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School-to-Work Transitions in Europe: Analyses of the EULFS 2000 Ad hoc Module

Edited by
Irena Kogan and Walter Müller

Mannheimer Zentrum für Europäische Sozialforschung

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Notes on Contributors

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Cristina Iannelli is Research Fellow in the Centre for Educational Sociology at the University of Edinburgh. Her main research interests include educational transitions and transitions from school to the labour market in comparative perspective, track differentiation in education and social inequalities in educational attainment and occupational prospects of young people. Her work is principally based on quantitative data analysis.

Frank Kalter is "wissenschaftlicher Assistent" at the Faculty of Social Sciences, University of Mannheim. His research interests include residential mobility, migration and ethnic relations, sociology of the family, rational choice theory, and methods. Currently, he is conducting several research projects on immigrants' structural assimilation at the Mannheim Centre for European Social Research (MZES).

Irena Kogan is research fellow in the Mannheim Centre for European Social Research (MZES), University of Mannheim. She is currently involved in a research project on " Integration of Immigrants in the EU countries". Her main research interests include immigration and ethnicity, social stratification and inequality in international comparison.

Walter Müller is professor of sociology at the University of Mannheim and director of the Mannheim Centre for European Social Research (MZES). His main research interest lies in the comparative analysis of social structures of modern societies and his publications include several books and numerous articles on social stratification, labour market developments, and on the role of education for job allocation and for patterns of social mobility in industrial nations. He is currently directing a number of comparative projects including "Educational expansion and social reproduction in Europe" and "Socio-economic development of self-employment in Europe".

Emer Smyth is a Senior Research Officer with the Economic and Social Research Institute, Dublin. Her research interests centre on school to work transitions, gender and the labour market, and school organisation and process.

Maarten Wolbers is Senior Researcher at the Research Centre for Education and the Labour Market (ROA), Maastricht University. He is project manager of a large-scale annual survey among school-leavers from secondary education (the RUBS survey). His main research interests include social stratification and school-to-work transitions.

Introduction

Irena Kogan and Walter Müller

The transition from school to work is among the key topics of current social research and policy interests as it touches upon the core issue of youth labour market integration in different European countries, exhibiting a wide range of institutional structures and macroeconomic context conditions. It has also been one of the most challenging areas of study because of the data constraints and particularly the effective lack of adequate, accessible and comparative longitudinal data. This situation has improved with the introduction of the European Union Labour Force Survey (EULFS) 2000 ad hoc module on transitions from school-to-work, which combines the virtues of large-scale Labour Force Surveys with special topical information on school-to-work transitions. That is, by providing an add-on to the regular LFS surveys, the ad hoc module allows to generate a certain amount of more particular and in part even longitudinal information on transition processes in about 20 European countries, otherwise unavailable at the European level. A particular value of the ad hoc module is that it adds significant detail with respect to *educational attainment and careers* by providing measures of level and type of education at leaving the educational system for the first time. Second, the module adds a *longitudinal perspective on individual employment careers* by providing measures of the incidence of job search periods, job search duration, duration of first job, and occupation of first job, which allow assessing some features of labour market dynamics at the early career stages. Finally, the module has some information on *social background*, so that for the first time, the effects of this variable can also be analysed from the LFS data.

Linkage of the ad hoc module to the established structure of the LFS offers benefits of substantively relevant information, large-scale sample sizes, and a comparable and standardized survey design, all of which are crucial to cross-nationally comparative studies of social processes. In fact, the ad hoc module is very likely to further increase the value of the EULFS to applied and academic research: notably, combining the EULFS core and ad hoc module questionnaire yields a quite extraordinary and currently hardly paralleled database on transition outcomes in Europe, which has rich potentials for comparative analyses of educational careers and patterns of labour market entry.

Produced within the framework of the project “Evaluation and Analyses of the LFS 2000 ad hoc Module Data on School-to-Work Transitions in Europe” this collection of analytic papers covers core issues of transition research, namely effects of social background on educational and occupational careers, the relationship between field of education and gender inequality in the labour market, the incidence and consequences of job mismatches, job search and mobility behaviour in the early work career, and ethnic inequalities in the transition process.

The first paper, by Cristina Iannelli, proves that parental education still affects young people’s educational and early occupational attainment in Europe. It discovers that the relative advantage of

having more educated parents is stronger in the Eastern European countries and weaker in the Nordic countries with other Western and Southern European countries being in an intermediate position. In most countries effect of social background on occupational outcomes appears to be indirect, i.e. mediated through education of young people, and this is particularly true in those countries where the association between young people's and their parents' education is the strongest.

Examining gender differentiation in early labour market outcomes across European countries, Emer Smyth in the second paper of this volume argues that in spite of the fact that the educational attainment of women has now surpassed that of men in many countries, differences persist in the type of educational courses taken by young women and men. Though countries differ in the extent of educational segregation by gender, certain regularities are evident, with health/welfare, education and arts courses dominated by women and engineering courses dominated by men. It is evident that countries with higher levels of educational segregation by gender are also found to have higher levels of occupational gender segregation. At the same time marked gender differences in labour market participation and in characteristics of jobs are still apparent between women and men who have received the same kind of education, regardless of the country considered.

In his paper, Maarten Wolbers explores determinants of job mismatches with respect to field of education and the effects of having a job mismatch on the labour market position of school-leavers in Europe. Investigating differences between European countries in incidence of job mismatch the author claims that in countries in which the share of upper secondary education students in school-based vocational education is high, the incidence of job mismatches among school-leavers is higher. At the same time the negative effect of job mismatches on occupational status is less pronounced in countries with larger share of school-based vocational education. In addition adjustment strategies for emprovement of job match by school-leavers are discussed in depth.

The paper by Markus Gangl examines effects of employment protection legislation on job mobility and status attainment among young people entering the labour market. It empirically demonstrates that strict employment protection legislation is negatively related to both job and status mobility rates, but positively associated with occupational attainment of labour market entrants' first as well as current jobs. The author claims that job shopping, however, typically does not compensate for a good start into a working life and this is particularly true for the low-skilled labour market.

In the last paper of this volume, Frank Kalter and Irena Kogan attempt to disentangle mechanisms leading to ethnic inequalities at the labour market entry using longitudinal information available in the ad hoc module. Because of data constraints the analysis of ethnic inequalities at the labour market entry is reduced to two countries, Belgium and Spain, which significantly differ in the context of immigration. The paper contains detailed analyses of the entry to first jobs of high, medium and lower status for non-EU nationals, immigrants from the Member states as compared to the native-born youth. It also describes general transition patterns of these groups in the two countries.

Various statistical methods are applied in the papers collected in this volume. The choice of methods is made according to their adequacy for the particular research question pursued. While the general strategy is to include into the analysis as many countries as possible, data limitations and particularly small sample sizes in some countries not allowing to conduct reliable statistical analyses have led to the selection of a limited number of countries in some analyses (especially in the study of ethnic inequalities at labour market entry)[1]. The lack of specific variables in some countries as well as country-specific problems with respect to the comparability of variable(s) central to a particular study have unfortunately also restricted the number of countries that could be included in the studies.

The selection of substantive issues studied in the various papers cover core aspects of the transition from school to work. The issues selected, however, should be understood as exemplary. Various other questions could also be profitably studied with the data. Despite some deficiencies present in the data this collection of papers indeed demonstrates the high potential of the LFS 2000 ad hoc module for in-depth research of specific substantive problems of the school-to-work transition process. This potential is likely to be further enhanced once data cumulates through improved regular replications of the module.

[1] Data problems are extensively summarised in the report on data quality and cross-country comparability by Iannelli (2002).

Parental Education and Young People's Educational and Labour Market Outcomes: A Comparison across Europe

Cristina Iannelli

Abstract

The existing social stratification studies show that social inequalities in educational and occupational opportunities are still a feature of our societies. This paper aims to study country differences in the extent to which social origin affects young people's educational and occupational outcomes. Twelve countries covering different geographical, economic and social contexts in Europe are analysed in the paper. The data are drawn from the EU LFS 2000 ad hoc module data which collected information on school-to-work transitions. In agreement with other research findings, the results show that parental education still affects young people's educational and early occupational attainment in all countries under examination. However, as expected, there are significant country variations. Thus, the relative advantage of having more educated parents emerges as stronger in the Eastern European countries and weaker in the Nordic European countries. The other Western European countries are in an intermediate position between these two groups of countries, with the Southern European countries more similar to each other. Moreover, in most countries the effect of parental education on their children's occupational status appears to be mediated mainly by education (i.e. indirect effect). This is particularly true in those countries where the association between children's education and parents' education is strongest. The conclusions outline that more universalistic Welfare State policies in the Nordic countries and the increasing social and economic disparities in the Eastern European countries, during the transition period towards a capitalist economy, may have played an important part in the polarisation of these two groups of countries at the two extremes.

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1 Introduction

Modern societies have been witness to an unprecedented expansion in educational participation and to an increasing importance of educational qualifications in the job allocation process. Modernisation theorists have regarded these phenomena as leading towards a process of equalisation of opportunities and of social mobility (Kerr, Dunlop, Harbison and Myers, 1960/73; Treiman, 1970; Parsons in Grusky, 1994). According to this view, the increased demand for skilled people has led to an expansion of education and to a stronger link between educational and occupational achievements which leaves no room for the operation of ascriptive factors. Thus, meritocratic criteria in the process of job allocation would prevail over particularistic considerations, based on gender, social class or ethnic groups. The empirical evidence on the effect of social origin on children's educational and occupational outcomes, however, has not supported this optimistic view. Indeed, much comparative research has demonstrated that in many countries the association between social origins and educational and occupational opportunities is strong: people from less advantaged social backgrounds are still at higher risk of dropping out of school early (Shavit and Blossfeld, 1993) and of having worse labour market outcomes (Hannan, Hövels, Van Den Berg and White, 1995; Müller, and Shavit, 1998; McCoy, 2000).

The main focus of this paper is the study of cross-country differences in the effect of social background on young people's educational and occupational outcomes. First, we investigate to what extent social background still affects educational attainment of young people in Europe. Then we focus on the role of education as intermediary factor in the transmission of social advantage. In this latter analysis we try to disentagle the direct and the indirect (*via* education) effect of social background on young people's occupational destinations. One of the main strength of the paper is the use of comparable data for 12 European countries. These data have been collected within the EU LFS (ad hoc module 2000) with the aim of gathering information on school-to-work transition. In particular, the paper uses the information collected in the ad hoc module on young people's educational attainment when they left continuous education, on their first significant job entered after leaving education and on the highest level of education or training successfully completed by father or mother. The number and the range of countries analysed in this paper are extremely rich. This allows us to have a wide picture of social inequalities in young people's educational and early occupational destinations in different geographical but also different economic and social contexts in Europe. There are two Nordic countries - Finland and Sweden; three Northern and Central European countries - Austria, Belgium and France; three Southern European countries - Greece, Italy and Spain; and four Eastern European countries - Hungary, Romania, Slovakia and Slovenia.

In the next section we expose some of the main theoretical explanations of the persistence of social reproduction mechanisms (both at micro and macro levels) in modern societies. Section 3 introduces the main research questions and empirical analyses addressed in the paper. Section 4 describes the data and the methodology used. Sections 5 to 7 present some descriptive data and the results of the empirical analyses. Finally, the main results and some remarks are reviewed in section 8.

2 Why are social class differences hard to eliminate?

2.1 Micro-level mechanisms of social reproduction

The empirical evidence has shown that modern societies have not yet succeeded in promoting an equalisation of educational and occupational opportunities among people from different social backgrounds. A large part of the sociological literature has analysed the mechanisms through which social advantage can be transmitted. In relation to social inequalities in educational opportunities, Cultural Capital theory (Bourdieu and Passeron, 1977) and Social Capital theory (Coleman, 1988) have stressed the advantage associated to the higher cultural and social resources that children from higher social classes have at their disposal. Pupils from the most advantaged social classes possess language skills, attitudes and societal values which are highly rewarded by the school system. These attributes are transmitted by the family of origin and reinforced through the interaction with friends and members of the communities which the family belongs to. Another set of theories (Haller and Portes, 1973; Sewell and Hauser, 1980) has focused on another way in which social origin can indirectly affect educational attainment, namely the formation of aspirations. Pupils from higher social classes not only have better opportunities to develop their cognitive skills but are also encouraged by parents and teachers to continue education, obtain higher grades and form higher aspirations for their future. Conversely, children from lower social classes live in a less favourable environment, are encouraged less by their parents and teachers, gain lower grades and develop lower aspirations. Because educational aspirations are an important factor in explaining educational achievement, social differences in aspirations lead to social differences in educational attainment. In a different perspective Rational Choice theorists explain diversities in individuals' educational aspirations as the result of a rational evaluation of the costs and benefits which each social class attaches to various educational outcomes (Boudon, 1974; Gambetta, 1987; Breen and Goldthorpe, 1997). Children from higher social classes have more economic resources and more motivation to acquire higher educational levels. They aim to maintain their social position of origin and the possession of a university degree is an important resource to avoid the risk of downward mobility. In this sense they have more to lose from not reaching the higher educational levels than children from less advantaged social classes. Moreover, due to their large availability of economic resources, the costs associated with a long educational career are lower for them than for the other pupils.

The acquisition of better educational credentials by children from more advantaged social classes ultimately results in a clear advantage when they enter the labour market. As stated by Müller and Shavit, "education is a crucial intervening link between the social background of individuals and their later class destination" (1998, p.1), and this may reinforce social inequalities in occupational destinations. Within a non-industrialised society, family of origin and direct inheritance determine occupational allocation (Grusky, 1983). Thus, conditions of birth are very important factors in determining future productive roles. Direct family transmission of social advantage - through parental social networks, economic support and family inheritance - may still emerge to be significant. However, nowadays the indirect family transmission – through the cultural and economic support

given for the acquisition of higher educational qualifications – is very likely to be the most effective way to ensure future good job opportunities for the offspring.[1] This means that, if the unequal order of social groups' access to credentials remains stable over time, the opportunities for social mobility of young people with lower social backgrounds cannot increase (Collins, 1979).

2.2 The importance of macro-level contexts

Institutional factors may play an important role in weakening (but also reinforcing) the association between social background and young people's educational attainment. According to Shavit and Blossfeld (1996) an equalisation in cultural and economic resources is a prerequisite to achieving equality of educational opportunities among different social classes (pp.241-242). They base their assertion on the empirical evidence that emerged in the studies carried out by Jonsson in Sweden (1993) and De Graaf and Ganzeboom (1993) in the Netherlands (which were parts of the same international comparative project). In Sweden and the Netherlands the association between social origins and educational transitions (that is transitions from primary to secondary and from secondary to tertiary education) was found to have declined over time. The explanation given was that the equalisation of socio-economic conditions, probably due to a very comprehensive welfare state characterising these two countries, had brought about an equalisation of educational opportunities. On the contrary, within the same comparative study (Shavit and Blossfeld, 1993), the results from the other 11 countries - which included Western and non-Western capitalist countries, formerly socialist Western countries and Israel - showed a persistence in the educational selection which favoured children of privileged social origins (p.21).

The expansion of education may be another institutional factor operating in favour of an equalisation of educational opportunities. The reason linked to this belief is simple: if proportions of people entering the education system increase overall more people from less advantaged social backgrounds are likely to enter too. However, expansion of education does not always bring about a reduction in social inequality in educational opportunities. According to Raftery and Hout (1993), in order for an equalisation process happening the participation rates at one level should reach saturation (in the sense that they are 100%) for the most advantaged social classes. In this case a further expansion of education is associated with a real decline in the effect of social origins on equality of opportunities. If this condition is not satisfied, children from advantaged social classes will continue to be substantially advantaged in the chances of going on in education when compared with children from other social classes (Raftery and Hout, 1993; Heath, 2000). Indeed, the reforms aimed at opening up the higher levels of education to students from different educational and social backgrounds often did not bring the expected equalising effect.[2] This seems to suggest that more active policies are needed

[1] This is because, as suggested by the modernisation theories, modern economies heavily (though not exclusively) rely on educational credentials in the job allocation process.

[2] For example the 1960s reforms in Italy, which aimed to give to all students (irrespective of their social and academic background) the opportunity to enter the university system, has not produced the foreseen equalisation effect. This is because guaranteeing access to university has not been a sufficient factor to guarantee equal

specifically aimed at removing barriers and increasing opportunities for children from lower social classes.

The Eastern European countries under the socialist regimes experienced active discriminatory policies in favour of working class children. In the 1950s, policies were introduced which regulated students' selection into secondary and tertiary education: they established strict quotas which ensured that certain proportions of all students admitted to schools and universities must have come from a working class background (Ganzeboom and Nieuwbeerta, 1999; Robert and Bukodi, 2000). These educational policies, together with the abolition of large-scale private ownership and the rights to inherit several types of private goods, were aimed at breaking the transmission of social advantage between generations. Some empirical findings show that these egalitarian educational policies were not successful and in the Eastern European countries, as well as in the Western European countries, the effect of social background on educational attainment did not substantially decrease over time (Mateju, 1993; Szelényi and Aschffenburg, 1993; Heyns and Bielecki, 1993; Ganzeboom and Nieuwbeerta, 1999).[3] In these countries the cultural resources, more than the economic resources, of the family of origin seemed to matter most in the transmission of social advantage (Ganzeboom, De Graaf and Robert, 1990; Mateju, 1990). This may have changed after the fall of the socialist regimes since income inequalities in these countries have been growing. However, during the period of economic transformation towards a capitalist economy, educational inequalities in Eastern European countries have increased (Micklewright, 1999).[4]

It is clear that social inequalities in educational attainment are difficult to eliminate and that this in turn has consequences on the reproduction of inequalities between generations. In this paper we try to define the current situation of social inequalities in young people's educational and occupational outcomes and to assess the degree of similarities and differences across European countries.

3 Research questions

The present work will try to answer the following research questions:

Do European countries vary in the extent to which social background affects young people's educational and labour market outcomes?

Does social origin directly affect young people's labour market entry? Or is the effect of social origin on young people's destinations mediated mainly by education in all countries under examination?

Is it possible to discern patterns (similarities or regularities) across countries in the role played by social origin on young people's destinations?

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opportunity of success. Thus, despite the growing number of students entering the university system, the percentage of graduates has remained particularly low, especially if compared with other OECD countries.

[3] On the contrary in China some equalising effect of similar policies has been found (Deng and Treiman, 1997).

