability to withdraw from the labour market compared to their counterparts in Liberal regimes. The results for the youngest age group might, apart from the poor unemployment benefits, mirror the typical familial features of the Southern regimes where large fractions of young people still live at their parent's home for which reason the economic need to earn a living are less pregnant. For the oldest generation a similar effect might be responsible for their higher withdrawal rate; incomes are shared within the larger multiple generation households. Looking at the data more carefully it is shown that more than 80 percent of the young who are observed to make a transition from employment into non-participation in Southern regimes are living in households with at least three adults. Adding the interaction terms does not add much to the explanatory power of the model. The pseudo R-squared is even reduced slightly comparing model 2 with model 3.

What do these results tell us about the hypothesis *that following human capital theory, contract theory as well as discrimination theory, senior workers have a higher job to non-job mobility than*

younger workers? The findings partially support the hypothesis. Compared to prime-aged workers, the findings indeed show that senior workers are more likely to experience a transition into unemployment or into non-participation. However, they share a higher job to non-job mobility rate with the youngest generation of workers. The youngest and oldest age group differs in the state to which they move. The young move into education whereas the elderly move into retirement. The hypothesis that *the job to non-job mobility of senior workers is highest in Social-democratic and Corporatist employment regimes and lowest in Liberal regimes* appears supported by the analyses presented here. The evidence support the notion that part of the explanation is found in the generosity of the early retirement systems in the Corporatist and Social-democratic regimes causing a disincentive effect on senior worker's employment record. Another part of the explanation is found in the assumptions of human capital and contract theory that senior workers are perceived as less productive and too costly in terms of their wage levels and therefore are offered generous exit gateways to displace senior workers on the job.

3.5 Evidence on the mobility from employment to self-employment of senior workers

The final set of hypotheses concerns the mobility from employment into self-employment. Table 5 shows the transition rates between employment, self-employment and non-employment. The non-employment category now combines the unemployed and the people who are out of the labour market. Also the oldest two age groups are taken together to avoid the occurrence of cells with too low numbers of transitions.

Table 5: Transition rates between employment, self-employment and non-employment, pooled data 1994-1998

	Aged 16-24				Aged 25-49				Aged 50-65			
	M	E	S	N	M	E	S	N	M	E	S	N
Liberal												
Missing	10.1	56.0	0.0	33.9	21.0	21.2	11.9	46.0	37.2	1.7	0.9	60.2
Employment	0.4	87.0	0.9	11.6	0.1	93.0	1.3	5.5	0.1	85.2	1.6	12.9
Self-employment	0.0	22.8	67.0	10.2	0.1	9.4	83.3	7.2	0.1	6.2	82.9	10.8
Non-employment	0.9	30.4	1.2	67.5	0.6	17.1	3.1	79.2	0.2	4.9	1.1	93.8
Social-democratic												
Missing	19.5	52.3	0.0	28.2	18.1	54.7	0.7	26.5	20.7	29.6	2.3	47.3
Employment	1.3	79.2	0.6	18.9	0.6	90.8	1.4	7.2	0.5	83.4	1.7	14.4
Self-employment	0.0	14.1	78.2	7.7	0.4	15.1	74.7	9.8	0.2	13.9	68.7	17.3
Non-employment	1.0	27.6	0.9	70.4	1.3	19.9	1.9	76.9	0.2	5.3	1.0	93.5
Corporatist												
Missing	58.3	24.0	1.3	16.4	17.9	45.1	11.1	26.0	16.9	27.1	20.4	35.6
Employment	6.3	77.3	0.4	16.1	0.4	92.6	0.7	6.4	0.5	84.9	0.4	14.3
Self-employment	3.3	15.4	73.5	7.8	0.8	5.1	87.7	6.4	1.4	3.1	82.3	13.3
Non-employment	5.2	13.7	0.3	80.8	0.8	18.7	2.4	78.1	0.2	2.4	0.7	96.7

Southern												
Missing	12.7	56.7	1.5	29.1	16.7	49.4	10.1	23.8	5.9	45.1	16.4	32.6
Employment	1.6	79.4	1.9	17.0	0.2	91.1	2.3	6.3	0.2	82.3	2.3	15.3
Self-employment	0.1	17.6	67.1	15.2	0.1	7.2	76.4	6.3	0.1	3.4	82.4	14.1
Non-employment	0.7	11.2	1.4	86.8	0.4	10.9	4.2	84.5	0.1	1.6	1.8	96.5

Source: EUROSTAT, ECHP 1994-1998

Viewing transitions from employment to self-employment it is shown that generally the transition rate is very small ranging from 0.4% to 2.3%. The highest transition rates occur in Southern regimes ranging from 1.9% for the youngest age group to 2.3% for the older age groups. The lowest rates emerge in Corporatist regimes ranging from 0.4% to 0.7%. The rates for the Liberal and Social-democratic regimes are about the same, which is little surprising while we expected to have larger rates in Liberal countries. To find the highest rates in the Southern regimes coincides with the larger proportion of self-employed workers in these countries. Comparing age groups, it is obvious that in all regimes the lowest transition rates occur in the youngest age group. To become self-employed requires both, assets and work experience which the young still have to acquire. In Liberal and Social-democratic regimes, the highest transition rates are found in the oldest age group. It appears that a small fraction of the senior workers in these regimes chooses to retire at an early age in order to start another career as a self-employed person. This might be due to the design of the early retirement benefits either being too poor as in Liberal regimes or too generous as in Social-democratic regimes. In both cases it seems attractive for a small group of senior workers to be engaged in work and earning additional income through a second career as a self-employed person. Corporatist regimes show highest rates of transitions into self-employment in the prime-aged group whereas Southern regimes have the highest transition rates in the prime-age group but also in the oldest age group. This also indicates that senior people after being retired at an early age want to continue working but now as a self-employed person.