[4] Among the reasons for these growing educational inequalities, there are the widening gap between households' income and the increase in the direct costs of education due to the reduction of public expenditures (e.g. introduction of tuition fees and the abolition of free textbooks; Micklewright, 1999).

As already pointed out, the sociological literature overall indicates that social inequalities are resistant to changes. Thus, we expect that the effect of social background (here measured by parents' education) on young people's educational and occupational outcomes is significant in all countries under examination. However, since cultural and economic disparities present in society and the operation of the institutional factors (education and labour market characteristics and policy decisions) vary across countries, we expect to find significant country variations in the extent to which family of origin affects children's outcomes. There may be a higher level of similarities among the countries which are part of similar geographical as well as economic and social contexts. However, since each country has its own specificities we prefer to avoid grouping the countries in any predetermined manner and to analyse them separately from each other. This makes it possible to explore differences not only across but also within the various areas of Europe.

The empirical analyses start examining patterns of intergenerational (im)mobility in education, that is patterns of stability of mobility between parents and children in the level of education achieved. Secondly, they focus on the effect of social background differences in young people's educational outcomes across countries. Two outcomes will be analysed: early school leaving and tertiary graduation. Finally, the paper analyses cross-country variations among young people with different social backgrounds in occupational destinations (measured by the occupational status of first significant job).

4 Data and definitions

As mentioned in the introduction this paper takes advantage of the availability of new data collected within the EU Labour Force Survey 2000 (ad hoc module). These data provide some retrospective longitudinal information on the transition from school-to-work (e.g. educational attainment when leaving continuous education and first significant job entered after leaving education) of young people aged 15-35 who left education for the first time in the last 10 years.[5] The data were collected in 20 European countries, including 6 Eastern European countries. This paper includes only data from the countries in which information on social background (i.e. parents' education) has been collected and in which a sufficient degree of comparability has been established (see Iannelli, 2001).

In the collection of data within the EU Labour Force Survey 2000 ad hoc module a very extensive definition was proposed by Eurostat for identifying the time of leaving continuous education. "Leaving continuous education" should have included leaving from both education and training (with at least 10% of the total training in the educational/training institution), leaving from full-time or part-time courses and from vocational and general courses.[6] However, a few countries - Hungary, Italy,[7]

[5] Finland and Sweden (but also Luxembourg, the Netherlands and UK, which are not included in this paper) chose a shorter time period, 5 years, as the time span between leaving education and the time of the survey.
[6] Interruptions of study lasting less than 1 year are not considered as "leaving continuous education".
[7] Regional vocational courses (which may have a component of training) are included.

Romania[8] and Slovakia – have adopted a more restricted definition which considers only leavers from the formal education system.

"First significant job" is defined as a job started after leaving continuous education, with a duration of a minimum of 6 months, with a minimum of 20 hrs per week and it excludes casual work or training schemes. With the exception of Belgium, all countries have considered as first significant jobs also those jobs which started before leaving continuous education and went on after leaving education.

The data are analysed using both descriptive statistics and the results of logistic and OLS estimations. These latter analyses are aimed at measuring the significance of the effect of parental education on young people's educational and labour market outcomes and of cross-country differences in the relative advantages associated with different social backgrounds. Dummy variables are used to measure the effect of gender and educational attainment of respondents and parents. Three levels of educational attainment are considered: lower-secondary (ISCED 1-2), upper-secondary/post-secondary (ISCED 3-4) and tertiary education (ISCED 5-6). Young people's occupational status is measured according to the International Socio-Economic Index of Occupational Status (ISEI), with a range of 16 to 90, with the highest value attributed to the highest occupational status (Ganzeboom, De Graaf and Treiman, 1992).

5 Some descriptive statistics

Table 1 presents means and standard deviations of the main characteristics of young people who left continuous education in each country under examination. There are large country variations in the educational attainment achieved by young people when leaving continuous education.[9] Italy, Romania and Spain show the highest percentages of young people leaving continuous education with only compulsory schooling or less (ISCED 1-2). In contrast, in Austria, Belgium, Finland, Greece, Hungary, Slovenia, Slovakia and Sweden the rates of young people leaving with only compulsory schooling or less are low (below 20%). In most countries more than half of the young population has left continuous education with a diploma from upper-secondary or post upper-secondary (non tertiary) education (ISCED 3-4). At tertiary level, Austria, Hungary, Italy, Romania and Slovakia are characterised by low rates of graduation, between 10 and 15 per cent. The countries with the highest percentages of tertiary graduates are Belgium, Finland, France and Spain.

[8] Initial training is part of the education system.

[9] In France the highest level of education refers to both successfully and unsuccessfully completed education when young people left continuous education. However, the data have been corrected in the cases in which young people have declared that they have a lower educational attainment at present than at the time of leaving continuous education.

Table 1: Mean (and in parentheses standard deviation) of the main characteristics of education leavers

	AT	BE	ES	FI	FR	GR	HU	IT	RO	SE	SI	SK
Total Number of cases	4632	2930	14909	3576	19444	7654	8614	17331	4693	1872	1750	3872
Female	0.48	0.48	0.47	0.49	0.50	0.52	0.49	0.48	0.46	0.51	0.47	0.50
	(0.49)	(0.49)	(0.49)	(0.50)	(0.49)	(0.49)	(0.49)	(0.49)	(0.49)	(0.49)	(0.49)	(0.50)
Highest educational attainment when leaving continuous education/training												
Lower-secondary or less	0.15	0.17	0.35	0.12	0.20	0.15	0.15	0.29	0.27	0.14	0.08	0.04
	(0.36)	(0.37)	(0.48)	(0.32)	(0.40)	(0.36)	(0.35)	(0.45)	(045)	(0.35)	(0.27)	(0.19)
Upper-secondary	0.74	0.42	0.22	0.56	0.42	0.58	0.70	0.56	0.63	0.62	0.70	0.86
	(0.44)	(0.49)	(0.41)	(0.50)	(0.49)	(0.49)	(0.46)	(0.49)	(0.48)	(0.49)	(0.46)	(0.34)
Tertiary	0.11	0.41	0.43	0.32	0.37	0.27	0.15	0.14	0.10	0.24	0.22	0.10
	(0.31)	(0.49)	(0.49)	(0.47)	(0.48)	(0.44)	(0.35)	(0.35)	(0.30)	(0.43)	(0.41)	(0.30)
Parents' highest educational attainment												
Lower-secondary or less	0.27	0.45	0.80	0.21	0.51	0.66	0.26	0.68	0.44	0.26	0.33	0.16
	(0.44)	(0.50)	(0.40)	(0.41)	(0.50)	(0.47)	(0.44)	(0.46)	(0.50)	(0.44)	(0.47)	(0.37)
Upper-secondary	0.54	0.29	0.10	0.42	0.34	0.25	0.61	0.26	0.50	0.37	0.51	0.76
	(0.50)	(0.45)	(0.30)	(0.49)	(0.47)	(0.43)	(0.49)	(0.44)	(0.50)	(0.48)	(0.50)	(0.42)
Tertiary	0.19	0.26	0.10	0.36	0.15	0.09	0.13	0.06	0.06	0.36	0.16	0.08
	(0.39)	(0.44)	(0.30)	(0.48)	(0.36)	(0.28)	(0.33)	(0.23)	(0.23)	(0.48)	(0.36)	(0.27)
Experience of first significant job												
Had a first significant job	0.75	0.86	0.68	0.66	0.80	0.71	0.84	0.71	0.48	0.84	0.83	0.67
	(0.43)	(0.34)	(0.47)	(0.47)	(0.40)	(0.45)	(0.37)	(0.45)	(0.50)	(0.37)	(0.37)	(0.47)
Average occupational status	43.2	45.2	41.8	43.7	43.2	44.3	41.5	43.6	40.7	43.7	44.5	40.7
of first significant job (ISEI)	(14.4)	(16.2)	(16.5)	(16.7)	(14.5)	(15.2)	(14.2)	(14.5)	(14.7)	(16.1)	(15.3)	(13.7)

The distribution of parents' highest educational attainment also shows very large country differences. The most striking difference is in the percentages of parents with low levels of education (ISCED1-2). These percentages are particularly high in the countries of Southern Europe (80% in Spain, 68% in Italy and 66% in Greece) and comparably low in Slovakia, Finland, Hungary, Sweden and Austria (below 30%). If compared with the data on children's educational attainment these data point out the remarkable improvement that younger generation in Southern European countries have made in their educational attainment. Overall, in all examined countries, the percentages of young people with at least upper-secondary education are higher than the percentages of parents with the same level of education.[10]

Looking at the occupational outcomes of young people who have recently left education or training, it is clear that their labour market integration varies largely among different countries. Thus, there are countries in which around two-thirds of the education leavers have experienced a first significant job (the Southern European countries, Finland and Slovakia). Romania shows the most negative figure: slightly less than half of its education leavers have entered a first significant job. These proportions are higher in all the remaining countries (ranging from 0.75 in Austria to 0.86 in Belgium). Among those who have acquired a first significant job, overall average occupational status of young people does not differ largely among the countries under examination (between 41 and 45 points in the ISEI classification).

6 Social origin and young people's educational outcomes

6.1 Intergenerational educational mobility

The absolute rates of mobility or stability between parents' and children's educational attainment presented in table 2 show that in 5 countries (Belgium, France, Greece, Italy and Spain) upward mobility, that is children having increased their educational level compared with their parents, is more prevalent (or equally possible in the case of Italy) than stability (that is children having reached the same level of education of their parents). In all the other countries young people have mainly achieved the same levels of education as their parents. Moreover, in all countries, downward mobility is restricted to a limited proportion of young people.[11] Gender differences in the rates of mobility between parents' and children's educational attainment are quite remarkable: in most countries the chances of upward inter-generational educational mobility are significantly higher for women than for men (with the exception of Austria, Romania and Slovakia).

[10] There is only one surprising outcome: in three countries, Austria, Finland and Sweden, the percentage of tertiary graduates is higher among parents than among children. This may be due to the fact that we are referring to the first leaving of education for children and the highest educational attainment for parents at the time of the interview (except for Austria): in these countries returning to education after a break may be more frequent than in other countries and this may partly explain the higher percentages of tertiary graduates among parents. In Austria the question in the ad hoc module asked for the highest educational level of parents when respondents were 15 years old.

[11] The only exceptions are Austria, Finland and Sweden due to the high percentages of parents who have achieved a tertiary qualification compared to their children.

Table 2: Absolute rates of stability, upward and downward mobility between young people's educational attainment and their parents' educational attainment (percentages)

	Stability			Upward mobility			Downward mobility		
	Total	Female	Male	Total	Female	Male	Total	Female	Male
Austria	52	52	52	26	26	25	22	22	22
Belgium	43	40	46	46	51	41	11	9	13
Finland	40	40	40	31	34	27	29	26	33
France	40	38	43	49	53	45	10	9	13
Greece	33	30	36	60	63	57	6	6	7
Hungary	63	63	62	25	26	24	12	11	14
Italy	46	43	47	46	49	42	8	8	10
Romania	62	62	63	29	30	28	9	8	9
Sweden	43	42	42	29	32	24	28	26	34
Slovania	48	43	51	39	46	32	13	10	17
Slovakia	75	75	74	19	19	19	6	6	7
Spain	42	37	47	53	59	46	5	4	7

Note: some rows do not exactly sum to 100% because the percentages have been rounded to the nearest whole figure.

In the following sections we measure the effect of parental education on young people's educational attainment analysing two possible outcomes: early school leaving (at ISCED 1-2) and tertiary graduation (ISCED 5-6). These analyses are aimed at studying cross-country differences in the strength of the association between social origin and young people's chances of leaving education with only compulsory education or less and of graduating from tertiary education

6.2 Early school leaving

Table 3 shows the percentages of early leavers among parents with different educational attainments (outflow percentages). In all countries, with the exception of Finland, the percentages of young people with low educated parents leaving education at an earlier stage are much higher than the percentages of young people who have more educated parents. In 7 of the 12 countries under examination (Belgium, Spain, Finland, France, Greece, Italy and Slovenia) among young people with the low educated parents (ISCED 1-2) women are significantly less likely than men to leave education at lower secondary level. In the remaining countries women's chances of leaving education early do not significantly differ from those of men.

Table 3: Percentages leaving education early (ISCED 1-2) by parents' highest educational attainment (percentages)

	Parents' highest educational attainment								
	ISCED 1-2			ISCED 3-4			ISCED 5-6		
	Total	Female	Male	Total	Female	Male	Total	Female	Male
Austria	24	*26*	*22*	13	*14*	*12*	10	*8*	*12*
Belgium	26	*20*	*32*	12	*10*	*14*	3	*3*	*3*
Finland	13	*10*	*16*	15	*13*	*17*	8	*7*	*8*
France	26	*24*	*29*	17	*15*	*19*	6	*5*	*7*
Greece	20	*16*	*24*	8	*5*	*10*	6	.	*(9)*
Hungary	33	*35*	*32*	9	*9*	*10*	3	.	*(4)*
Italy	38	*34*	*42*	19	*15*	*22*	11	*10*	*12*
Romania	47	*47*	*47*	14	*14*	*14*	.	.	.
Sweden	18	*18*	*19*	12	*11*	*13*	10	.	*13*
Slovania	10	*(7)*	*14*	8	*(6)*	*9*	.	.	.
Slovakia	14	*14*	*15*	2	*2*	*2*	.	.	.
Spain	40	*33*	*47*	21	*14*	*27*	11	*8*	*14*

The results of the binomial logit estimation presented in table 4, model 1, show that, controlling for the effect of gender and parents' education, the chances of young people dropping out at lower-secondary level is highest in Spain (the reference category), Italy and Romania and lowest in Greece, Slovenia and Slovakia. In all countries there are clear differences among young people from different social backgrounds but the relative advantage of having more educated parents varies significantly across-countries (model 2). Thus, the relative advantage of having parents with upper-secondary or tertiary education in reducing the chances of early leaving is strongest in the Eastern European countries (with the exception of Slovenia) and smallest in the Nordic countries (Sweden and Finland). The Southern European countries (Spain, Italy and Greece) do not differ significantly from each other and have an intermediate position with respect to the size of the effects of parental education on the children's risk of early dropout. In Austria and France inequalities by parental education are also relatively close to this intermediate group, while in Belgium inequalities seem to be rather higher. These results are also confirmed when controlling for country differences in the effect of gender on young people's chances of early school leaving (that is, including the interaction effects between gender and country in addition to the effects already contained in model 2; results not shown).

Table 4: Binomial logit estimations of the chances of dropping out at lower-secondary level (or earlier) and of graduating from tertiary education

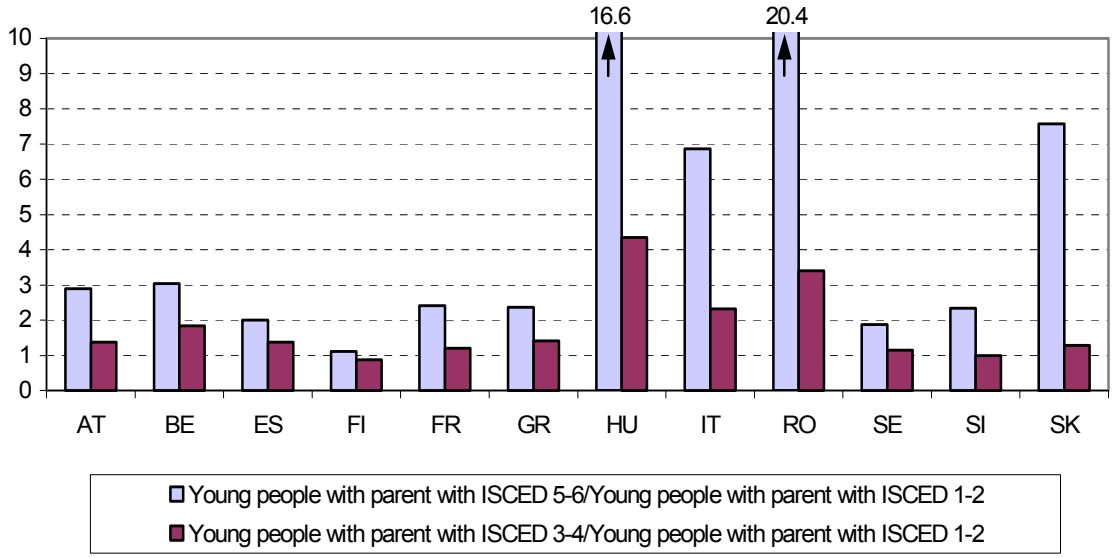
	Dropping-out at lower-secondary level/Continuing studying		Graduating at tertiary level/dropping out earlier	
	Model 1	Model 2	Model 1	Model 2
Intercept	-0.22***	-0.23***	-0.70***	-0.70***
Female	-0.35***	-0.35***	0.40***	0.41***
Parents' education (ref. Lower-secondary education or less)				
Upper-secondary education	-0.97***	-0.92***	0.49***	0.57***
Tertiary education	-1.71***	-1.65***	1.77***	1.62***
Country (ref. Spain)				
Austria	-0.59***	-0.74***	-2.33***	-2.07***
Belgium	-0.69***	-0.63***	-0.46***	-0.69***
Finland	-0.72***	-1.49***	-1.20***	-0.24**
France	-0.51***	-0.61***	-0.46***	-0.39***
Greece	-1.00***	-0.98***	-0.87***	-0.82***
Hungary	-0.63***	-0.28***	-1.90***	-3.00***
Italy	-0.08***	-0.08**	-1.93***	-2.20***
Romania	-0.05	0.27***	-2.13***	-2.97***
Sweden	-0.66***	-1.06***	-1.52***	-1.00***
Slovenia	-1.43***	-1.73***	-1.37***	-1.02***
Slovakia	-2.05***	-1.39***	-2.31***	-2.32***
*Country*parents' education*				
Austria*upper-secondary		0.13		-0.21
Austria*tertiary		0.59***		-0.39*
Belgium*upper-secondary		-0.02		0.34**
Belgium*tertiary		-0.74**		0.47***
Finland*upper-secondary		1.08***		-0.78***
Finland*tertiary		1.06***		-1.45***
France*upper-secondary		0.34***		-0.29***
France*tertiary		-0.12		0.16*
Greece*upper-secondary		-0.19		-0.09
Greece*tertiary		0.24		-0.30**
Hungary*upper-secondary		-0.64***		0.97***
Hungary*tertiary		-1.05***		1.79***
Italy*upper-secondary		-0.06		0.37***
Italy*tertiary		0.04		0.83***
Romania*upper-secondary		-0.78***		0.72***
Romania*tertiary		-3.02***		2.31***
Sweden*upper-secondary		0.40*		-0.38*
Sweden*tertiary		0.93***		-0.72***
Slovenia*upper-secondary		0.58**		-0.55***
Slovenia*tertiary		0.29		-0.39*
Slovakia*upper-secondary		-1.22***		-0.32
Slovakia*tertiary		-1.49*		0.91***
-2 Loglikelihood	80117.229	79550.184	83374.516	82423.185

* significant at 0.05 level; ** significant at 0.01 level; *** significant at 0.001 level
Reference categories: Spanish young people, men and those parents with lower-secondary education or less.
Total number of cases: 71564

6.3 Tertiary graduation

After having examined the chances of early leaving, we now pass on to examining the chances of leaving from tertiary education among young people with different social backgrounds. The odds ratios of graduating from tertiary education show that young people with highly educated parents always have a higher chance of graduating than children with less educated parents (figure 1).

Figure 1: Odds ratios of graduating from tertiary education



The countries which show comparably low levels of tertiary leavers (i.e. Hungary, Italy, Romania and Slovakia) are also those where the gap between young people with different social backgrounds is higher.[12] The models presented in the third and fourth columns of table 4 test for the significance of the differences found at descriptive level. Parents' education has a strong significant effect on the chances of leaving at tertiary level: thus, young people with highly educated parents have significantly higher chances of gaining a tertiary qualification (model 1). Moreover, even controlling for the effect of gender and social background, young people in Austria, Slovakia, Romania, Italy and Hungary show a much lower likelihood of graduating from tertiary education. With the exception of Austria, the relative advantage of having more educated parents (model 2) is significantly higher in those countries where the proportion of tertiary graduates is particularly low (Slovakia, Romania, Italy and Hungary). As before in the case of early school leaving, the relative advantage of having highly educated parents is also relatively high in Belgium, while Spain (the reference category), France and Austria hold an intermediate position. At the other end of the range, in Finland, Sweden and Slovenia the relative advantages associated with higher social backgrounds are significantly lower.[13] There is again a divide

[12] No gender differences have been found in the odds ratios of graduating from tertiary education among people who have low and highly educated parents.

[13] As in the previous analysis, the results do not change when controlling for country differences in the effect of gender.

between the Nordic countries (but also Slovenia), which show lower levels of social differentiation, and the Eastern European countries (with the inclusion of Italy and, to a lesser extent, Belgium) which show higher levels of social differentiation in the chances of tertiary graduation.[14]

To summarise: Substantial improvements in the educational attainment of young people, when compared with their parents' education, have been made in most countries. In Spain, Italy and Romania, however, the chances of young people dropping out at lower-secondary level are still quite high. As expected, in all countries parental education significantly affects the chances of dropping out early (at lower-secondary level) and of graduating from tertiary education. However, there are significant country differences in the extent to which parental educational attainment affects these chances. Social differences in the chances of leaving education early have been found to be relatively small in the two Nordic countries under examination (Finland and Sweden). In contrast, they are particularly large in the Eastern European countries (with the exception of Slovenia) while the Southern European countries tend to have an intermediate position. The relative advantages of having more educated parents in reducing the risks of dropping out early are also on an intermediate level in the countries of Central Europe, with Belgium tending towards the more unequal pole and Austria and France tending towards smaller inequalities. At tertiary level, except for Austria, the countries which have the lowest rates of graduation from tertiary education (Italy, Hungary, Romania, and Slovakia) also show the highest social differences in the likelihood of leaving education with a tertiary qualification. Also at this level more equal opportunities for young people with different social backgrounds have been found in the Nordic countries.

7 Parents' education and young people's occupational status

Overall average occupational status of young people does not differ substantially across countries (table 1). However the dispersion around this average may be more or less pronounced in each country depending on the strength of the effect of young people's educational attainment and social background on their occupational status.

Nowadays, educational attainment is the main determinant of individual occupational positions and larger differences ought to emerge among people with different educational attainments than among people with different social backgrounds. Indeed, figure 2 and figure 3 confirm this expectation: in all countries under examination the gap between low educated young people and the most educated ones in the average occupational status of their first significant job is wider than the gap between young people with lower social backgrounds and those with higher social backgrounds.

[14] We have also run a conditional logit model of educational transitions (Mare, 1981) which measures the probabilities of graduating from tertiary education, conditioning the model on the prior completion of upper-secondary education. This model considers only people who continued their studies after lower-secondary education and acquired at least an upper-secondary qualification and it excludes people who dropped out of school early. The results do not differ substantially from those presented in the unconditional logit model (table 4, columns 3 and 4).

Figure 2: Average occupational status of young people with different educational attainment levels at the moment of leaving continuous education/training

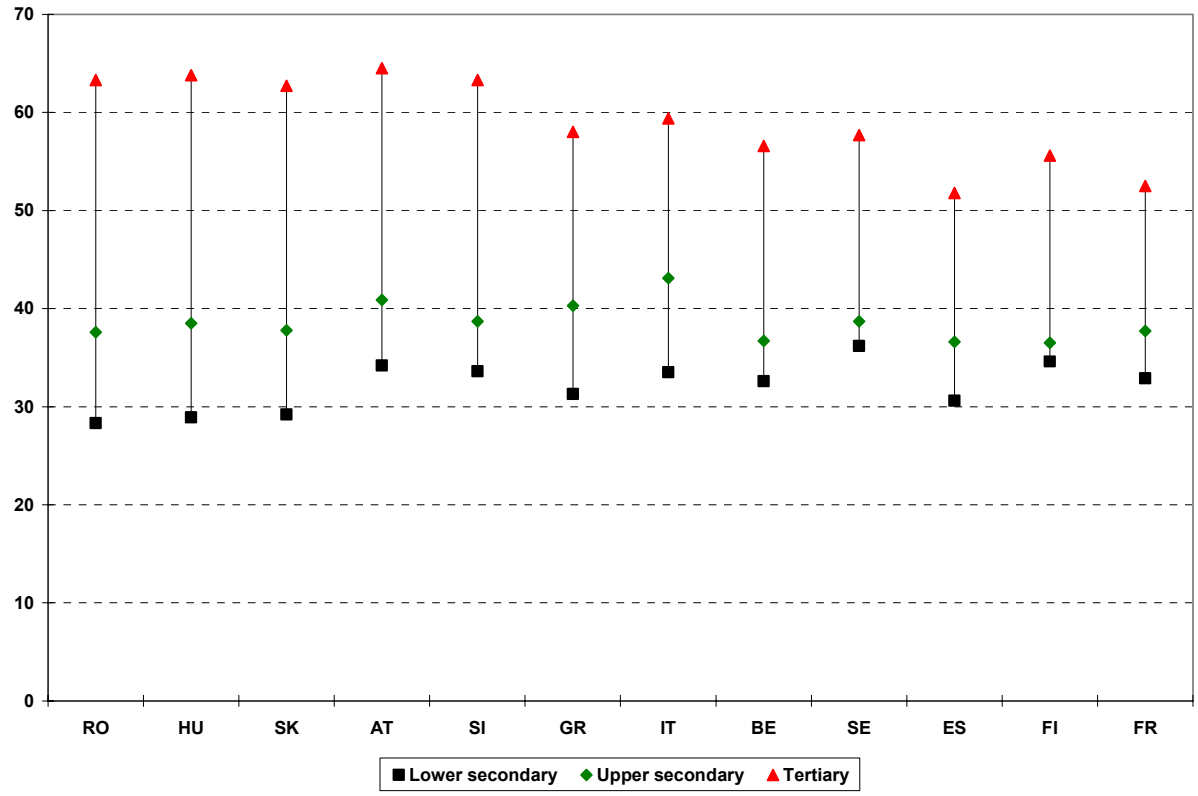
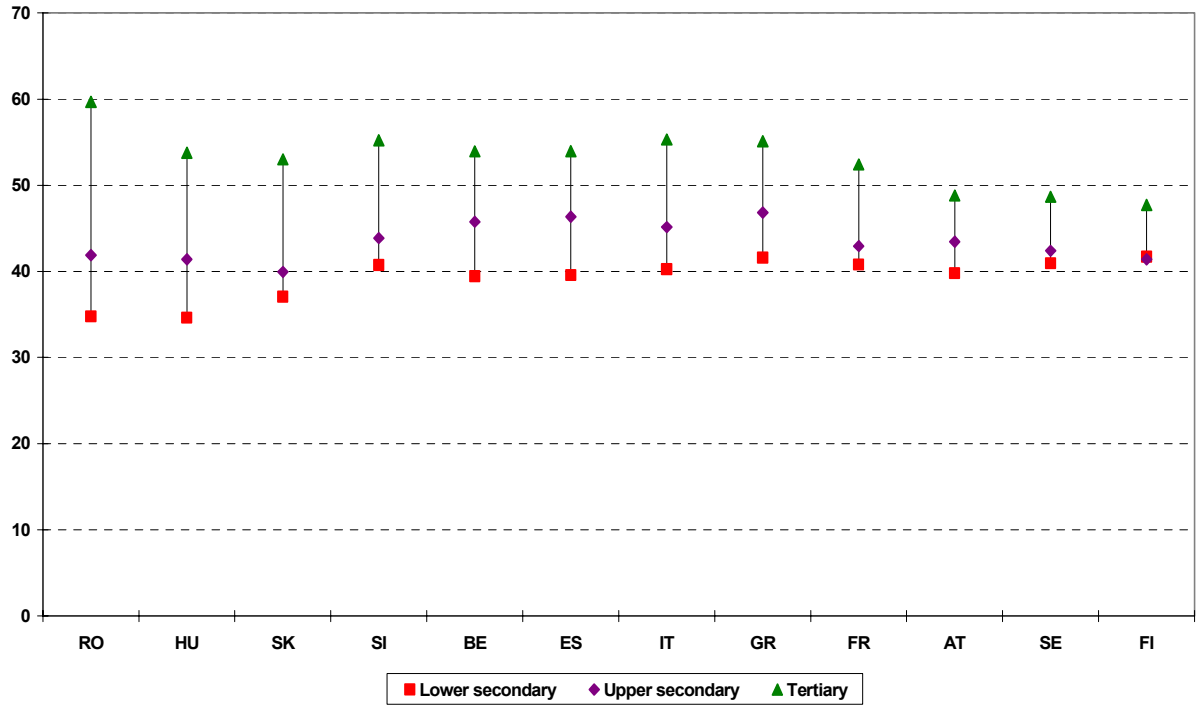


Figure 3: Average occupational status of young people with parents with different educational attainment



Interestingly, the Eastern European countries show that the gap among young people with different educational attainments and different social backgrounds is larger than anywhere else. If in these countries educational credentials are particularly important for the acquisition of better jobs and at the same time the acquisition of these credentials is highly affected by social background factors, then the reproduction of inequalities between generations is likely to be linked mostly to the possession of various levels of education. This issue is addressed in the second research question of this paper. In the countries under examination, is the social advantage of having a highly educated parent transmitted mainly via the acquisition of higher educational qualifications (i.e. indirect effect of parental education)? Or is there a significant (direct) effect of social origin even when controlling for young people's educational attainment?

The results of the pooled sample of countries (table 5) show that the effect of parental education is strong and significant even after controlling for the effect of gender (model 1) and educational attainment (model 2). Thus, a direct effect of parental education on young people's destinations does emerge. However, the strength of the association between parental education and children's occupational status is reduced by approximately half when controlling for educational attainment.

Table 5: OLS regression of occupational status of first significant job

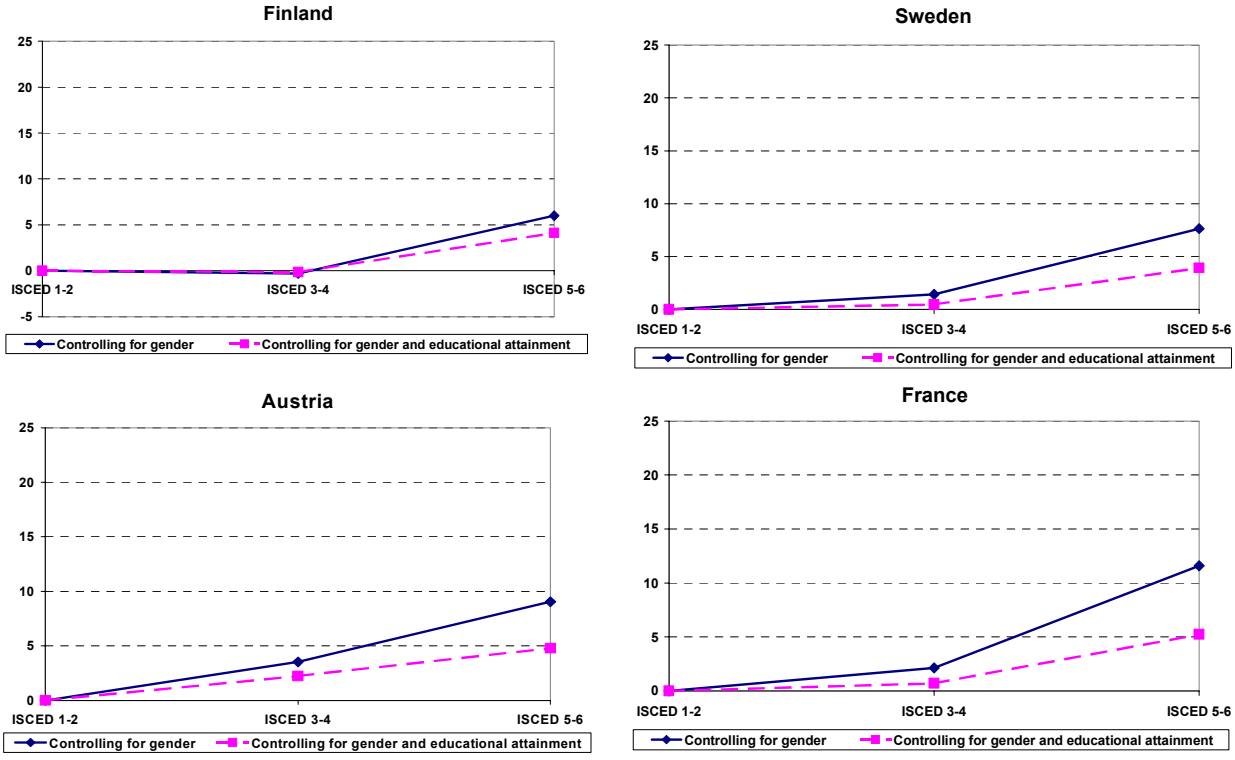
	Model 1	Model 2
Intercept	38.28***	28.46***
Female	3.63***	1.95***
Parents' education (ref. Lower-secondary education or less)		
Upper-secondary education	4.35***	2.29***
Tertiary education	13.47***	6.42***
Young people's educational attainment (ref. Lower-secondary education or less)		
Upper-secondary		5.50***
Tertiary		22.16***
Country (ref. Spain)		
Austria	-1.38***	4.49***
Belgium	0.31	1.04***
Finland	-2.96***	-0.40
France	-0.36	0.33*
Greece	1.82***	3.98***
Hungary	-3.05***	2.22***
Italy	0.77***	6.14***
Romania	-2.70***	2.01***
Sweden	-2.40***	1.75***
Slovenia	0.27	3.62***
Slovakia	-3.87***	1.55***
R square (adjusted)	0.102	0.371

* significant at 0.05 level; ** significant at 0.01 level; *** significant at 0.001 level
Reference categories: in model 1, Spanish young people, men and those parents with lower-secondary education or less and in model 2, also those who have achieved only lower-secondary education or less.
Total number of cases: 60879

From table 5 it also emerges that the occupational status of young people's first significant job is particularly high in Italy, Austria, Greece and Slovenia. On the contrary, young people in Spain, Finland and France have lower chances of acquiring a high occupational status at the time of first entry into the labour market.

Do countries differ in the extent to which differences in social origin affect young people's occupational position? We present, graphically plotted, the average increase in the occupational status linked to having a parent with upper-secondary and tertiary education (figures 4-15). These results are derived from the OLS regression estimations carried out separately in each country. The two lines in each graph represent the gross (correspondent to model 1) and the net effect (after controlling for respondents' educational attainment, correspondent to model 2) of parental education. Three distinct groups of countries emerge: the Nordic countries (Finland and Sweden), Austria and France where the effect of parental education (both direct and indirect) is smaller than anywhere else (figures 4-7). Indeed, they show the lowest increase in the average occupational status when comparing young people with parents with upper-secondary or tertiary education to young people with parents with only lower-secondary education or less.