Viewing the transitions from self-employment to employment, the highest rates for the youngest age group emerge in Liberal regimes whereas the highest rates for the other age groups exist in Social-democratic regimes. The high rate for the young people in Liberal regimes might be due to either lack of skills or lack of sufficient policy support to start a new company. For the Social-democratic regimes it is more likely that the strong legal regulations regarding the set-up or maintenance of a company as well as the exclusion from collective social security arrangements act as a barrier to continue working as a self-employed person. In all regimes the youngest age group experience the highest transition rate into employment indicating that they either lack the skills or that they encounter

too much of institutional barriers to continue their company or that they prefer a job with access to collective social security arrangements.

In the next step we tried to model the transitions from employment into self-employment. Again, we estimated three logit regression models. Model 1 contains the full set of variables excluding the regime type dummies. Model 2 is similar to model 1 but with inclusion of the regime type dummies and model 3 is again similar to model 2 but with inclusion of the interaction effects between age and regime type. The results are presented in table A4 in the appendix.

The outcomes indeed show that being young (compared to being prime-aged) has a negative effect on the transition into self-employment. Only in model 3 this effect became insignificant due to the inclusion of interaction effects of age with regime type. However the inclusion of these interaction terms does not alter the model outcomes much, neither the parameter estimates nor the model fit indicated by the pseudo R^2 . Further, it is shown that senior workers are more likely to move into self-employment in all regimes except the Corporatist one. The only significant interaction effect between age and regime type deals with being older in a Corporatist regime reducing the probability of moving into self-employment. Again, this points to the generosity of the early retirement schemes in this regime inducing people to stay employed in their late careers. Also gender and particularly being female reduces the likelihood of a transition into self-employment. The effect is quite strong. This might signal the weak labour market position female workers generally have. In addition, we found that marital status, having children or health status appear to exert hardly any effect on the likelihood of making a transition into self-employment. With respect to the human capital variables, the model outcomes provide rather weak support to the belief that higher educated people are more likely to make a transition into self-employment. The effects are not strong and only significant in Model 1 at the 90% level. However, a low education level seem to act as a strong barrier to make a transition into self-employment indicating that the low educated lack the required skills to start up a company. As for the other human capital variables, tenure in the current job and receiving training, it is shown that both of them reduce the probability of moving into self-employment. Usually, the level of early retirement benefits, but also of other social security arrangements, are linked to one's employment record and people with longer tenure might not want to jeopardize their benefit entitlements by moving into self-employment. The negative effects for training deals with that much of the training is firm specific, and therefore useless when one moves into another job or into self-employment. The number of hours worked significantly increases the probability of moving into self-employment. People with strong preferences for work might prefer working as a self-employed person while the revenues of long working hours go to the self-employed person instead of the former employer. People working in the public sector appear less

likely to move into self-employment possibly due to the fact that civil servants often face generous social security arrangements which they lose when they move into self-employment. A second reason might be that the employment security offered in a public sector job will be lost after transition and the more these people are risk-averse the less likely they will opt for such a transition. Working in an intermediate or non-supervisory job reduces the probability of moving into self-employment, suggesting that starting a business requires skills at least at supervisory level. Finally, having been unemployed before reduces the probability of moving into self-employment. Again, this ensures the lower human capital or worse labour market prospects these workers have. Earlier results on receiving training and on moving into unemployment already proved that their position is worse in many respects. Let us consider the effects of regime type. Workers in a Corporatist regime are clearly less likely to move into self-employment compared to their counterparts in Liberal regimes, most likely because of fear to lose their fairly generous benefit entitlements. That the effect turns out to be insignificant in Social-democratic regimes might be due to the existence of supportive labour market policies to favour transitions into self-employment. For Southern regimes a significant positive effect is found also most likely due to the poor benefit systems. The movement into self-employment might render better opportunities to maintain their living standard after being laid-off than to become dependent on a poor benefit. The large number of small sized firms in these regimes supports this argument.

Summarizing the results so far, we found strong support in the data for the hypothesis that according to *contract theory and job matching theory senior workers are less likely to move into self-employment than younger workers*. Contract theory predicts that senior workers will be offered generous early retirement benefits in order to downsize wage costs. The results confirm that the generous retirement benefits clearly induce senior worker to stay in employment up to retirement age and not to move into self-employment before. Job matching theory predicts that the longer tenure in the job the better the job match is and the less likely exit into self-employment. The data also supports this argument. With respect to the final hypothesis that *in Southern and Liberal regimes transition rates into self-employment are expected to be higher than in Social-democratic and Corporatist regimes*, again the data largely support this conjecture. The results show that the likelihood for workers to move into self-employment after employment is indeed highest in Southern regimes compared to their counterparts in Liberal regimes. Further, workers in Corporatist regimes tend to move less likely than their counterparts in Liberal regimes into self-employment.