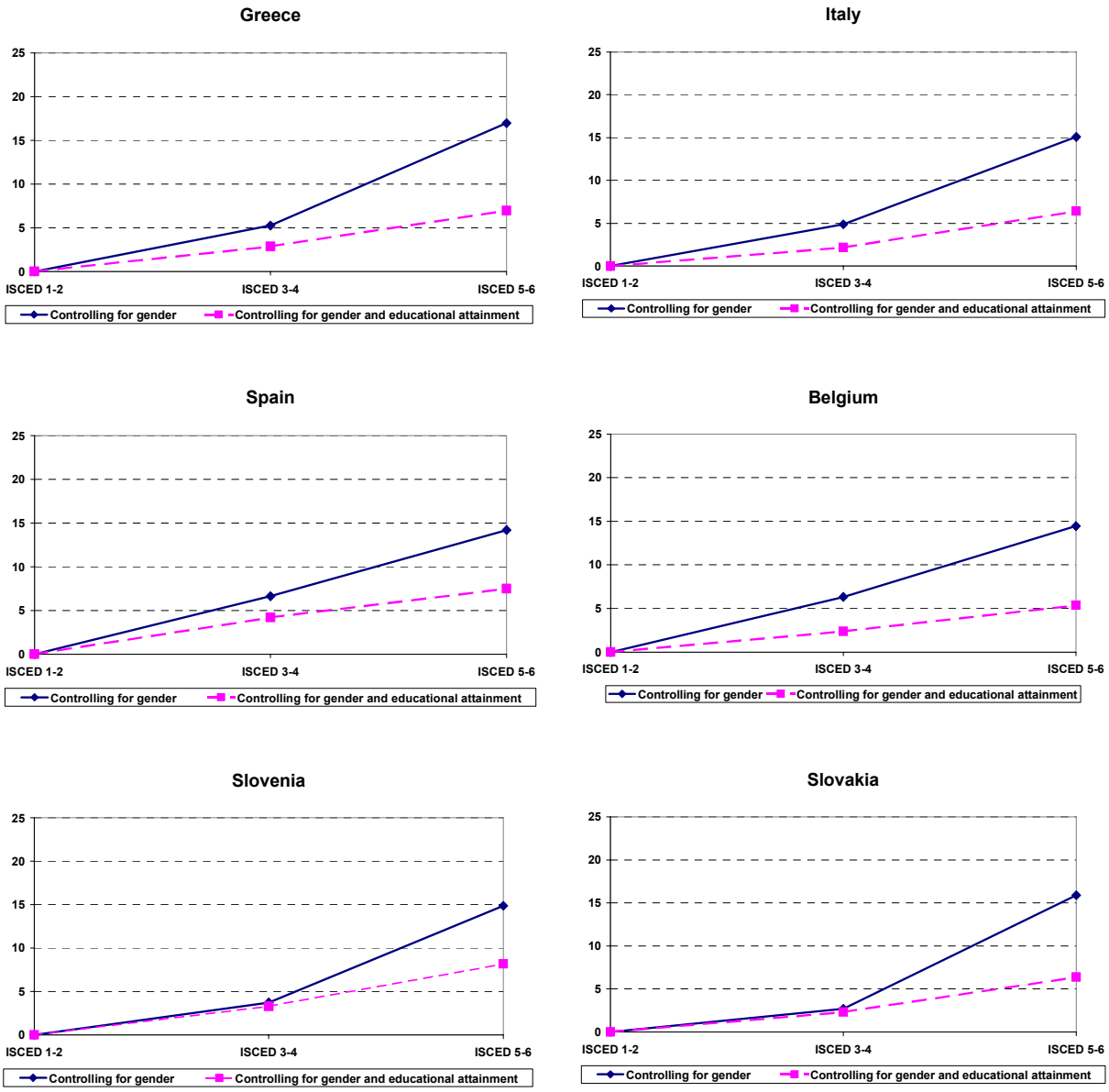
Figures 4-7: OLS regression effects of parental education on young people's occupational status



The second and larger group of countries is composed of the Southern European countries (Greece, Italy and Spain), Belgium, Slovenia and Slovakia (figures 8-13). They show a gross effect of parental education on children's occupational status higher than the first group of countries. However, they

differ from each other in the extent to which the effect of parental education is mediated by young people's educational attainment (see the lower line in the graphs).[15]

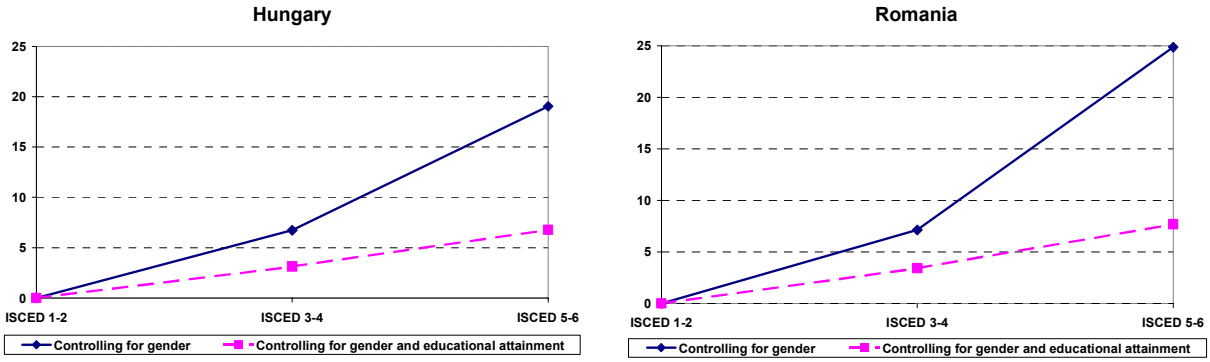
Figures 8-13: OLS regression effects of parental education on young people's occupational status



The third group is composed by two countries, Hungary and Romania (figures 14-15). In these countries the effect of parental education is particularly strong if compared to the other countries. This is especially true for the gross effect of parental education which is higher than anywhere else.

[15] For example, in Spain and Slovenia the lower line in the graphs is relatively closer to the upper line than in the other countries within the same group indicating that in these countries the advantages of parental education are mediated less through their children's education and appear to operate more directly.

Figures 14-15: OLS regression effects of parental education on young people's occupational status



In general, country differences in the gross effect of parental education are much larger than country differences in the net effect of parental education. Indeed, after controlling for individual's educational attainment, the effect of parental education becomes much smaller, even though it still remains significant. Table 6 summarises these results and presents the percentage reduction in the effect of parental education when controlling for the effect of individual's educational attainment (i.e. percentage reduction between the coefficients of model 1 and model 2 of the country OLS regression estimations).

Table 6: Predicted average increase in the occupational status for young people having parents with tertiary education compared to those with parents with lower-secondary education or less

	Model 1	Model 2	% reduction in the effect of parental education from model 1 to model 2
RO	24.86	7.68	69.1%
HU	19.05	6.77	64.5%
GR	16.96	6.96	59.0%
SK	15.89	6.37	59.9%
IT	15.07	6.41	57.5%
SI	14.87	8.17	45.1%
BE	14.45	5.36	62.9%
ES	14.19	7.49	47.2%
FR	11.06	5.25	54.7%
AT	9.05	4.79	47.1%
SE	7.64	3.92	48.7%
FI	5.99	4.12	31.2%

There clearly emerges a strong correlation between the size of the gross effect and the extent to which the effect of parental education is mediated through education. In the countries with the largest gross effects of parental education (Romania and Hungary) most of these effects appear to be generated *via* educational attainment of children, while in the countries with the smallest

gross effects (Finland and Sweden) relatively little inequality appears to be generated *via* education.[16] At the top of the list of countries in which the level of parental education shapes most strongly the occupational attainment in young people's first significant job are the countries where – as seen before – the association between children's education and parents' education is strongest. Vice versa, in Finland, Sweden, Austria and France, where the effect of parental education on children's educational attainment is smaller, parental education is also less influential for children's early occupational attainment. The level of social inequality in the educational system thus appears highly consequential for the intergenerational reproduction of inequality.

To summarise, the main findings reported in this section show that the differences in occupational status of first job are larger among young people with different levels of educational attainment than among young people with different social backgrounds. Moreover, a large part of the effect of parental education is mediated by the acquisition of different levels of education. This means that young people with highly educated parents have higher chances of acquiring higher educational qualifications which are crucial credentials for securing better occupational destinations. The results show that there is also a significant direct effect of parental education (that is after controlling for the effect of individuals' educational attainment) on young people's occupational status in all countries under examination. As is the case for the results found in the analysis of the effect of social background on young people's educational attainment, in the Nordic countries the effect of parental education is smaller and in two of the Eastern European countries, Hungary and Romania, the effect is significantly larger than in the other countries. Moreover, in these latter countries the effect of parental education on occupational destinations is mainly indirect, that is mediated by education.

8 Conclusions

The present paper aimed to measure the degree of social reproduction in educational attainment and the role of education as intermediary factor in the reproduction of social differences in occupational destinations across twelve European countries. It has benefited from using new data collected at European level (the EU LFS 2000 ad hoc module) which contain information on school-to-work transitions. In particular, for the purpose of this paper, we used the information on the highest level of education or training successfully completed by father or mother, together with the information on the highest level of education completed when respondents left continuous education and respondents' occupational status of first significant job. Supported by previous research and by the existing theories on the mechanisms through which the social advantage continues to be transmitted, we expected to find in all countries a significant effect of social background on young people's educational attainment and early occupational status. However, the strength of this effect was expected to vary across

[16] Moreover, even though country variations in the net effect of parental education are smaller than in the gross effect, the net effect of parental education appears to be significantly larger in the Eastern and Southern European countries and smaller in the Northern and Central European countries (see column 2 of table 6).

countries due to the strong institutional and other differences that shape educational and labour market attainment in the countries under examination.

The results showed that, indeed, parental education still affects young people's educational outcomes. However, social differences in the chances of dropping out from school early have been found to be smaller in the two Nordic countries (Finland and Sweden) and larger in the Eastern European countries (with the exception of Slovenia). At tertiary level, Hungary, Italy, Romania and Slovakia, the countries which have the lowest rates of graduation from tertiary education (together with Austria), show the highest social differences in the likelihood of leaving education with a tertiary qualification. Also in this case the Nordic countries show more equal opportunities for young people with different social backgrounds of reaching the highest levels of education.

In the analysis of the effect of parental education on young people's early occupational destinations it emerged that in all countries there is both a significant direct and indirect effect of parental education on young people's destinations. Overall, half of the association between parental education and children's occupational status can be explained by the association between parents' education and young people's education. However, in most countries, and especially in Hungary and Romania, the indirect effect of social background is stronger than the direct effect. This means that young people from more advantaged social backgrounds are more likely to acquire higher educational qualifications which in turn guarantee them better occupational destinations.

The analyses on the effect of parental education on young people's educational and occupational outcomes have revealed very interesting differences but also similarities among groups of countries. The relative advantage of having more educated parents emerges as stronger in the Eastern European countries and weaker in the Nordic European countries. This is not a surprising finding if it is read in conjunction with the existing literature on these countries. The expansion of education, together with policies offering a more universal type of Welfare State, may have decreased, though not cancelled out, social inequalities in the Nordic countries. On the other hand, earlier research on state-socialist societies has already shown that an equalisation of educational and labour market opportunities between working class and middle class children was partly achieved in the early stages of the communist regimes while later developments towards more equality have been eroded. Moreover, in the transition period towards a capitalist economy, which is the period in which the young people in our sample left continuous education, these countries have experienced an increase in the social and economic disparities. This may have led to a sharpening of educational and occupational inequalities among young people with different social backgrounds. The other Western European countries are in an intermediate position between these two groups of countries. Among them, the Southern European countries are revealed to be another consistent group. The relative advantage of having more educated parents on young people's educational and occupational achievement is similar among these countries (with the exception of Italy in the analysis of young people's chances of tertiary graduation). According to the present data, Austria, Belgium and France appear somewhat more

heterogeneous, with Austria and France being closer to the more equal countries while Belgium appears to tend towards more inequality.

The lack of additional information on social background (e.g. parents' occupational class or economic well-being) and on respondents' educational attainment (e.g. type of education attended, vocational or general) must lead to a very cautious assessment of the present results. We were not able to study in detail the mechanisms by which social differences are reproduced in different countries. Moreover, both for a more encompassing European assessment and for more systematic interpretation of the results, the paper would need the inclusion of other countries in the analyses (such as the other Nordic countries, Germany or UK and Ireland). This would help to consolidate results and to identify the factors responsible for the similarities and differences found among the countries. Thus, the collection of more extensive comparable data is highly desirable to improve knowledge on the crucial issue of varying levels of social inequality in the European societies.

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Gender Differentiation and Early Labour Market Integration across Europe

Emer Smyth

Abstract

This paper examines gender differentiation in early labour market outcomes across European countries. In spite of the fact that the educational attainment of women has now surpassed that of men in many countries, differences persist in the type of educational courses taken by young women and men. Countries differ in the extent of educational segregation by gender but certain regularities are evident, with health/welfare, education and arts courses dominated by women and engineering courses dominated by men. Countries with higher levels of educational segregation by gender are found to have higher levels of occupational segregation by gender. However, marked gender differences are still apparent between women and men who have received the same kind of education, regardless of the country considered.

Author acknowledgements

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1 Introduction

This paper uses data from the Eurostat ad hoc module on school to work transitions to examine gender differentiation in educational outcomes and labour market entry patterns across Europe. It examines the extent to which the nature of gender differentiation may be constructed within different social, economic and cultural contexts (see, for example, Connell, 1987; Rubery and Fagan, 1995). The main research questions addressed are as follows:

1. How do European countries differ in the level and nature of education achieved by young people?

2. Is the nature of gender differentiation in early labour market integration similar across European countries?

3. To what extent is gender differentiation in early labour market integration due to differences in the level and type of education obtained by young women and men?

4. To what extent does gender segregation in the type of education translate into gender segregation in occupational outcomes?

Three sets of hypotheses are tested:

1. The type of differentiation evident within the education/training system will influence the nature of gender differences in educational outcomes. More specifically, in systems with a high level of track differentiation, clear gender differences are likely to be apparent in the type of education received by women and men.

2. The type of differentiation evident within the education/training system will influence the nature of gender differences in transition outcomes. More specifically:

- Occupational segregation by gender will be more evident in track-differentiated systems if strong gender differences are apparent in the field of education followed.
- In track-differentiated systems, gender segregation in labour market outcomes will tend to be mediated by the type of course taken. Thus, young women will enter female-typed occupations or industries because they have taken part in courses oriented towards such outcomes.
- In contrast, in more general systems, gender differences will arise in the interaction between occupational choice and employer preference on entry to the labour market. Thus, direct gender effects on occupational allocation should be stronger in general than in track-differentiated systems.

3. Different dimensions of gender differentiation are not necessarily interrelated. For example, gender segregation may act as a protection against unemployment for female labour market entrants in a context where unemployment rates are lower in 'female' occupations. Conversely, young women entrants may be excluded from the labour market if the occupational structure is highly segregated and 'female' jobs are already over-crowded.

The following section describes the data and measures used in the remainder of the paper.

2 Data and methodology

The paper draws on data from the Eurostat ad hoc module on school to work transitions which was included in the Labour Force Survey in the second quarter of 2000. For reasons of comparability, data on Ireland, Latvia, Lithuania and Luxembourg are not presented in this paper (see Iannelli, 2001). An innovative feature of the ad hoc module on transitions was the collection of information on the field of education studied by young people before leaving education. However, some problems relating to comparability arose in the implementation of the module (see Iannelli, 2001). In Denmark, Italy, Portugal and the United Kingdom the information on field of education related to the highest level of education completed rather than the level when leaving education for the first time. For this reason, most analyses in the paper exclude these countries.

The paper focuses on a number of different dimensions of early labour market experiences among young women and men. Firstly, the proportion of young people who have obtained a first significant job by the time of the interview is taken as an indicator of successful labour market integration. 'First significant job' refers to a job that has lasted at least six months and is more than twenty hours a week. For the purposes of the paper, young people who described themselves as not having had a first significant job but had been in employment for six months or more are reclassified as having had a first significant job. Analyses of labour market integration are supplemented with analyses of labour force participation and current unemployment. Secondly, measures of educational and occupational segregation are derived using an index of dissimilarly in order to compare the levels of segregation across countries. Thirdly, the paper focuses on the extent to which young women and men enter predominantly male, mixed or predominantly female occupations. Fourthly, occupational status is measured using the International Socio-economic Index (ISEI) scale (see Ganzeboom and Treiman, 1996). Finally, occupational upgrading is based on the extent to which young people have increased their occupational status between their first significant job and their current job.

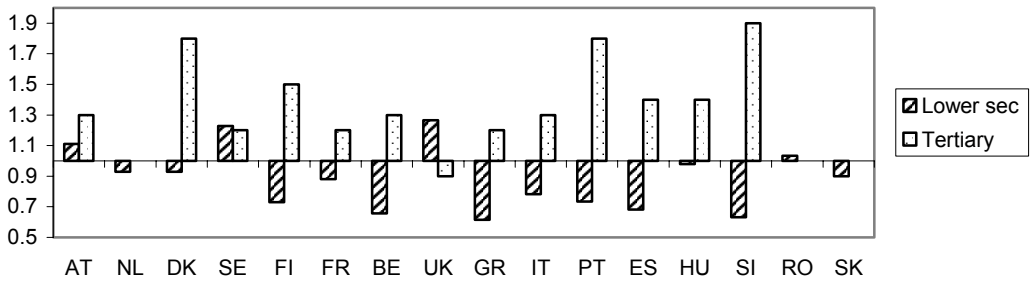
Analyses of labour market integration, labour force participation, unemployment and occupational upgrading use a series of logistic regression models. Analysis of gender-typing of occupation uses a multinomial logistic regression model. Analysis of occupational status uses linear regression modelling techniques. In all of the models, the focus is not on country differences per se but rather on the relative size of gender differences across the different European countries analysed. For the most part, Spain is used as the base category in the analyses due to the data quality and relative lack of missing information.

The paper opens by discussing differences across European countries in the level and type of education obtained by young women and men.

3 Educational attainment among young people

Recent decades have been characterised by considerable educational expansion across Europe, particularly among young women. In some European countries, female educational attainment (in terms

Figure 1 Female representation by level of education



of educational level) has now surpassed that of men (Müller and Wolbers, 1999). Figure 1 indicates female representation by lower secondary and tertiary levels in the countries concerned. This is derived from the ratio between the proportion of females at a particular educational level and the proportion of males at that level. A ratio greater than one indicates the over-representation of women in a particular educational category while a ratio below one indicates under-representation.

Three groups of countries emerge from the data. In the first group, female leavers are relatively advantaged in terms of their educational attainment; that is, they are significantly underrepresented among lower secondary leavers and over-represented among tertiary leavers. Countries in this group include Belgium, Spain, Finland, Greece, Italy and Portugal. In the second group, a higher proportion of females than males leave at the tertiary level but there is no significant difference in their distribution between the lower and upper secondary levels. This group includes Denmark, France, Hungary, and Slovenia. Only in the United Kingdom are young women found to be under-represented among tertiary leavers. In the remaining countries (Austria, the Netherlands, Romania, Slovakia and Sweden), no significant gender differences are found in the educational attainment levels of system leavers.

4 Field of education

In all of the countries considered, significant gender differences were evident in the field of education studied at both upper secondary and tertiary levels.[1] The extent of gender differentiation in type of education can be analysed using an index of dissimilarity measure which indicates the proportion of males (or females) who would need to 'change' fields in order to achieve an equal distribution across categories by gender.[2] Indices of dissimilarity tend to be sensitive to the number of categories considered with more aggregated classifications often concealing gender segregation. Indices are also

[1] Lower secondary education was usually more general in nature so field of education is not considered for those who left from this level.

[2] This is calculated by summing the absolute differences in the proportion of males and females in each educational field and dividing the total by two.

likely to be sensitive to sample size, in particular to the greater clustering in certain categories potentially found using small samples.

Field of education was classified into twenty-five detailed categories which could be aggregated into nine broad categories. Indices of dissimilarity at upper secondary and tertiary levels were calculated for both classifications: firstly, to allow for the existence of gender segregation within broader categories (for example, the physical sciences may differ in their gender profile from the life sciences); secondly, to increase comparability across countries as in Romania and Sweden only the broader classification was employed; and thirdly, to allow for the fact that apparent segregation at the more detailed level may reflect sampling variation (especially where sample sizes are relatively small) rather than gender segregation per se.

Table 1 Gender segregation by field of education (index of dissimilarity)

Level of education	Upper secondary			Tertiary	
Field categories	Broad	Detailed	% in general courses	Broad	Detailed
Austria	58.9	60.2	9.4	44.5	52.2
Netherlands	38.8	42.2	20.4	26.9	32.1
Sweden	37.8	n.a.	13.9	41.0	n.a.
Finland	35.6	38.1	34.2	44.2	50.1
France	57.6	59.0	2.3	33.1	34.5
Belgium	32.4	33.0	43.5	28.4	35.7
Greece	16.7	17.4	62.9	31.4	32.6
Spain	32.1	32.9	51.5	38.2	40.3
Hungary	47.7	57.7	11.5	41.8	42.4
Slovenia	47.1	54.2	0.4	37.3	46.0
Romania	22.7	n.a.	14.3	38.6	n.a.
Slovakia	43.3	47.2	8.2	38.9	40.5

The indices of dissimilarity for both the more detailed and broader classifications are presented in Table 1. At upper secondary level, gender segregation was found to be greatest in Austria, France and Hungary, with the lowest levels found in Greece and Romania. In the case of Greece, the low degree of gender segregation reflects the fact that the majority (62%) of students had taken general courses. In overall terms, gender segregation is somewhat lower in countries where a greater proportion of young people leave the upper secondary level having taken general courses. A correlation of r=-0.74 is found between the proportion of young people in general tracks at upper secondary level and the degree of gender segregation found at this level. At tertiary level, gender segregation was greatest in Austria, Finland and Hungary, and lowest in the Netherlands and Belgium. In general, segregation was found to be greater using the more detailed classification, indicating that broad categories of educational field may encompass subject areas with very different gender profiles.

Table 2 Female-intensity of different fields of education at upper secondary level

	Education	Arts	Social/ business	Science	Engineering	Agriculture	Health/ welfare	Services
Austria	F	F	F	M	M	N	F	F
Netherlands	.	.	F	.	M	(M)	F	F
Sweden	F	F	F	M	M	N	F	F
Finland	.	F	F	.	M	F	F	F
France	N	F	F	N	M	M	F	F
Belgium	F	F	F	M	M	M	F	F
Greece	F	F	F	N	M	.	F	N
Spain	(F)	F	F	M	M	M	F	F
Hungary	F	(F)	F	M	M	N	F	F
Slovenia	(F)	(F)	F	(F)	M	N	F	N
Romania	F	F	F	F	N	N	F	N
Slovakia	F	F	F	N	M	N	F	F

Table 3 Female-intensity of different fields of education at tertiary education level

	Education	Arts	Social/ business	Science	Engineering	Agriculture	Health/ welfare	Services
Austria	F	F	N	M	M	M	F	M
Netherlands	N	(F)	N	(M)	M	.	F	.
Sweden	F	F	N	M	M	.	F	.
Finland	F	F	N	N	M	(N)	F	N
France	F	F	N	M	M	M	F	N
Belgium	F	N	N	M	M	N	F	N
Greece	F	F	N	M	M	M	N	M
Spain	F	N	F	N	M	M	F	F
Hungary	F	F	N	M	M	M	N	M
Slovenia	(F)	(F)	F	N	M	(N)	(N)	(M)
Romania	F	F	F	F	M	M	F	M
Slovakia	F	F	F	F	M	M	N	M

M: >60% male, F: >60% female, N: 40-60% female

´Fields of education were classified in terms of their 'female-intensity'; the original intention was to divide fields into 'female-intensive' (>60% female), 'mixed' (40-60% female) and 'male-intensive' (<40% female) subject areas. However, as countries differ in their female representation at the different educational levels, the cut-offs were adjusted accordingly. General courses were assigned to a separate category.

Tables 2 and 3 present the profiles of subjects at upper secondary and tertiary levels. The more aggregated classification is used due to the small numbers in some of the detailed subject areas. There are certain commonalities across countries in the gender-typing of subject areas. In all countries considered, engineering courses at upper secondary level tend to be male-intensive while health/welfare, arts/humanities, education courses and social science/business courses are female-intensive.[3] Science and agriculture courses tend to be male or mixed in profile. In the case of agriculture, the profile appears to be somewhat less male-dominated in the Eastern European countries than in the Western European countries. The gender profile of those taking general and services courses varies by country, although the profile is predominantly female in the majority of countries.

At tertiary level, health/welfare, arts/humanities and education remain female-intensive while engineering courses remain male-intensive. Social/business courses become more mixed in profile than at upper secondary level while service courses become somewhat more divergent in their gender profile than at upper secondary level.

Therefore, in spite of differences across countries in the type of education taken by leavers, there are certain commonalities in the gender-typing of certain subject areas. In other cases, however, the gender-typing of educational fields is societally specific.

5 Gender differences in labour market integration

Figure 2 shows the proportion of young people who had achieved a first significant job by the time of the interview. It should be noted that a few of the countries (Finland, the Netherlands and Sweden) differ from the others in taking a time-span of five years since leaving education for the first time, a pattern which will have implications for the degree of labour market integration observed. Compared with other countries, those in Romania (male and female) are less likely to have obtained a significant job within ten years of leaving education. In Austria, Belgium, Spain, France, Greece and Hungary, young women are significantly less likely to have entered stable employment than young men. However, as the nature of gender differences varies across the countries examined, it is difficult to disentangle the effects of gender from those of educational level and type.

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[3] In the latter case, the exception is France where education courses are mixed in profile. However, this pattern should be interpreted with caution since fewer than one per cent of the upper secondary leavers in the sample had taken education courses.

Figure 2 Proportion who have obtained a first significant job

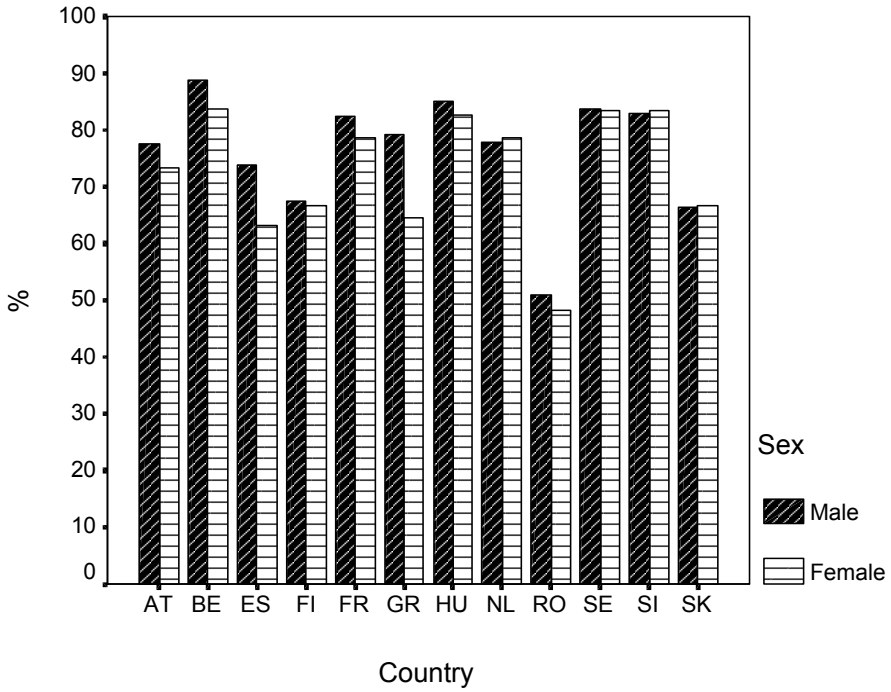


Table 4 presents a binary logistic regression model predicting the chances of having obtained a first significant job by the time of the interview. A logistic regression model allows us to assess the effect of the explanatory variables on the log odds of obtaining a first significant job. A positive coefficient indicates increased chances of obtaining a first significant job while a negative coefficient indicates reduced chances. Thus, in Table 4 young women are less likely (-0.439) to obtain a first significant job than young men who have spent a similar amount of time on the labour market (Model 1). This coefficient can be transformed into an odds ratio whereby young women are seen to be 0.6 times as likely to obtain a first significant job as young men.

Due to the shorter time span on the labour market observed in Finland, the Netherlands and Sweden, a variable representing time since leaving education (measured in months) is included in the model to correct for these differences. Young women are less likely to have obtained a job by the time of the interview than their male counterparts, even controlling for gender differences in educational level, field, family status and educational participation. As might be expected, educational level is strongly predictive of labour market integration with tertiary leavers 1.7 times more likely to have obtained a job than upper secondary leavers (see Model 2, Table 4). Those leaving at the lower secondary level are much less likely to have obtained a first significant job; this pattern is especially marked for young women (see Model 5).

Field of education is predictive of labour market integration (see Model 3). Leavers from all educational fields, especially health, services and education, have a higher chance of obtaining a job than those leaving from general tracks; the effect of having an Arts background is somewhat lower than for the other tracks. The effects of field are found to vary by gender. The returns to taking a social

Table 4 Logistic regression model of obtaining a first significant job

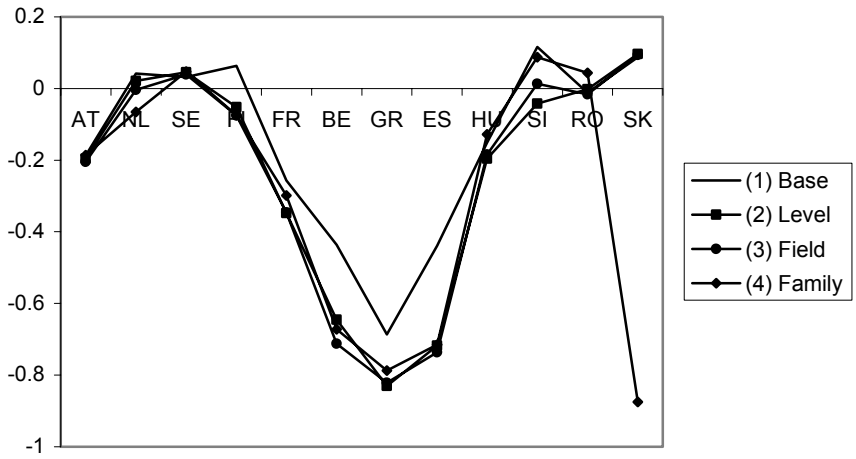
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.057	0.140***	-0.176***	-0.046	-0.123	-0.206***
Female	-0.439***	-0.718***	-0.736***	-0.715***	-0.598***	-0.476***
(Base: male)						
Time since leaving education (months)	0.017***	0.019***	0.020***	0.020***	0.020***	0.020***
***Educational level*:**						
Lower secondary		-0.988***	-0.651***	-0.626***	-0.486***	-0.538***
Tertiary		0.714***	0.607***	0.595***	0.650***	0.663***
(Base: Upper secondary)						
***Gender*Educational level**:						
Female*Lower sec.					-0.292***	-0.208**
Female*Tertiary					-0.071	-0.097
***Educational field*:**						
Education			0.514***	0.487***	0.275	0.273
Arts			0.196***	0.143**	0.001	0.009
Social Science			0.471***	0.414***	0.228***	0.230***
Science			0.340***	0.295***	0.222**	0.226**
Engineering			0.472***	0.392***	0.485***	0.482***
Agriculture			0.260***	0.252***	0.422***	0.423***
Health			0.659***	0.589***	0.224	0.214*
Services			0.590***	0.545***	0.656***	0.651***
(Base: General)						
***Gender*Educational field**:						
Female*Education					0.234	0.248
Female*Arts					0.187	0.171
Female*Social science					0.244**	0.242**
Female*Science					0.141	0.131
Female*Engineering					-0.351***	-0.334***
Female*Agriculture					-0.399**	-0.389**
Female*Health					0.413***	0.432***
Female*Services					-0.195	-0.182
***Family status*:**						
Has child				-0.402***	-0.397***	-0.074
(Base: no child)						
***Female*Family status**						-0.590***
Educational participation:						
Participated in past 4 weeks				-0.646***	-0.642***	-0.651***
(Base: did not participate)						
***Female*Educational participation**						-0.007
-2 log likelihood	77082.06	73216.26	71515.82	66640.35	66508.46	66341.46

Note: *** p<.001, ** p<.01; country and country*gender interactions are controlled for (see Appendix Table A1).

science/business or health course are higher for women than for men while the returns to taking an engineering or agriculture course are lower for women (Model 6).

Young women who have a child are much less likely than other groups to have obtained a first significant job, perhaps because they have already withdrawn from the labour market (see below). Having taken part in an educational course in the previous four weeks is associated with lower chances of having integrated into the labour market; the effect is similar for males and females.

Figure 3 Country variation in gender differences in obtaining a first significant job



The pattern of labour market integration varies by country with the lowest levels found in the Southern (Spain and Greece) and two of the Eastern European countries (Slovakia and in particular Romania); the highest levels of integration are found in Belgium and Hungary (see Appendix Table A1). However, the concern of this paper is with the way in which gender differences in labour market integration may vary across countries. Figure 3 represents gender differences across countries with the four lines representing the size of these differences (1) without controls, (2) controlling for educational level, (3) controlling for level and field, and (4) controlling for level, field and family factors, respectively. The values are calculated from Appendix Table A1.[4] Negative values indicate that women are less likely than men (all else being equal) to have obtained a first significant job. There is very little gender differentiation in labour market integration in the Scandinavian countries, the Netherlands and the Eastern European countries (with the exception of Slovakia). In contrast, there are very marked gender differences evident in Belgium and the Mediterranean countries. These differences are not explained by gender differences in educational level, field of education or family status. In fact, the gender gap increases when these factors are taken into account.

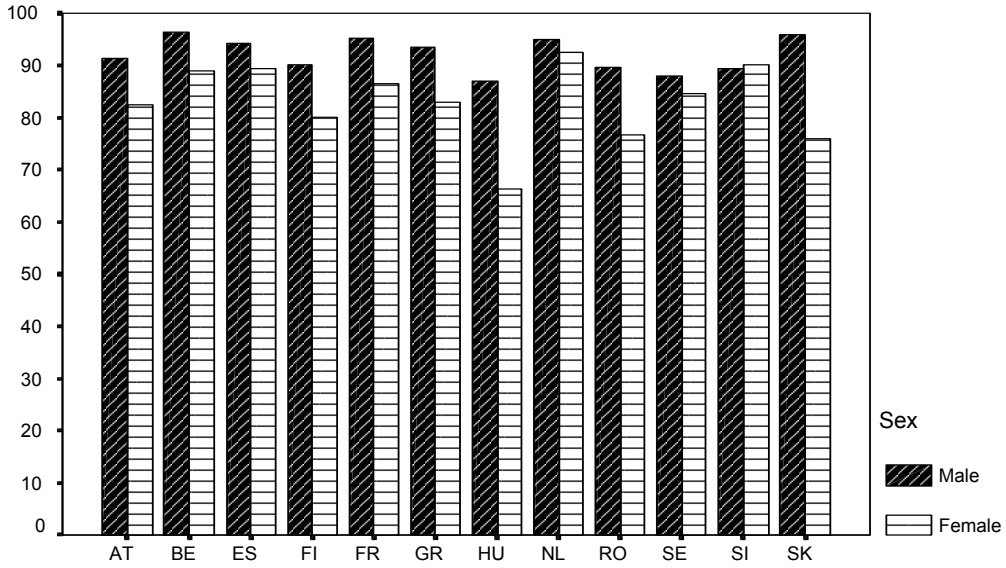
The relative disadvantage of young women in making the transition to a significant job found in some European countries (especially Belgium, Greece and Spain) may be due to a number of factors including gender differences in withdrawal from the labour force, gender differences in unemployment rates and gender differences in concentration in temporary/intermittent employment. These dimensions are explored in the remainder of this section.

Figure 4 illustrates labour force participation rates at the time of the interview by gender and country.[5] With the exception of the Netherlands and Slovenia, male participation rates were significantly higher

[4] Thus, the value for Austria in line 1 is calculated from the gender coefficient in Table 4 (-0.439) added to the gender*country interaction term for Austria (0.252); this gives the gender difference for Austria.
[5] Those in military service are excluded for the purposes of this analysis.

than female rates in all of the countries studied. The factors influencing labour force participation rates were analysed using a logistic regression model (see Table 5).

Figure 4 Labour force participation rates by gender and country



Female participation rates are found to be lower than male rates, even controlling for educational level and field (see Model 3). Participation is strongly associated with educational level with the lowest levels found among those with lower secondary education and the highest levels found among those with tertiary education. The positive effect of having a tertiary education is found to be somewhat less for women than for men (see Model 5). Leavers from all educational fields have a higher activity rate than those from general tracks. The effects vary somewhat by gender, however, with women who had taken engineering, agriculture or service courses having much lower participation rates than their male counterparts. Having a young child is associated with lower activity rates, but only for women. Similarly, having taken an educational course in the previous four weeks is associated with lower participation rates, indicating that a number of young people have returned to full-time education.

Figure 5 indicates cross-national variation in gender differences in labour force participation levels. Female labour force participation levels are lower than male levels across all European countries, with the exception of Slovenia. The greatest gender gaps are found in the Mediterranean countries, Hungary and the Northwestern countries (Belgium and France). In the case of Belgium, Greece and Spain, therefore, it would appear that the lower levels of labour market integration among young women (indicated above) are, at least in part, due to the greater tendency for young women to withdraw from the labour force.