4. Conclusions

Following human capital theory it is argued that due to the lower investment in their human capital senior workers will be less mobile and labour market mobility will hence fall because of ageing. However, these predictions derived from theory are hardly tested. The aim of this paper is to test whether these predictions makes sense when examining the real evidence for a number of countries over a number of years. First we have investigated to what extent investments in training for senior workers are lower than for younger age groups. In general, senior workers in all employment regimes have lower education levels than young workers. Viewing the outcomes by employment regime, it appeared that workers across all age groups in Southern regimes had the lowest education levels. Our conjecture that the 'investment in human capital is lower for senior workers' has shown to be largely true: apart from the lower education levels of senior workers, in all regimes the percentage of people receiving training on the job falls with age. In addition, the type of training obtained also differs across age groups: senior workers are more likely to receive vocational training whereas younger workers are more likely to receive general training. A remarkable observation is, that the older the worker is, the more likely it is for the employer to pay for the training. Theoretically, an employer faces a risk in paying for such firm-specific training; in the case the worker leaves the firm, the employer must hire a new worker to fill the empty spot. This new worker has not received the same firm-specific training and is in a way less valuable for the employer. The worker also faces a risk when paying for such training, in case he gets laid off, he will not be able to use the specific skills in another job, which lowers his marginal productivity for other employers. The theory does not give a decisive answer to the question as who will most likely have to pay for the training. The empirical analysis shows that most employers are paying for the training, which might indicate that employers are not reluctant to invest in the human capital formation of their senior workers and do not intend to lay them off as quick as possible. Viewing the investment in the human capital across employment regimes, it was expected that the investment was highest in Social-democratic and Corporatist regimes. We suspected in these regimes the existence of more employment protection rules and social security arrangements providing incentives to employees to engage in training and for employers to supply training. However, no support is found for this hypothesis. In Social-democratic and Corporatist regimes the negative effect of being older on the likelihood of receiving training is largest which might point to the typical pattern of early retirement in these regimes. Senior workers rather move out than to engage in training.

Second, we looked at the impact this reduced investment in older worker's training efforts might have on the labour mobility of senior workers. The main question to be answered is to what extent investments in the human capital of senior workers affect their labour mobility compared with younger workers. The evidence suggests that in all employment regimes, prime-aged workers move

the least of all three age groups. Both the young and the old have the highest job to non-job mobility. It has to be noted that although senior workers do have lower probabilities to become unemployed compared to the young, once they become unemployed their staying probabilities in unemployment are higher. Our conjecture that the job to non-job mobility in Social-democratic and Corporatist regimes is highest because of the use of social security arrangements as early retirement pathways is supported by the data.

In the final part of the paper, the hypotheses about movements to self-employment are analysed. The highest percentages of workers in all age groups working as self-employed are found in Southern regimes. People with longer tenure in their current job are not likely to move into self-employment probably because of build-up pension rights and rights to early retirement which rights are not available anymore when they move to self-employment. There seems to be an institutional barrier to move to self-employment for which reason it is more likely for them to use alternative exit pathways. The highest mobility into self-employment was expected in Liberal and Southern regimes. This seems also largely to be true: the probability of becoming self-employed is higher in Southern regimes whereas it is less likely to become self-employed in Corporatist regimes compared with the Liberal regime.

In this paper we tested some theoretical predictions about the impact of lower investments in the human capital of senior workers on their labour mobility compared to younger workers. In addition, by applying a regime type analysis we tried to examine the impact of institutional settings on the human capital investments and the labour mobility patterns of senior and younger workers. The results using the five-wave ECHP panel dataset are very promising and support most of the conjectures made. In some cases we found low numbers of transitions for which reason we had to combine some categories. Given the restricted number of years we were not capable of tackling economic cycle effects. We added year dummies in our models and most of them appeared insignificant indicating that for this short period cycle effects turns out to be of minor importance. In the future using more waves and more countries will permit us to enrich our analyses as well as to improve our model specifications by allowing to correct for economic cycle effects as well as to improve the corrections made for selection bias. That the impact of regime type remains significant in most models even after inclusion of a very rich set of covariates supports the theoretical significance of including institutional variables that may account for differences in policy settings in the various countries under scrutiny. Policies indeed matter to improve the performance of labour markets to resolve unemployment and to foster economic welfare for all.

References

- Antolin, P. and Scarpetta, S. (1998), Microeconomic analysis of the retirement decision: Germany, OECD Working Paper no. 204, Paris: OECD Economics Department.
- Akerlof, G. A. and Yellen, J.L. (1986), Efficiency Wage Models of the Labour Market. Cambridge: Cambridge University Press.
- Arts, W. and Gelissen, J. P. T. M. (2002), 'Three Worlds of Welfare Capitalism or More? A state-of-the-art report'. *Journal of European Social Policy*, 12 (2), pp. 137-158.
- Becker, G. S. (1975). Human capital, a theoretical and empirical analysis with special reference to education. Second edition. New York: NBER.
- Bercovec, J. and Stern, S. (1991), 'Job exit behaviour of older men', *Econometrica*, 59 (1), pp.199-210.
- Blau, D. M. (1994), Labor force dynamics of older men, *Econometrica*, 62 (1), pp. 117-156.
- Blondahl, S. and Scarpetta, S. (1998), The retirement decision in OECD countries, OECD Working Paper no. 202, Paris: OECD Economics Department.
- Bonoli, G. (1997), 'Classifying welfare states: a two-dimension approach', *Journal of Social Policy* 26, pp. 351-72.
- Casey, B. and Bruche, G. Work or retirement? Labour market and social policy for older workers in France, Great-Britain, the Netherlands, Sweden and the United States, Aldershot: Gower.
- Casey, B. (1998). Incentives and disincentives to early retirement, OECD Ageing Working Paper no. 3.3, Paris.
- Economic and Social Committee (2000), Opinion on older workers, Brussels.
- Esping-Andersen, G. (1990), *The Three Worlds of Welfare Capitalism*, Oxford: Polity Press and Blackwell.
- Esping-Andersen, G. (1996), *Welfare States in Transition: National adaptations in global economies*, London: Sage for the United Nations Research Institute for Social Development.
- Esping-Andersen, G. (1999), *Social Foundations of Post-Industrial Economics*, Oxford: Oxford University Press.
- European Commission (2001), *Employment in Europe 2001, Recent Trends and Prospects*, Brussels.
- Ferrera, M. (1996), 'The "Southern" model of welfare in social Europe', *Journal of European Social Policy* 6, pp.17-37.
- Fouarge, D. (2002), *Minimum Protection and Poverty in Europe: An economic analysis of the subsidiarity principle within EU social policy*, Amsterdam: Thela Thesis.

- Goodin, R. E., Heady, B., Muffels, R. and Dirven, H-J. (1999). *The Real Worlds of Welfare Capitalism*, Cambridge: The University Press.
- Groot, W. and Verberne, M. (1997), 'Aging, job mobility and compensation', *Oxford Economic Papers*, 49 (3), pp. 380-403.
- Guillemard, A. M and van Gunsteren, H. (1991), *Pathways and their prospects: A comparative interpretation of the meaning of early exit*, in Kohli, M., *Time for Retirement*, Cambridge: Cambridge University Press.
- Gustman, A. L. and Steinmeier, T. L. (1984), 'Partial retirement and the analysis of retirement behavior', *Industrial and Labor Relations Review*, 37, pp. 403-415.
- Hansen, H. (2000), *Schemes for early retirement from the labour market in eight countries*, The Danish National Institute of Social Research Working Paper 1:2000.
- Heyma, A. (2001), *Dynamic Models of Labour Force Retirement: An empirical analysis of early exit in the Netherlands*, Amsterdam: Thela Publishers.
- Jovanovic, B. (1979). 'Job matching and the theory of turnover', *Journal of Political Economy*, 87 (5), pp. 972-990.
- Kapteyn, A. and de Vos, K. (1998), *Social security and retirement in the Netherlands*, in: Gruber, J. and Wise, D. A., *Social security and retirement around the world*, Chicago: The Chicago University Press.
- Katz, L. F. (1986), *Efficiency Wage Theories: a partial evaluation*, in : S. Fischer (ed.), *NBER, Macroeconomics Annual*, p. 235-251, Cambridge, Mass.: MIT Press.
- Lazear, E. P. (1979), 'Why is there mandatory retirement?', *Journal of Political Economy*, 87, pp.1261-1264.
- Leibfried, S. (1992), 'Towards a European welfare state? On integrating poverty regimes into the European Community', in Z. Ferge and J. Kolberg, *Social Policy in a Changing Europe* (Campus Verlag, Frankfurt am Main).
- Lindeboom, M. (1998), *Microeconomic Analysis of the Retirement Decision: The Netherlands*, OECD Working Paper no. 207, Paris: OECD Economics Department
- Lindeboom, M. (2000), *De Uittredingsroutes van Oudere Werknemers in internationaal Perspectief*, OSA Publicatie A172, Tilburg: OSA.
- Mincer, J. 1962. 'On-the-job training: costs, returns and some implications', *Journal of Political Economy*, 70 (5), pp.50-79.
- MISSOC (2000), europa.eu.int/comm/employment_social/missoc2000/index_en.htm, page visited july 2000.

- Muffels, R. 2001. 'Tussen mythe en werkelijkheid: leeftijd in sociaal-economisch perspectief', in: Quispel & Christ (eds), Ouder worden: een kwestie van leeftijd. Utrecht: LBL, expertisecentrum leeftijd en maatschappij.
- Muffels, R. and Fouarge, D. (2002), Social Exclusion in European Welfare States, in: Berghman et al. (eds.), Social Security in Transition, Kluwer Law International.
- OECD (1995), The transition from work to retirement, OECD Social Policy Paper no. 16, Paris.
- Rust, J. (1990), Behavior of male workers at the end of the life cycle: An empirical analysis of states and control, in: Wise, D. A., Issues in the economics of Aging, Chicago: The University of Chicago Press.
- Samorodov, A. (1999), Ageing and labour markets for older workers, ILO Employment and Training Papers no. 33, Geneva.