Figure 6 indicates the unemployment rate (that is, the proportion of those in the labour force who were unemployed at the time of interview) by gender and country. In Spain, France, Greece and the Netherlands, female unemployment rates are significantly higher than those found among their male

Table 5 Logistic regression model of labour force participation

	(1)	(2)	(3)	(4)	(5)
Intercept	3.111***	3.349***	3.001***	3.394***	-2.980***
Female	-0.801***	-1.035***	-1.034***	-0.993***	-0.395***
(Base: male)					
Time since leaving education (months)	-0.001	0.001**	0.001	0.003***	0.004***
***Educational level*:**					
Lower secondary		-0.952***	-0.572***	-0.530***	-0.519***
Tertiary		0.742***	0.649***	0.678***	0.876***
(Base: upper sec.)					
***Gender*Educational level**:					
Female*Lower sec.					-0.049
Female*Tertiary					-0.275**
Educational field:					
Education			0.333***	0.315***	0.275
Arts			0.319***	0.225**	0.338*
Social Science			0.604***	0.505***	0.512***
Science			0.289***	0.179*	0.132
Engineering			0.497***	0.354***	0.666***
Agriculture			0.403***	0.327***	0.761***
Health			0.559***	0.497***	0.725***
Services			0.512***	0.408***	0.687***
(Base: General)					
Gender*Educational field:					
Female*Education					0.041
Female*Arts					-0.183
Female*Social science					-0.059
Female*Science					0.137
Female*Engineering					-0.636***
Female*Agriculture					-0.656**
Female*Health					-0.288
Female*Services					-0.365*
Family status:					
Has child				-1.070***	-0.085
(Base: no child)					
Female*Family status					-1.420***
Educational participation:					
Participated in past 4 weeks				-1.610***	-2.179***
(Base: did not participate)					
Female*Educational participation					0.929***
-2 log likelihood	50340.76	47638.21	46624.37	41062.23	40228.95

Note: *** p<.001, ** p<.01; country and country*gender interactions are controlled for (see Appendix Table A2).

counterparts. The model presented in Table 6 indicates that young women are more likely to be unemployed than young men, even when gender differences in educational level and field are taken into account.[6]

[6] Family status and educational participation are not included in this model because they are expected to influence decisions about remaining in the labour market rather than 'success' within the labour market per se.

Figure 5 Country variation in gender differences in labour force participation

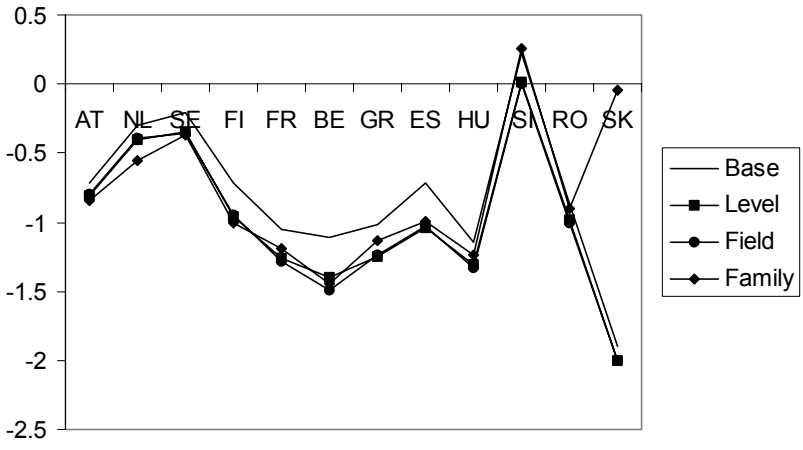
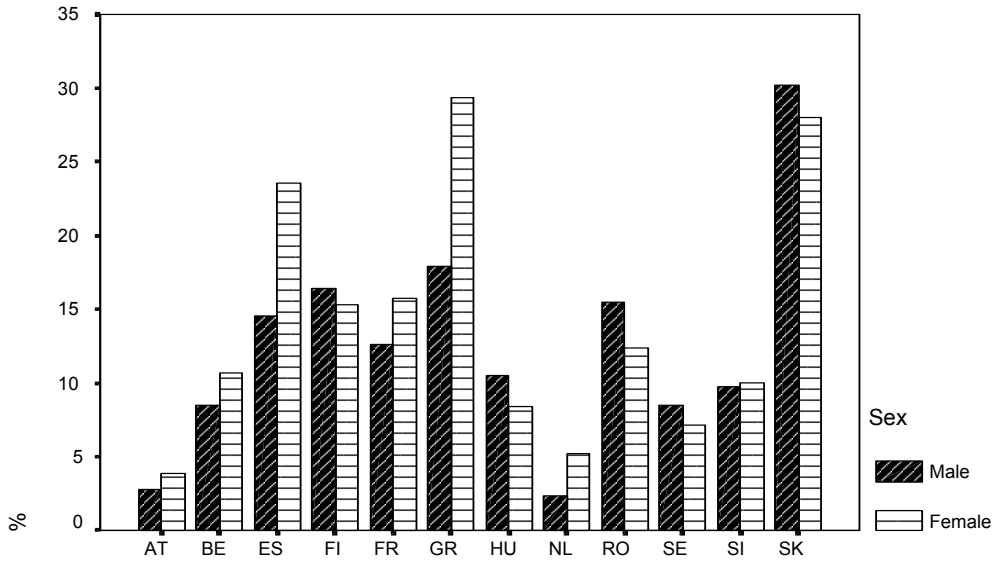


Figure 6 Unemployment rate by gender and country



Unemployment is found to decrease with amount of time since leaving education. Lower secondary leavers have the highest unemployment rates while the lowest rates are found among tertiary leavers; the pattern is similar for males and females. Model 3 indicates that unemployment rates are highest among those with an arts education and lowest among those who have taken health/welfare courses. On closer inspection, the pattern is found to vary by gender. An arts or social science background is associated with higher unemployment for males only while women with an engineering background have higher unemployment rates than their male counterparts (Model 4).

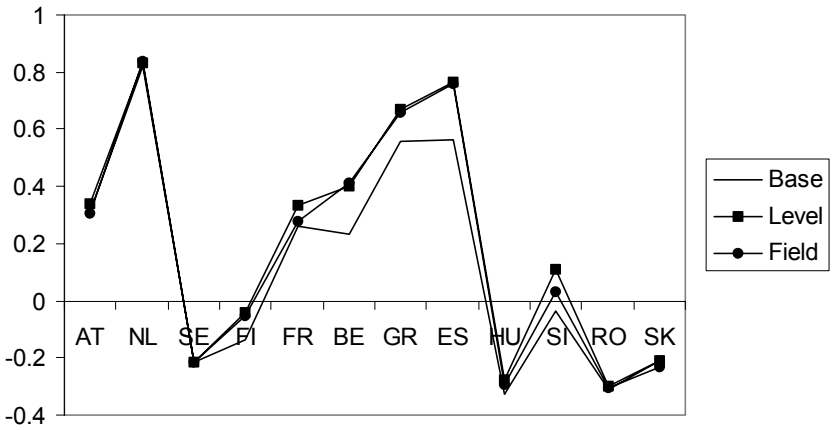
Table 6 Logistic regression model of current unemployment

	(1)	(2)	(3)	(4)
Intercept	-1.131***	-1.056***	-1.005***	-1.035***
Female	0.563***	0.763***	0.762***	0.834***
(Base: male)				
Time since leaving education (months)	-0.011***	-0.013***	-0.013***	-0.013***
***Educational level*:**				
Lower secondary		0.536***	0.493***	0.518***
Tertiary		-0.741***	-0.748***	-0.792***
(Base: upper sec.)				
***Gender*Educational level**:				
Female*Lower sec.				-0.053
Female*Tertiary				0.049
Educational field:				
Education			-0.057	0.273
Arts			0.194**	0.554***
Social Science			-0.010	0.198***
Science			-0.086	0.022
Engineering			-0.087	-0.157
Agriculture			0.010	-0.127
Health			-0.243***	0.001
Services			-0.043	-0.021
(Base: General)				
***Gender*Educational field**:				
Female*Education				-0.427
Female*Arts				-0.542***
Female*Social science				-0.304**
Female*Science				-0.202
Female*Engineering				0.414***
Female*Agriculture				0.391
Female*Health				-0.311
Female*Services				-0.037
-2 log likelihood	52229.368	50393.929	49475.107	49371.245

Note: *** p<.001, ** p<.01; country and country*gender interactions are controlled for (see Appendix Table A3).

Female unemployment rates are the same as, or lower than, male rates in the Eastern European and Scandinavian countries, all else being equal (see Figure 7). In contrast, female rates are much higher than male rates in the Netherlands, Austria, France, Belgium and the Mediterranean countries. In Belgium and the Mediterranean countries, gender differences actually increase when educational level and field is taken into account. In overall terms, the lower chances of labour market integration found among young women reflect not only lower labour force participation rates but also higher rates of unemployment among those who remain within the labour force. The pattern may also be explained by gender differences in the proportion in intermittent employment. Unfortunately, complete work history information indicating the prevalence of intermittent employment is not available from the ad hoc module. However, young women in Greece and Belgium are more likely to be on a temporary contract at the time of the interview than their male counterparts (analysis not shown here).

Figure 7 Country variation in gender differences in current unemployment



6 Occupational segregation by gender

In all of the countries, the distribution across occupational groups differs significantly for males and females. As with educational field, occupational groups were divided into 'female-intensive', 'mixed' and 'male-intensive' categories, adjusting the cut-offs for the representation of women in the workforce in each country. In all countries, senior managerial, craft and machine operator jobs tend to be dominated by men while females tend to predominate in clerical and service jobs (see Table 7). It should be noted that these broad categories include jobs with very different gender profiles.

Table 7 Female-intensity of different occupational groups

	Senior managers	Profess-ional	Technical	Clerical workers	Service workers	Agricultural workers	Craft workers	Machine operators	Elementary occupations
AT	M	N	N	F	F	M	M	M	N
NL	M	N	N	F	F	.	M	(M)	N
SE	M	N	N	F	F	.	M	M	N
FI	M	F	N	F	F	N	M	M	N
FR	M	N	N	F	F	M	M	M	N
BE	M	F	N	F	F	M	M	M	N
GR	M	F	F	F	N	M	M	M	M
ES	M	F	F	F	F	M	M	M	M
HU	M	F	F	F	F	M	M	N	M
SI	M	F	N	F	F	(N)	M	M	(M)
RO	M	N	F	F	F	N	M	M	M
SK	M	N	F	F	F	M	M	M	M

Note: due to small numbers, the army category is not included in this table.

There has been some debate about the appropriate measure of occupational segregation (see, for example, Siltanen, Jarman and Blackburn, 1995; Kalter, 2000). Here indices of dissimilarity are used and were calculated for ISCO 1-digit, 2-digit and 3-digit occupational groupings.[7] Table 8 indicates that the level of segregation is found to be higher when more detailed occupational groups are used; this reflects the fact that broader occupational groups often contain occupations with very different gender profiles. The three measures are significantly correlated with each other (r=0.7 between 1-digit and 2-digit measures and r=0.5 between 1-digit and 3-digit measures), indicating that segregation tends to be greater in certain countries, regardless of the measure used.

Table 8 Occupational segregation by gender in first significant job

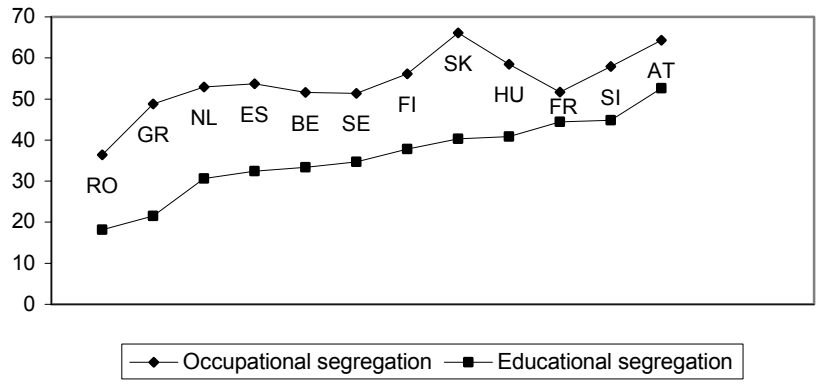
	1-digit	*2-digit*	*3-digit*
Austria	45.5	56.8	64.3
Netherlands	32.3	38.6	52.9
Sweden	30.8	40.9	51.4
Finland	35.6	51.2	56.1
France	37.3	47.5	51.7
Belgium	31.6	44.3	51.6
Greece	36.1	41.2	48.8
Spain	42.1	47.5	53.7
Hungary	37.7	49.0	58.5
Slovenia	34.9	42.3	57.9
Romania	36.4	n.a.	n.a.
Slovakia	37.6	55.4	66.1

Gender segregation is found to be highest in Austria[8], Hungary, Slovakia and France, and lowest in Sweden, Belgium and the Netherlands. It had been hypothesised that occupational segregation would be greatest in the countries with the highest levels of educational segregation by gender with young people being 'pre-sorted' into gender-typed occupations on the basis of their educational experiences (see Borghans and Groot, 1999). Figure 8 shows the measures of segregation for both occupation and education (in the latter case, combining segregation measures at upper secondary and tertiary levels). In the case of occupation, the measure based on the 3-digit ISCO classification is used; for Romania, the 1-digit measure is used because of the lack of information on more detailed occupational groupings. It is apparent that educational and occupational segregation are interrelated at the country level (with a correlation of r=+0.7) with Austria and Slovenia showing the highest levels of segregation and Romania and Greece showing the lowest levels of segregation. The location of the Netherlands is somewhat surprising given previous research on the strong levels of gender

[7] These were calculated by summing the absolute differences in the proportion of males and females in each occupational group and dividing the total by two.

[8] The data for Austria are not fully comparable with the other countries since they relate to current job. However, analysis does reveal Austria as an outlier in segregation terms.

Figure 8 Measures of educational and occupational segregation by country



segregation within the educational system (see Borghans and Groot, 1999; Smyth, 2001). It may be that the broad groupings of educational field available in the ad hoc module obscure some of the segregation happening at a more detailed level of aggregation.

The purpose of this paper is not to examine the 'matching' between educational field and occupational group (see Wolbers, 2002) but it is useful to explore the ways in which participation in a gendered educational track influences the type of occupation entered. The gender-typing of educational field (general, male-intensive, mixed and female-intensive) is significantly related to the gender-typing of first significant job[9] in all of the countries considered. For the purposes of this and subsequent analysis, those leaving from lower secondary education are assigned to general tracks because of the considerable cross-national variation in the existence of track differentiation at this level.

Table 9 presents a multinomial logistic regression equation predicting entry to predominantly male and predominantly female occupations relative to entry to mixed jobs. Young women are significantly less likely to enter predominantly male jobs and more likely to enter predominantly female jobs, even controlling for gender and educational field. Thus not all gender segregation is attributable to educational segregation with gender continuing to have a direct effect on the 'sorting' of young men and women into gendered jobs. Having a lower secondary education increases the chances of entering a male job and reduces the chances of entering a female job; this is likely to reflect the strongly male profile of manual jobs. Having a tertiary education increases the chances of entering a mixed occupation. Females with a tertiary education have reduced chances of entering female occupations.

Leavers from a male track are much more likely to enter a male track and leavers from a female track are much more likely to enter a female track. However, there is also a considerable amount of movement from mixed tracks into gender-typed occupations. This may be due to the fact that

[9] The measure of gender-typing of occupation is based on 1-digit ISCO classifications because of the possible influence of small sample sizes at the more detailed level of occupational aggregation.

occupational segregation is somewhat stronger than educational segregation (see Figure 8) so that there is more room for potential movement from mixed tracks into gender-typed jobs. There is no evidence that the effect of educational field differs for men and women; the exception is a greater tendency to enter male occupations among women from mixed tracks.

Table 9 Multinomial logit model of gender-typing of first significant job (contrasted against entry to mixed occupations)

	Male	Female
Intercept	1.087***	1.024***
Female	-0.614***	0.922***
(Base: male)		
***Educational level*:**		
Lower secondary	0.596***	-0.355***
Tertiary	-2.177***	-0.547***
(Base: upper secondary)		
***Gender*Educational level*:**		
Female*Lower sec.	0.420***	0.267
Female*Tertiary	0.106	-0.663***
Educational field:		
Male-dominated	1.264***	0.276***
Mixed	1.268***	1.244***
Female-dominated	0.083	1.023***
(Base: General)		
***Gender*Educational field*:**		
Female*Male-dominated course	0.251	-0.107
Female*Mixed course	0.494***	0.256
Female*Female-dominated course	0.130	-0.089
-2 Log likelihood	7108.598	

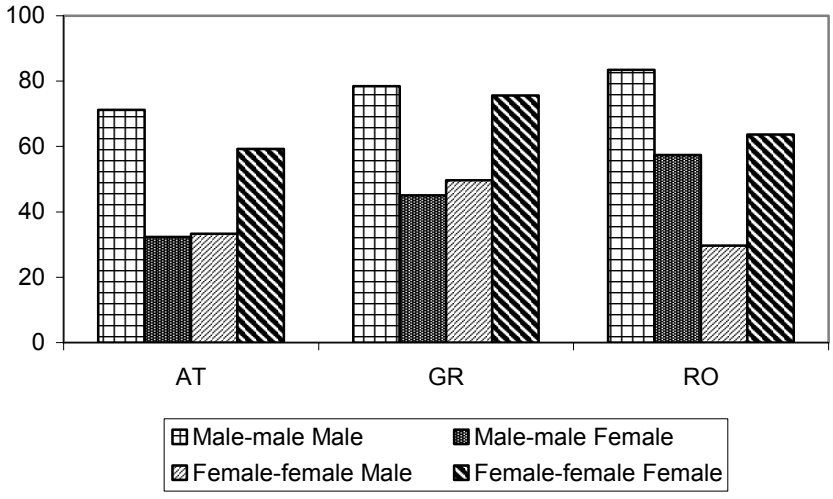
Note: *** p<.001, ** p<.01; country and country*gender interactions are controlled for (see Appendix Table A4).

It was hypothesised above that in track-differentiated systems, gender segregation in labour market outcomes will tend to be mediated by the type of course taken whereas direct gender effects on occupational allocation should be stronger in general than in track-differentiated systems. It can be quite difficult to interpret country and country-gender interaction coefficients in multinomial logit models (see Appendix Table A4). For the purposes of comparison, therefore, the predicted probabilities of leavers from male-dominated courses entering male-dominated occupations (termed 'male-male' in Figure 9) and of leavers from female-dominated courses entering female-dominated occupations (termed 'female-female' in Figure 9) were calculated for Austria (a country with a high level of educational and occupational segregation by gender), Greece and Romania (countries with low levels of educational and occupational segregation by gender). It is apparent that in Austria there are strong gender differences in occupational destination, even among those who have taken similar educational tracks. Of those who have taken male-dominated courses, all else being equal, over seventy per cent of males but less than a third of females enter male-dominated occupations. Of those who have taken female-dominated courses in Austria, almost sixty per cent of young women enter female-dominated

jobs but this is the case for only a third of young men. Thus, higher levels of occupational segregation in the Austrian youth labour market reflect not only marked gender differences in the type of courses taken but marked differences in occupational outcomes for women and men taking 'male' (or 'female') tracks.