Appendix

Table A1: Main characteristics of employed people in the sample, pooled data 1994-1998

	Aged 16 - 24				Aged 25-49				Aged 50-58				Aged 59-65			
	Lib	soc	cor	sou	lib	soc	cor	sou	lib	soc	cor	sou	lib	soc	cor	sou
Sex																
Male	54.1	52.7	53.7	60.1	55.2	58.3	57.1	64.2	55.4	61.7	61.6	72.8	62.8	61.6	65.4	76.4
Female	45.9	47.3	46.3	39.9	44.8	41.7	43.0	35.8	44.6	38.3	38.4	27.2	37.2	38.4	34.6	23.6
Marital status																
missing / n.a.	0.1	1.8	0.2	0.1	0.0	4.8	0.1	0.0	0.0	7.2	0.2	0.0	0.0	12.2	0.1	0.1
married	6.0	5.4	6.9	6.4	64.7	56.8	61.5	70.2	79.7	71.9	78.3	85.7	83.1	63.8	77.7	81.8
separated / divorced	0.4	0.1	0.4	0.2	9.6	6.6	9.0	3.7	11.9	12.2	10.7	3.9	8.9	10.9	7.6	3.0
widowed	0.0	0.0	0.0	0.0	0.7	0.5	0.7	0.8	3.1	2.9	3.9	3.8	5.0	5.9	7.1	9.2
single / never married	93.6	92.8	92.4	93.3	24.8	31.3	28.6	25.3	5.3	5.8	6.9	6.6	3.0	7.2	7.5	5.9
Has children																
no	80.1	88.1	77.6	76.6	55.8	56.0	55.6	50.9	93.0	93.3	91.3	87.2	98.4	99.1	95.9	92.1
yes	19.9	11.9	22.4	23.4	44.2	44.1	44.4	49.1	7.0	6.7	8.7	12.8	1.6	0.9	4.1	7.9
Education level																
missing / n.a.	4.7	4.4	20.0	2.4	1.7	1.0	5.7	1.1	2.4	0.9	4.1	1.8	2.6	0.8	4.4	2.6
3 rd level (ISCED 5-7)	40.0	4.5	5.9	6.4	53.2	26.9	28.4	19.2	41.7	25.9	27.2	12.9	35.1	24.4	24.7	13.5
2 nd level (ISCED 3)	16.5	43.5	38.4	35.6	16.2	46.1	50.4	33.3	17.5	41.5	44.4	17.9	16.6	35.0	42.4	12.4
< 2 nd level (ISCED 0-2)	38.8	47.5	35.7	55.7	28.9	26.1	15.5	46.4	38.4	31.7	24.4	67.4	45.7	39.9	28.4	71.5
Health status																
missing	0.0	2.7	0.3	1.2	0.0	5.2	0.3	0.5	0.1	7.5	0.3	0.5	0.2	12.5	0.7	0.3
good	79.2	87.9	80.5	88.4	80.5	82.4	68.3	77.9	77.8	71.7	49.0	59.5	75.8	62.8	42.8	51.9
fair	16.7	8.4	16.1	9.3	15.4	11.0	25.6	19.2	17.2	18.5	37.6	31.6	20.4	22.4	40.1	35.2
bad	4.0	1.0	3.1	1.1	4.1	1.4	5.8	2.4	5.0	2.4	13.1	8.5	3.6	2.4	16.4	12.6
Self-employed																
missing / n.a.	0.8	2.4	21.1	2.3	0.2	0.9	0.3	0.4	0.2	0.6	0.0	0.1	0.2	1.3	0.0	0.1
no	95.9	96.4	77.4	89.8	87.4	91.7	90.2	77.0	81.1	88.7	88.8	65.4	74.0	83.3	77.2	47.8
yes	3.3	1.2	1.5	7.9	12.4	7.4	9.5	22.6	18.8	10.7	11.2	34.4	25.8	15.5	22.8	52.1
working in public sector																
missing / n.a.	0.9	4.5	3.0	7.4	0.9	7.3	3.4	10.6	1.2	10.8	4.3	12.0	3.0	17.4	7.1	10.2
no	87.8	76.7	78.3	84.6	73.3	64.6	68.3	66.9	73.4	54.8	64.1	65.1	78.8	53.2	67.4	70.5
yes	11.3	18.9	18.7	8.0	25.8	28.2	28.4	22.6	25.4	34.4	31.6	22.9	18.2	29.4	25.5	19.3

Table A1 (continued)

	Aged 16 - 24				Aged 25-49				Aged 50-58				Aged 59-65			
	Lib	soc	cor	sou	lib	soc	cor	sou	lib	soc	cor	sou	lib	soc	cor	sou
Hours worked																
missing	0.1	0.3	3.4	0.8	0.1	0.3	4.6	0.8	0.2	0.3	3.6	1.1	0.2	0.3	9.9	1.3
parttime (<32)	14.8	19.8	9.3	10.7	16.4	16.7	13.1	10.6	21.4	18.4	13.4	11.4	32.0	31.1	14.8	13.2
fulltime (32+)	85.1	80.0	87.3	88.4	83.5	83.0	82.4	88.7	78.4	81.3	83.0	87.6	67.9	68.7	75.3	85.5
Sector of industry																
missing	1.2	8.3	61.9	6.4	1.2	8.1	54.1	10.1	1.0	6.2	59.8	11.6	1.5	7.3	74.3	9.6
agriculture	1.0	3.5	1.0	3.4	0.9	2.6	1.5	5.0	1.0	4.3	2.1	11.3	2.1	8.7	3.0	20.4
industry	29.3	24.0	12.8	41.4	27.7	21.8	13.0	28.6	28.5	22.1	10.7	27.1	31.1	20.5	4.7	21.1
services	68.6	64.2	24.4	48.8	70.2	67.5	31.5	56.3	69.5	67.4	27.4	50.1	65.3	63.5	18.0	48.9
Job level																
missing	5.2	28.2	67.2	17.6	12.8	21.3	57.2	24.1	19.0	28.8	65.0	35.4	26.1	44.1	84.6	52.7
supervisory	5.3	1.2	0.9	1.3	20.7	10.2	5.1	6.1	19.3	12.0	6.0	6.8	14.7	7.5	3.2	4.9
intermediate	12.0	7.4	4.3	4.8	15.0	13.0	9.6	12.6	12.7	11.1	7.6	11.3	9.2	7.4	3.5	7.8
non-supervisory	77.6	63.2	27.6	76.3	51.5	55.5	28.1	57.2	49.1	48.1	21.4	46.5	50.0	41.1	8.6	34.6
Net hourly income (means)																
men	3.8	3.9	3.3	3.2	7.8	8.0	8.1	6.2	7.8	9.4	9.7	6.9	7.5	9.3	9.7	6.6
women	3.5	3.7	3.3	3.0	6.3	6.8	6.7	5.8	6.0	7.2	7.3	5.9	5.5	6.8	6.7	5.3

Source: EUROSTAT, ECHP 1994-1998

Table A2: Results of probit analysis for receiving training while employed, pooled data 94-98

	MODEL 1		MODEL 2		MODEL 3	
	Coeff	(z-value)	coeff	(z-value)	coeff	(z-value)
Individual characteristics						
Age (ref: aged 25-49)						
Aged 16-24	0.402	(20.13)***	0.380	(18.56)***	0.333	(10.88)***
Aged 50-58	-0.017	(-0.71)	-0.105	(-4.56)***	-0.010	(-0.32)
Aged 59-65	-0.098	(1.67)*	-0.229	(-3.94)***	-0.143	(-1.94)*
Sex (ref: male)						
Female	0.073	(5.27)***	0.070	(5.01)***	0.069	(4.94)***
Marital status (ref: married)						
Divorced/separated	0.008	(0.30)	-0.028	(-1.01)	-0.027	(-0.98)
Widowed	-0.213	(-3.08)***	-0.199	(-2.86)***	-0.173	(-2.42)***
Never married	0.076	(4.89)***	0.107	(6.81)***	0.108	(6.88)***
Health (ref: fair health)						
Good health	0.064	(3.71)***	0.049	(2.79)***	0.041	(2.30)***
Bad health	0.040	(0.99)	-0.014	(-0.34)	-0.012	(-0.30)
Human capital indicators						
Education (ref: medium level)						
High education level	0.373	(24.79)***	0.286	(18.41)***	0.291	(18.71)***
Low education level	-0.306	(-20.02)***	-0.361	(-23.32)***	-0.353	(-22.78)***
Duration of job	-0.037	(-19.31)***	-0.022	(-11.34)***	-0.022	(-11.22)***
Job characteristics						
Number of hours worked	0.001	(0.55)	0.001	(0.89)	0.001	(1.03)
Working in public sector	0.343	(24.97)***	0.341	(24.75)***	0.338	(24.53)***
Job level (ref: intermediate job)						
Supervisory job	-0.148	(-6.75)***	-0.093	(-4.22)**	-0.90	(-4.10)***
Non-supervisory job	-0.357	(-18.40)***	-0.308	(-15.86)***	-0.306	(-15.71)***
Unemployed before job	-0.189	(-13.92)***	-0.059	(-4.12)***	-0.062	(-4.32)***
Personal income from work	0.002	(3.51)***	0.002	(3.74)***	0.003	(3.92)***
Other hh income from work	0.003	(8.03)***	0.002	(5.87)***	0.002	(5.81)***
Regime dummies						
(ref: Liberal regime)						
Social-democratic regime			-0.059	(-3.38)***	-0.064	(-3.27)***
Corporatist regime			-0.481	(-28.25)***	-0.477	(-24.62)***
Southern regime			-0.410	(-23.74)***	-0.383	(-18.92)***
Interaction						
Soc * aged 16-24					0.126	(2.37)***
Soc * aged 50-58					-0.078	(-1.12)
Soc * aged 59-65					0.185	(1.36)
Cor * aged 16-24					0.206	(4.49)***
Cor * aged 50-58					-0.297	(-4.90)***
Cor * aged 59-65					-0.600	(-2.80)***
Sou * aged 16-24					0.023	(0.61)
Sou * aged 50-58					-0.422	(-6.75)***
Sou * aged 59-65					-0.785	(-5.50)***
Year dummies						
1994	-0.136	(-6.68)***	-0.126	(-6.12)***	-0.127	(-6.16)***
1995	-0.050	(-2.50)***	-0.046	(-2.31)**	-0.047	(-2.36)***
1996	-0.008	(-0.39)	-0.011	(-0.54)	-0.10	(-0.52)
1997	0.025	(1.27)	0.022	(1.11)	0.024	(1.18)
Constant	-0.860	(-16.73)***	-0.698	(-13.20)***	-0.707	(-13.34)***
Number of observations	125778		125778		125778	
Pseudo R2	0.0975		0.1131		0.1146	