Gender differences in occupational outcomes are also apparent among those taking male and female tracks in the lower segregation countries of Greece and Romania. However, in some instances gender differentiation is less marked than in the Austrian situation; for example, a relatively high proportion (57%) of young women taking male courses in Romania subsequently enter male-dominated occupations. In overall terms, occupational segregation in the youth labour market tends to reflect both 'presorting' into different educational fields and 'post-sorting' into different occupational destinations among those in the same field of education. The degree to which this takes place is likely to reflect the complexity of institutional, social and economic factors operating at the country level.

Figure 9 Predicted probabilities of entering male and female-dominated occupations for selected countries (upper secondary leavers)



7 Occupational status and gender differentiation

ISEI occupational status scores were assigned to occupational groups. Figure 10 indicates varying patterns of gender differences in occupational status across countries. In all countries except the Netherlands, women have higher average status scores than men. This may be related to the greater concentration of women in non-manual jobs which tend to have higher prestige scores than manual occupations. It should be noted that higher occupational status scores do not necessarily translate into higher pay and mobility opportunities for women (see Smyth, 2001). Given that women tend to have higher educational attainment levels than men (see above), gender differences in educational level and field may also account for variation in occupational status.

Figure 10 Occupational status of first significant job by gender and country

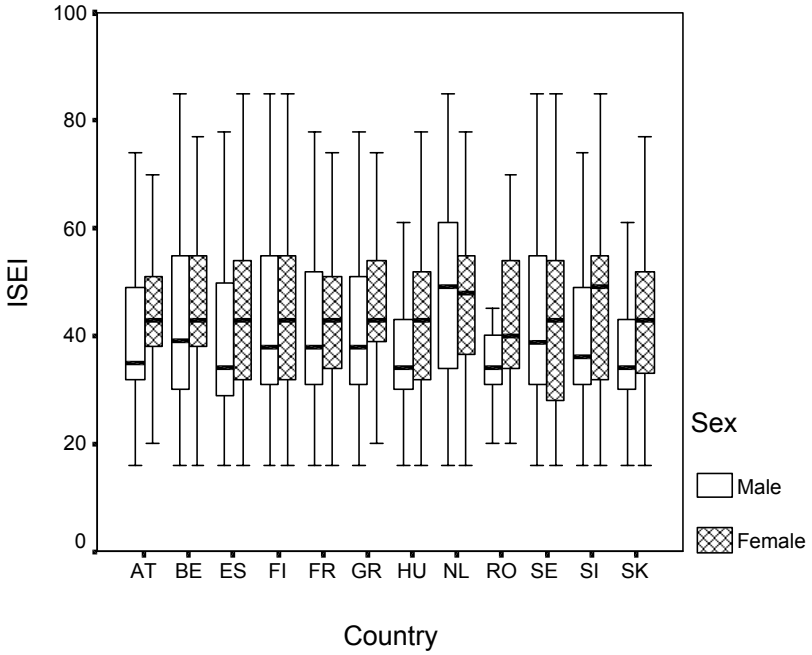


Table 10 presents a model predicting the occupational status of the first significant job. Young women are found to enter higher status occupations, controlling for their educational level (Model 2). Lower secondary leavers enter lower status occupations, and tertiary leavers enter higher status occupations, than those with upper secondary education. However, the status returns to tertiary education are significantly lower for women than for men. Educational field is strongly predictive of occupational status (see Model 3). Those with agriculture, service and engineering backgrounds enter the lowest status occupations with the highest status levels found among those with science backgrounds. However, the effect of educational field is found to vary by gender (see Figure 11). In general, women achieve higher occupational status than men who had studied the same type of

Figure 11 Predicted returns to various fields of education (controlling for level)

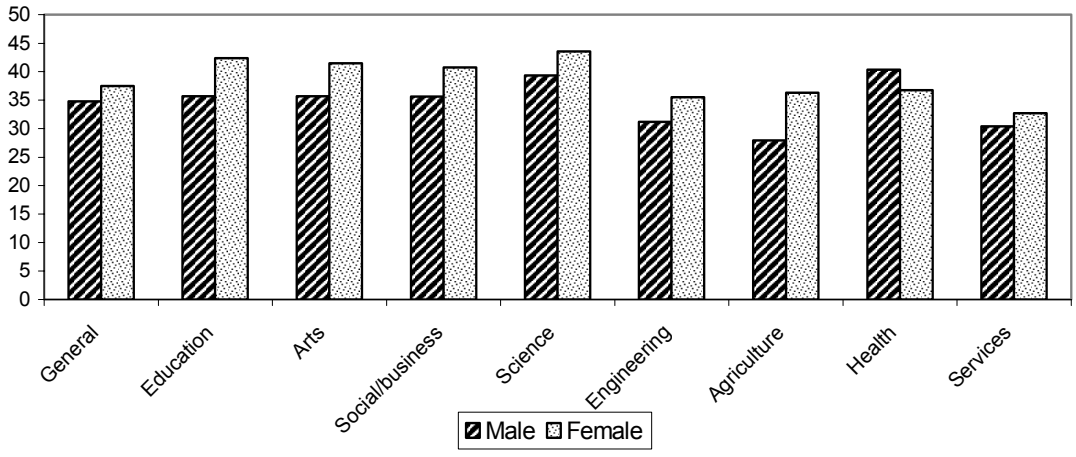
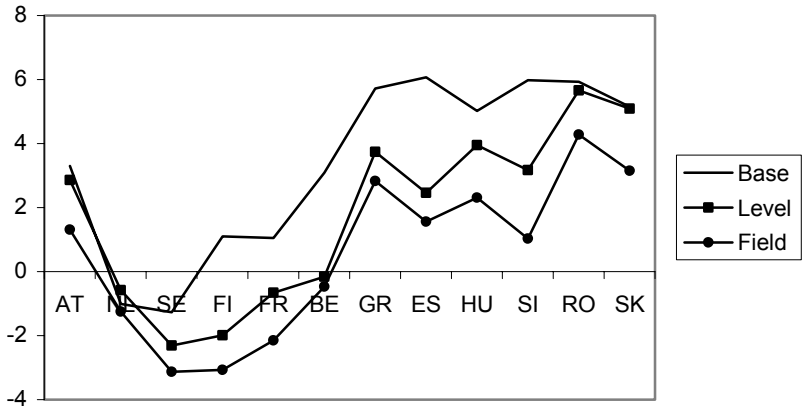


Table 10 Linear regression model of occupational status of first job

	(1)	(2)	(3)	(4)
Intercept	39.111	34.084	35.214	34.796
Female	6.074***	2.461***	1.563***	2.665***
(Base: male)				
Educational level:				
Lower secondary		-5.445***	-6.301***	-6.306***
Tertiary		17.887***	16.332***	18.249***
(Base: upper secondary)				
Gender*Educational level:				
Female*Lower sec.				-0.114
Female*Tertiary				-4.045***
Educational field:				
Education			3.192***	0.924
Arts			2.483***	0.889
Social Science			2.230***	0.834
Science			5.356***	4.501**
Engineering			-3.033***	-3.595***
Agriculture			-4.825***	-6.832***
Health			-0.081	5.532***
Services			-4.609***	-4.359***
(Base: General)				
Gender*Educational field:				
Female*Education				4.036***
Female*Arts				3.123***
Female*Social science				2.436***
Female*Science				1.638**
Female*Engineering				1.609***
Female*Agriculture				5.683***
Female*Health				-6.257***
Female*Services				-0.439
Adjusted R Square	0.029	0.361	0.388	0.394

Note: *** p<.001, ** p<.01; country and country*gender interactions are controlled for (see Appendix Table A5).

Figure 12 Country variation in gender differences in occupational status



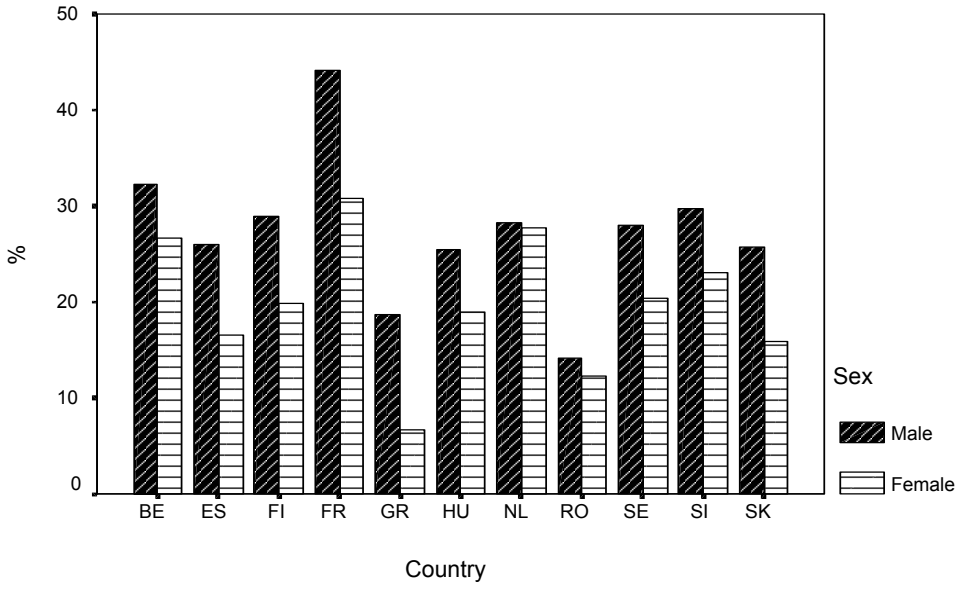
course, with the exception of health/welfare courses. For men, the status returns are highest for health and science courses and lowest for engineering and agriculture courses. For women, the status returns are highest for science, education, arts and social science/business courses.

A good deal of young women's advantage in occupational status terms is due to their higher educational levels and the type of courses they study; in other words, the gap between male and female scores is reduced when educational level and field of education are taken into account (see Figure 12). The gender gap in occupational status levels is found to vary by country with the greatest advantage to young women found in the Mediterranean and Eastern European countries.

8 Occupational upgrading

Analyses were carried out to determine whether respondents had experienced an upgrading in occupational status levels between their first significant and current jobs. Young people who were in a higher status occupation in their current job than in their first significant job were considered as having experienced an occupational upgrading, regardless of the 'size' of this shift. Figure 13 refers only to those who changed jobs between their first significant job and their job at the time of the interview. In all of the countries examined, a considerable proportion of young people who had changed jobs had experienced occupational upgrading, although there is some variation by country in the overall levels. With the exception of the Netherlands, women are less likely to have experienced occupational upgrading than men; this difference is statistically significant in Spain, Finland, France, Greece, Hungary and Slovakia.

Figure 13 Occupational upgrading by gender and country



The factors influencing occupational upgrading are explored in Table 11. Even controlling for educational level and field, young women are less likely to achieve occupational upgrading than their male counterparts. Tertiary education leavers have a greater chance of upgrading while lower secondary leavers have the lowest chances of being upgraded(see Table 11). However, tertiary education does not translate into occupational upgrading to the same extent for women as for men. The chances of upgrading are lowest for those who had taken education, health, agriculture and services courses.

Table 11 Logistic regression model predicting occupational upgrading

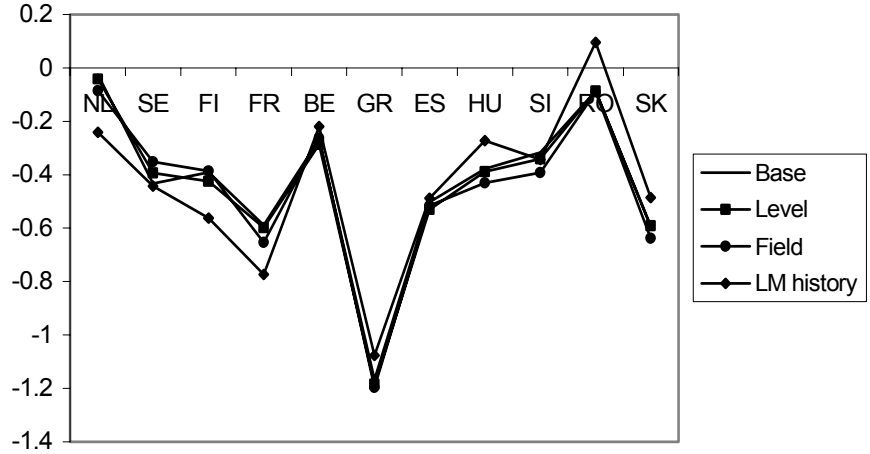
	(1)	(2)	(3)	(4)	(5)
Intercept	-1.322***	-1.400***	-1.197***	0.806***	1.094***
Female	-0.502***	-0.530***	-0.516***	-0.488***	-1.027***
(Base: male)					
Time since leaving education (months)	0.003***	0.003***	0.004***	0.004***	0.004***
***Educational level*:**					
Lower secondary		-0.023	-0.264**	-0.691***	-0.692***
Tertiary		0.188***	0.231***	1.090***	1.339***
(Base: upper sec.)					
***Gender*Educational level*:**					
Female*Lower sec.					-0.099
Female*Tertiary					-0.461***
***Educational field*:**					
Education			-1.037***	-0.641***	-1.155**
Arts			-0.091	0.065	-0.435
Social Science			-0.158	0.067	-0.153
Science			-0.056	0.397**	0.312
Engineering			-0.339***	-0.489***	-0.584***
Agriculture			-0.317*	-0.624***	-0.753***
Health			-0.651***	-0.768***	-0.614
Services			-0.341***	-0.600***	-0.773***
(Base: General)					
Gender*Educational field:					
Female*Education					0.747
Female*Arts					0.830***
Female*Social science					0.355*
Female*Science					0.213
Female*Engineering					0.114
Female*Agriculture					0.188
Female*Health					-0.081
Female*Services					0.312
***Labour market history*:**					
Status of first job				-0.064***	-0.074***
Female*Status of first job				1.102***	0.017***
Upgraded educational level					1.355***
(Base: did not upgrade)					
Female*Upgraded educational level					-0.423
-2 log likelihood	16286.646	16256.461	15857.114	14746.93	14700.034

Note: *** p<.001, ** p<.01; country and country*gender interactions are controlled for (see Appendix Table A6).

Experience of occupational upgrading is found to be influenced by young people's history within the labour market (see Model 4, Table 11). Those who entered a first job with higher status levels are less likely to be upgraded subsequently, perhaps because of a ceiling effect in higher status occupations. In addition, upgrading one's educational level increases the chances of occupational upgrading. All else being equal, women remain less likely to achieve upgrading than men.

There is some cross-national variation in gender differences in occupational upgrading (see Figure 14). The biggest gender differences in occupational upgrading are apparent in the Mediterranean countries, France and Slovakia. In contrast, there are only minimal gender differences in the Netherlands, Romania and, to a lesser extent, Belgium.

Figure 14 Country variation in gender differences in occupational upgrading



9 Summary and conclusions

This paper has considered gender differentiation in early labour market outcomes across a range of European countries. As Table 12 illustrates, there are certain commonalities in gender differences across European countries. Women tend to have lower labour force participation rates than their male counterparts and, where they have remained in the labour market, they are less likely to have experienced occupational upgrading. However, there is also cross-national variation in the nature of gender differentiation; this variation is particularly evident in relation to unemployment rates with higher rates among women than men in many central European and Mediterranean countries and lower rates among women than men in many Eastern European and Scandinavian countries.

In spite of the fact that the educational attainment of women has now surpassed that of men in many countries, differences persist in the type of educational courses taken by young women and men. Countries differ in the extent of educational segregation by gender but certain regularities are evident,

with health/welfare, education and arts courses dominated by women and engineering courses dominated by men. It had been hypothesised that, at the country level, educational segregation would be positively associated with occupational segregation by gender. It is, indeed, apparent that countries with higher rates of gender segregation within the educational system tend to have higher rates of gender segregation within the labour market. Thus, occupational segregation reflects, at least in part, the way in which the different kinds of courses taken by young women and men channel them into gender-typed occupations. However, it is also apparent that marked gender differences persist among those who have taken similar courses across all countries, both those characterised by differentiated, gender-tracked systems and those characterised by more general systems. Thus, labour market segregation also reflects 'post-sorting', whereby women and men with the same kinds of qualifications enter quite different occupational arenas.

Table 12 Summary of country variation in gender differences in early labour market outcomes (controlling for educational level)

	Educational segregation (outlier)	Occupational segregation (outlier)	Labour market integration	Labour force participation	Unemploy-ment	Occup. status	Occup. upgrading
Austria	+	+	-	-	+	+	n.a.
Netherlands			0	(-)	+	(-)	(-)
Sweden			(+)	(-)	-	-	-
Finland			(-)	-	(-)	-	-
France	+		-	-	+	-	-
Belgium			-	-	+	(-)	-
Greece	-	-	-	-	+	+	-
Spain			-	-	+	+	-
Hungary			-	-	-	+	-
Slovenia	+		0	(+)	0	+	-
Romania	-	-	0	-	-	+	(-)
Slovakia		+	(+)	-	-	+	-

+ higher among women; (+) slightly higher among women; 0 no gender difference.

As Table 12 illustrates, there is no necessary relationship among the labour market outcomes considered. For instance, women's unemployment is higher than men's in both Austria, a more segregated youth labour market, and Greece, a less segregated youth labour market. Thus, there is no evidence that greater segregation within the youth labour market either hinders or facilitates the integration of young women into stable employment.

To date, much research on gender differentiation and segregation within the labour market has focused on adult workers. This paper indicates the need to investigate the way in which gender differentiation emerges early in the labour market career and the impact of early employment experiences on subsequent career trajectories.