Source: EUROSTAT, ECHP 1994-1998

Table A3: Estimation results of multinomial logit models for transition out of employment, for various age groups (z-values in brackets)

	Model 1		Model 2		Model 3	
	E → U	E → O	E → U	E → O	E → U	E → O
Individual characteristics						
Age (ref: aged 25-49)						
Aged 16-24	-0.030 (-0.40)	0.618 (7.72)**	0.008 (0.11)	0.604 (7.47)***	0.056 (0.34)	0.334 (2.79)***
Aged 50-58	0.378 (3.96)***	0.762 (8.53)***	0.470 (4.87)***	0.732 (8.12)***) 0.622 (3.08)***	0.982 (6.39)***
Aged 59-65	0.490 (2.03)**	2.392 (17.89)***	0.649 (2.64)***	2.338 (17.37)***		
Sex (ref: male)						
Female	-0.083 (-1.49)	0.428 (6.97)***	-0.067 (-1.22)	0.421 (6.82)***	-0.064 (-1.15)	0.365 (5.91)***
Marital status (ref: married)						
Divorced / separated	0.015 (0.15)	-0.275 (-2.16)**	0.117 (1.10)	-0.284 (-2.23)**	0.123 (1.14)	-0.358 (-2.80)***
Widowed	-0.573 (-2.05)**	-0.331 (-1.60)	-0.595 (-2.11)**	-0.314 (-1.52)	-1.579 (-2.06)**	-0.434 (-2.08)**
Never married	0.207 (3.13)***	-0.260 (-3.31)***	0.198 (2.99)***	-0.250 (-3.18)***	0.202 (3.05)***	-0.259 (-3.31)***
Health (ref: medium health)						
Good health	-0.135 (-2.14)**	-0.045 (-0.67)	-0.131 (-2.06)**	-0.049 (-0.73)	-0.137 (-2.16)**	-0.058 (-0.86)
Bad health	0.439 (3.46)***	0.687 (5.58)***	0.487 (3.78)***	0.671 (5.47)***	0.490 (3.82)***	0.619 (5.08)***
Number of children	0.005 (0.16)	0.105 (3.29)***	-0.024 (0.74)	0.105 (3.29)***	-0.026 (-0.80)	0.087 (2.75)***
Human capital indicators						
Education (ref: medium level)						
High education level	-0.277 (-3.57)***	0.160 (2.28)**	-0.146 (-1.85)	0.119 (1.67)*	-0.143 (-1.81)*	0.141 (1.99)**
Low education level	0.245 (4.29)***	0.094 (1.55)	0.288 (4.95)***	0.068 (1.10)	0.301 (5.14)***	0.041 (0.67)
Duration of job	-0.187 (-15.90)***	-0.091 (-8.66)***	-0.204 (-16.57)***	-0.085 (-8.01)***	-0.203 (-16.31)***	-0.075 (-7.01)***
Receiving training	-0.186 (-2.80)***	-0.124 (-2.04)**	-0.116 (-1.71)*	-0.105 (-1.72)*	-0.124 (-1.83)*	-0.096 (-1.58)
Job characteristics						
Number of hours worked	-0.005 (-1.78)*	-0.029 (-8.85)***	-0.006 (-2.13)**	-0.029 (-8.53)***	-0.006 (-2.08)**	-0.030 (8.58)***
Working in public sector	-0.307 (-4.25)***	-0.204 (-3.07)***	-0.313 (-4.33)***	-0.199 (-3.00)***	-0.321 (-4.52)***	-0.219 (-3.30)***
Job level (ref: supervisory)						
Intermediate level	0.023 (0.17)	-0.555 (-4.36)***	-0.050 (-0.37)	-0.535 (-4.20)***	-0.057 (-0.42)	-0.513 (-4.05)***
Non-supervisory level	0.070 (0.61)	-0.337 (-3.40)***	-0.023 (-0.20)	-0.310 (-3.12)**	-0.031 (-0.27)	-0.271 (-2.74)***
Unemployed before job	0.864 (16.92)***	0.010 (0.19)	0.650 (12.42)***	0.082 (1.44)	0.648 (12.40)***	0.092 (1.62)***
Personal income from work	-0.063 (-8.63)***	-0.070 (-7.74)***	-0.059 (-7.99)***	-0.070 (-7.67)***	-0.059 (-7.94)***	-0.073 (-7.95)***
Other hh income from work	-0.016 (-4.70)***	0.004 (2.98)***	-0.012 (-3.44)***	0.004 (2.66)***	-0.012 (-3.47)***	0.003 (1.78)*

Table A3 (continued)

Regime type dummies						
(ref: Liberal regime)						
Social-democratic regime			0.430 (4.32)***	-0.168 (-2.19)**	0.524 (4.21)***	-0.511 (-5.13)***
Corporatist regime			0.700 (7.41)***	-0.225 (-2.97)***	0.657 (5.56)***	-0.291 (-3.15)***
Southern regime			0.728 (8.34)***	-0.157 (-2.30)**	0.805 (7.24)***	-0.431 (-4.87)***
Interaction effects						
SOC * aged 16-24					-0.665 (-2.62)***	1.085 (6.39)***
SOC * aged 50-65					0.208 (0.77)	0.146 (0.76)
COR * aged 16-24					0.372 (1.75)*	0.115 (0.66)
COR * aged 50-65					-0.167 (-0.63)	-0.273 (-1.32)
SOU * aged 16-24					-0.164 (-0.96)	0.527 (3.85)***
SOU * aged 50-65					-0.243 (-1.08)	0.535 (3.54)***
Year dummies						
Year 95	-0.075 (-1.18)	-0.131 (-1.84)*	-0.070 (-1.09)	-0.126 (-1.77)	-0.067 (-1.06)	-0.129 (-1.83)*
Year 96	-0.058 (-0.87)	-0.042 (-0.59)	-0.043 (-0.64)	-0.042 (-0.59)	-0.042 (-0.62)	-0.031 (-0.45)
Year 97	-0.222 (-3.19)	-0.113 (-1.55)	-0.223 (-3.15)***	-0.114 (-1.55)	-0.220 (-3.11)***	-0.093 (-1.28)
Constant	-1.892 (-9.26)***	-1.243 (-6.24)***	-2.307 (-10.84)***	-1.180 (-5.85)***	-2.351 (-10.74)***	-0.999 (-4.98)***
Number of observations	89976		89976		89976	
Pseudo R2	0.1252		0.1292		0.1261	

Source: EUROSTAT, ECHP 1994-1998

Table A4: Estimation results of multinomial logit models for transition from employment to self-employment, (z-values in brackets)

	MODEL 1		MODEL 2		MODEL 3	
Individual characteristics	Coeff (z-value)		coeff (z-value)		coeff (z-value)	
Age (ref: aged 25-49)						
Aged 16-24	-0.416	(-2.95)***	-0.429	(-3.06)***	-0.218	(-0.84)
Aged 50-58	0.293	(2.11)**	0.424	(3.07)***	0.576	(2.61)***
Sex (ref: male)						
Female	-0.520	(-4.81)***	-0.507	(-4.80)***	-0.502	(-4.77)***
Marital status (ref: married)						
Divorced/separated	0.056	(0.26)	0.265	(1.25)	0.279	(1.31)
Widowed	0.036	(0.09)	0.034	(0.08)	0.042	(0.10)
Never married	0.025	(0.23)	0.022	(0.20)	0.018	(0.16)
Has children	-0.050	(-0.60)	0.046	(0.54)	0.043	(0.49)
Health (ref: fair health)						
Good health	0.085	(0.80)	0.025	(0.24)	0.019	(0.18)
Bad health	0.329	(1.27)	0.348	(1.34)	0.346	(1.33)

Table A4 (continued)

Human capital indicators					
Education (ref: medium level)					
High education level	0.191 (1.67)*	0.190 (1.61)	0.191 (1.63)		
Low education level	-0.024 (-0.26)	-0.269 (-2.83)***	-0.260 (-2.71)***		
Duration of job	-0.075 (-5.09)***	-0.079 (-5.35)***	-0.081 (-5.39)***		
Receiving training	-0.457 (-4.21)***	-0.432 (-3.88)***	-0.434 (-3.91)***		
Job characteristics					
Number of hours worked	0.018 (4.08)***	0.016 (3.34)***	0.016 (3.37)***		
Working in public sector	-1.236 (-8.85)***	-1.301 (-9.19)***	-1.302 (-9.19)***		
Job level (ref: intermediate job)					
Supervisory job	-0.501 (-3.25)***	-0.501 (-3.26)***	-0.510 (-3.32)***		
Non-supervisory job	-0.361 (-2.64)***	-0.408 (-2.97)***	-0.414 (-3.02)***		
Unemployed before job	-0.021 (-0.23)	-0.211 (-2.25)***	-0.207 (-2.22)		
Personal income from work	-0.010 (-1.04)	-0.005 (-0.55)	-0.004 (-0.45)		
Other hh income from work	-0.006 (-1.87)*	0.000 (0.05)	0.000 (0.00)		
Regime dummies					
(ref: Liberal regime)					
Social-democratic regime		-0.102 (-0.17)	-0.020 (-0.12)		
Corporatist regime		-0.797 (-5.19)***	-0.677 (-3.88)***		
Southern regime		0.906 (8.06)***	0.986 (7.50)***		
Interaction					
Soc * aged 16-24			-0.840 (-1.43)		
Soc * aged 50-65			-0.115 (-0.31)		
Cor * aged 16-24			0.316 (0.78)		
Cor * aged 50-65			-1.994 (-2.59)**		
Sou * aged 16-24			-0.353 (-1.29)		
Sou * aged 50-65			-0.167 (-0.62)		
Year dummies					
1995	-0.002 (-0.02)	0.031 (0.29)	0.021 (0.27)		
1996	-0.087 (-0.80)	-0.071 (-0.64)	-0.072 (-0.66)		
1997	-0.091 (-0.83)	-0.122 (-1.11)	-0.124 (-1.13)		
Constant	-3.640 (-11.60)***	-3.783 (-11.59)***	-3.847 (-11.65)***		
Number of observations	89976	89976	89976		
Pseudo R2	0.0966	0.1037	0.1051		

Source: EUROSTAT, ECHP 1994-1998