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11 Appendix Tables

Table A1 Country effects on obtaining a first significant job

	Base model	Educational level	Educational field	Family status	Education* gender	Family* gender
Country:						
Austria	0.201***	0.087	0.011	0.182**	0.211***	0.201**
Netherlands	0.769***	0.637***	0.586***	0.684***	0.733***	0.765***
Sweden	1.134***	0.828***	0.770***	0.841***	0.939***	1.013***
Finland	-0.014	-0.240***	-0.253***	-0.134	-0.102	-0.027
France	0.611***	0.250***	0.173***	0.241***	0.286***	0.270***
Belgium	1.081***	0.917***	0.947***	1.023***	1.059***	1.060***
Greece	0.274***	0.110	0.187***	0.137**	0.182***	0.198***
Hungary	0.618***	0.469***	0.379***	0.485***	0.486***	0.452***
Slovenia	0.628***	0.425***	0.268**	0.323***	0.341***	0.343***
Romania	-1.165***	-1.238***	-1.286***	-1.219***	-1.199***	-1.255***
Slovakia	-0.420***	-0.701***	-0.805***	-0.389	-0.300	-0.299
Country gender interactions:*						
AT*female	0.252***	0.522***	0.531***	0.529***	0.494***	0.540***
NL*female	0.481***	0.739***	0.732***	0.650***	0.594***	0.546***
SE*female	0.471***	0.763***	0.775***	0.762***	0.630***	0.508***
FI*female	0.502***	0.666***	0.661***	0.641***	0.602***	0.475***
FR*female	0.182***	0.370***	0.390***	0.416***	0.341***	0.405***
BE*female	0.003	0.073	0.024	0.043	-0.003	0.029
GR*female	-0.247***	-0.112	-0.085	-0.072	-0.139	-0.157
HU*female	0.288***	0.522***	0.552***	0.587***	0.614***	0.706***
SI*female	0.555***	0.676***	0.749***	0.802***	0.786***	0.829***
RO*female	0.427***	0.716***	0.720***	0.759***	0.772***	0.890***
SK*female	0.526***	0.814***	0.830***	-0.160	-0.282	-0.295

Note: corresponds to Table 4 above.

Table A2 Country effects on labour force participation

	Base model	Educational level	Educational field	Family status	Family*gender
Country:					
Austria	-0.713***	-0.930***	-1.020***	-0.511***	-0.314**
Netherlands	-0.175	-0.344	-0.386	-0.005	0.298
Sweden	-1.088***	-1.480***	-1.514***	-1.365***	-0.884***
Finland	-0.861***	-1.140***	-1.141***	-0.801***	-0.200
France	-0.050	-0.453***	-0.532***	-0.368***	-0.411***
Belgium	0.219	-0.043	0.059	0.270	0.413
Greece	-0.372***	-0.599***	-0.502***	-0.713***	-0.641***
Hungary	-1.140***	-1.389***	-1.445***	-1.249***	-1.371***
Slovenia	-0.946***	-1.260***	-1.392***	-1.308***	-1.347***
Romania	-0.906***	-0.976***	-0.989***	-0.811***	-1.023***
Slovakia	0.079	-0.280	-0.367**	-4.116***	-3.458***
*Country*gender interactions:*					
AT*female	-0.001	0.224	0.236	0.148	-0.109
NL*female	0.412	0.633**	0.643**	0.437	0.018
SE*female	0.501***	0.684***	0.682***	0.630***	-0.133
FI*female	-0.007	0.079	0.091	-0.011	-0.938***
FR*female	-0.341***	-0.224	-0.249**	-0.197	-0.077
BE*female	-0.396	-0.362	-0.463	-0.453	-0.597**
GR*female	-0.305**	-0.216	-0.199	-0.145	-0.247
HU*female	-0.433***	-0.277**	-0.291***	-0.242**	-0.066
SI*female	0.940***	1.050***	1.034***	1.249***	1.350***
RO*female	-0.155	0.052	0.032	0.093	0.433***
SK*female	-1.184***	-0.968***	-0.973***	0.947	-0.220

Note: corresponds to Table 5 above.

Table A3 Country effects on current unemployment

	Base model	Educational level	Educational field	Education*gender
Country:				
Austria	-1.769***	-1.795***	-1.740***	-1.723***
Netherlands	-2.276***	-2.259***	-2.251***	-2.265***
Sweden	-0.958***	-0.814***	-0.801***	-0.839***
Finland	-0.088	0.011	0.036	0.056
France	-0.192***	0.037	0.073	0.073
Belgium	-0.591***	-0.485***	-0.472***	-0.478***
Greece	0.322***	0.386***	0.371***	0.366***
Hungary	-0.250***	-0.201**	-0.178**	-0.137
Slovenia	-0.473***	-0.411***	-0.361**	-0.333**
Romania	1.016***	0.062	0.061	0.060
Slovakia	-0.473***	1.095***	1.123***	1.188***
Country gender interactions:*				
AT*female	-0.251	-0.426	-0.454	-0.483
NL*female	0.256	0.067	0.076	0.087
SE*female	-0.777***	-0.976***	-0.975***	-0.940***
FI*female	-0.699***	-0.803***	-0.815***	-0.867***
FR*female	-0.304***	-0.429***	-0.483***	-0.476***
BE*female	-0.331***	-0.360	-0.352	-0.357
GR*female	-0.003	-0.092	-0.106	-0.114
HU*female	-0.889***	-1.040***	-1.053***	-1.159***
SI*female	-0.600***	-0.655***	-0.730***	-0.807***
RO*female	-0.875***	-1.062***	-1.068***	-1.121***
SK*female	-0.771***	-0.974***	-0.993***	-1.164***

Note: corresponds to Table 6 above.

Table A4 Country effects on gender-typing of first significant job

	Male	Female
Country:		
Austria	-1.034***	-1.977***
Netherlands	-1.509***	-2.522***
Sweden	-1.511***	-2.195***
Finland	-0.685***	-1.059***
France	-1.125***	-2.419***
Belgium	-0.613***	-0.779***
Greece	-0.087	-0.683***
Spain	5.850***	5.123***
Slovenia	-0.599***	-0.882***
Romania	-0.185	-1.608***
Slovakia	0.439***	-0.219
Country gender interactions:*		
AT*female	-1.087***	-0.314
NL*female	-1.370***	-0.121
SE*female	-0.820***	-0.024
FI*female	-0.846***	-0.226
FR*female	-0.677***	0.338**
BE*female	-0.353	-0.008
GR*female	-0.933***	-0.528***
ES*female	-0.613	-0.147
SI*female	-0.235	-0.418
RO*female	-0.552***	-0.040
SK*female	-0.440	-0.478**

Note: corresponds to Table 9 above.

Table A5 Country effects on occupational status

	Base model	Educational level	Educational field	Education* gender
Country:				
Austria	2.569***	6.085***	6.448***	7.172***
Netherlands	8.811***	7.810***	7.715***	7.793***
Sweden	5.274***	4.831***	4.327***	4.588***
Finland	4.000***	4.177***	5.057***	5.217***
France	3.601***	0.645**	0.787***	1.050***
Belgium	4.595***	3.655***	3.386***	3.429***
Greece	2.516***	3.897***	3.465***	3.615***
Hungary	0.039	3.274***	4.322***	4.938***
Slovenia	2.544***	4.703***	5.991***	6.572***
Romania	-1.101***	1.753***	2.110***	2.605***
Slovakia	-0.950	2.064***	3.670***	4.461***
Country gender interactions:*				
AT*female	-2.774***	0.399	-0.248	-1.925***
NL*female	-7.086***	-3.045***	-2.811***	-3.317***
SE*female	-7.346***	-4.775***	-4.692***	-5.409***
FI*female	-4.973***	-4.453***	-4.634***	-4.900***
FR*female	-5.025***	-3.123***	-3.711***	-4.275***
BE*female	-2.979***	-2.617***	-2.037***	-2.132***
GR*female	-0.357	1.278**	1.267**	0.581
HU*female	-1.049	1.492**	0.744	-0.833
SI*female	-0.089	0.714	-0.538	-1.950**
RO*female	-0.148	3.203***	2.715***	1.152
SK*female	-0.925	2.625***	1.590**	-0.467

Note: corresponds to Table 10 above.

Table A6 Country effects on occupational upgrading

	Base model	Educational level	Educational field	LM history	LM history* gender
Country:					
Netherlands	0.289	0.308	0.398	0.934**	1.102**
Sweden	0.269	0.242	0.291	0.434	0.513**
Finland	0.199	0.217	0.244	0.551***	0.623***
France	0.869***	0.852***	0.884***	1.007***	1.118***
Belgium	0.343**	0.329**	0.329**	0.562***	0.623***
Greece	-0.369	-0.350	-0.356	-0.046	0.023
Hungary	-0.008	0.033	0.110	0.362***	0.460***
Slovenia	0.210	0.239	0.331	0.740***	0.884***
Romania	-0.809***	-0.778***	-0.756***	-0.589**	-0.510**
Slovakia	0.005	0.041	0.138	0.358**	0.464***
Country gender interactions:*					
NL*female					
SE*female	0.477	0.489	0.431	0.247	-0.010
FI*female	0.070	0.137	0.165	0.045	-0.110
FR*female	0.111	0.106	0.130	-0.075	-0.188
BE*female	-0.086	-0.069	-0.137	-0.285	-0.479***
GR*female	0.235	0.244	0.254	0.269	0.142
HU*female	-0.665	-0.654	-0.680	-0.588	-0.769
SI*female	0.124	0.141	0.085	0.216	0.015
RO*female	0.186	0.190	0.124	0.145	-0.130
SK*female	0.416	0.444	0.426	0.584	0.384
	-0.093	-0.061	-0.122	0.003	-0.216

Note: corresponds to Table 11 above.

Job Mismatches and their Labour Market Effects among School-leavers in Europe

Maarten Wolbers

Abstract

In this paper, we investigate the determinants of job mismatches with respect to field of education among school-leavers in Europe. In addition, the effects of having a job mismatch on the labour market position of school-leavers are examined. Special attention is paid to cross-country variation in this respect. The data that are used come from the EU LFS 2000 ad hoc module on school-to-work transitions. The results of the empirical analysis show that several individual, job, and structural characteristics affect the likelihood of having a job mismatch. Furthermore, the incidence of job mismatches differs between European countries: in countries where the share of upper secondary education students in school-based vocational education is high, the incidence of job mismatches among school-leavers is higher than in countries where this share is low. With respect to the labour market effects of job mismatches, the most important finding is that school-leavers with a non matching job achieve less occupational status than those with a matching one. This negative effect of job mismatches is smaller in countries where the share of school-based, respectively apprenticeship-type vocational education is higher. Moreover, the analysis reveals that school-leavers with a job mismatch use adjustment strategies to improve fit. A first strategy refers to job search activities: school-leavers with a non matching job more frequently look for another job than school-leavers with a matching job. In countries where the share of school-based vocational education is high, the effect of having a job mismatch on the likelihood of looking for another job is smaller than in countries where this share is low. A second adjustment strategy concerns training participation: on average, there is a negative effect of having a job mismatch on the probability of participating in continuous vocational training. However, in countries where the share of school-based, respectively apprenticeship-type vocational education is low, the impact of having a job mismatch on training participation is positive.

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1 Introduction

In modern societies, education is probably the most important characteristic in the allocation and selection process on the labour market. Labour market theories differ, however, about the mechanisms by which educated persons are allocated to jobs. According to human capital theory (Becker, 1964) the skills acquired in education represent human capital. Investments in human capital are useful, as long as they lead to higher productivity on the labour market. Employers value labour productivity by offering the highest wages to those individuals who have obtained most human capital. Job competition theory (Thurow, 1975), on the other hand, suggests that wages are determined primarily by job characteristics and not by individual characteristics (i.e. the productivity of workers). Employers seek to employ the best available candidate for their vacancy, at the least training costs. They use educational qualifications as a signal for trainability (Spence, 1974). For that purpose, job seekers are ranked in an imaginary labour queue according to their expected training costs, and employers match this queue of applicants to a queue of vacant jobs that are classified on the basis of their level (Thurow, 1975; Sørensen and Kalleberg, 1981). The best positions go to the individuals with the lowest training costs (i.e. the highest qualifications), and education is regarded as a positional good (Hirsch, 1977; Ultee, 1980).

A combination of both theories is job matching theory (Sattinger, 1993) which states that the quality of a job match, i.e. the degree of fit between required and acquired skills, determines the productivity level and earnings in a job. If an employee works in a non matching job, his acquired skills are underutilized. This imposes a limitation on his labour productivity, resulting in lower wages. The allocation of workers over jobs is optimal if every worker is matched to a job in which he performs relatively the best compared to all other workers. The incidence of job mismatches, then, is explained by differences in the shares of vacant jobs of a given level and available workers with adequate educational qualifications.

Most of the research addressing the topic of job mismatches refers to overeducation. (see among others Borghans and De Grip, 2000; Clogg and Shockey, 1984; Freeman, 1976; Groot and Maasen van den Brink, 2000; Halaby, 1994; Hartog and Oosterbeek, 1988; Smith, 1986; Wolbers, De Graaf and Ultee, 2001). Workers are overeducated if the level of education they have acquired exceeds the level of education required to perform their job adequately. Far less attention is paid to job mismatches referring to the field of education obtained (exceptions are Witte and Kalleberg, 1995; Solga and Konietzka, 1999; Van de Werfhorst, 2001). Moreover, the minor attention to job mismatches with regard to field of education is based on empirical studies that consider only one single country. This paper tries to fill in this gap by analysing job mismatches with regard to field of education from a cross-country perspective. We investigate to what extent school-leavers in Europe are working in jobs that do not match their field of education attended in initial education. First, the determinants of job mismatches are studied. Next, the effects of job mismatches on the labour market position of school-leavers are examined. The data that are used originate from the EU LFS 2000 ad hoc module on school-to-work transitions. In this dataset the virtues of large-scale Labour Force Surveys (LFS) with

special topical information on the transition from school to work are combined. The analysis covers thirteen European countries for which reliable data are available.

The paper is structured as follows. In the second section we derive hypotheses on the determinants of job mismatches among school-leavers in Europe. In addition, we formulate hypotheses on the consequences of job mismatches for the labour market position of school-leavers. Special attention is paid to cross-country differences in this respect. The third section describes the data and variables that are used in analysing job mismatches. The fourth section presents the determinants of job mismatches among school-leavers in Europe. The fifth section looks at the consequences of job mismatches for three labour market outcomes of school-leavers: occupational status attainment, job search activities, and participation in continuous vocational training. The sixth section discusses the main conclusions of the paper.

2 Theoretical background

2.1 Determinants of job mismatches

The transition from school to work is often regarded as a 'rite of passage' in which young people are introduced to the world of labour. This transition process takes place in stages and it is characterized as a turbulent and uncertain period (OECD, 1998; Kerckhoff, 2000). First of all, school-leavers have to compete for the available jobs with those who have already gained a position on the labour market. Their lack of work experience forces them to face unemployment quite often. Secondly, a relatively large number of school-leavers ends up in jobs that do not match their educational qualifications very well. These job mismatches are the result of incomplete information on the abilities of school-leavers and the characteristics of jobs offered by employers. Logan (1996) refers to this as a two-sided matching game. By changing jobs or (re-)training, school-leavers and employers attempt to achieve a better job match. Job mismatches then can be considered as a temporary position that allows a transition to a better one (Sicherman, 1991).

With regard to the determinants of job mismatches it is obvious that education plays a key role. Three aspects of educational qualifications are important here. First of all, the amount of specific human capital matters. It is assumed that school-leavers from vocational education have acquired more specific human capital needed to perform adequately on the work floor than those who have completed general education only and, therefore, we hypothesize that the former group of school-leavers is less likely to be employed in a non matching job. The provision of vocational education (school-based versus workplace-based vocational education, or a combination of both in the form of apprenticeship training) may have additional effects on the likelihood of preventing a job mismatch. It is assumed that workplace-based and – to a somewhat lesser extent – apprenticeship-type vocational education decreases the selection and allocation costs for employers: it offers them a opportunity to teach students skills to the firm’s specific needs and to screen them during their training. From the

point of view of the school-leavers, workplace-based and apprenticeship-type vocational education offers them an advantage in the matching process as well. They have already a (temporary) position in a firm and can thus more easily get access to a position that fits their training than leavers from school-based vocational education.

Secondly, the extent to which school-leavers from vocational education are able to find a job that matches their training experiences differs between vocational programmes. Here the relative degree to which the curriculum of the educational programme provides the required knowledge and skills matters. It is expected that the more a study specifically prepares students for a few particular jobs, the closer the fit between education and employment. In vocational programmes that are mainly occupation-specific – irrespective of how these programmes are provided by the education system –, school-leavers have specific skills, which prepare them for a few, particular jobs. Good examples are the fields education and health/welfare, where a close link exists between the field of education left and the occupation found. Both fields of education prepare for a small number of professions such as teacher or medical doctor; occupations that are accessible only with the right certificate.

Thirdly, the level of education attained by school-leavers determines the likelihood of being employed in a non matching job. In a situation of overeducation, the oversupply of highly educated school-leavers may lead to a process of bumping down as these higher educated start competing with lower educated school-leavers (Borghans and De Grip, 2000). As a result, higher educated school-leavers find work in a related field, but at a lower job level. For lower educated school-leavers, however, this strategy is less useful, since their opportunities to switch to an even lower level job are restricted, simply due to the fewer alternatives that exist for them. Therefore, we expect that the level of education attained by school-leavers is negatively associated with the likelihood of being in non matching job.

In addition to educational qualifications, other individual characteristics affect the likelihood of having a job mismatch. Gender differences on the labour market are found along a large number of dimensions. In general, women have less favourable prospects on the labour market than men (Blossfeld and Hakim, 1997). Their unemployment risk is larger, their opportunities for career mobility are smaller, their training participation is lower, their work life is more often interrupted by family obligations, and so forth. It is likely that these gender differences also play a role with regard to job mismatches. Since women's employment chances are lower, they may be more easily inclined to accept a job outside their own occupational domain. Also, since their mobility rates are lower, their probability of moving from a non matching job to a better fitting one is smaller. We suppose therefore that women are more often employed in a job that does not match their field of education than men.

Furthermore, we hypothesize that, other things being equal, older workers are more likely to be in a in job that does not match the field of education attended than younger workers. Witte and Kalleberg (1995) mention two arguments to expect an increasing likelihood of having a job mismatch with age. First of all, the skills obtained in initial education may become obsolete, mainly due to changing technology (Miles and Ducatel, 1994). Secondly, the relative value of vocational qualifications

attended in initial education in the total amount of human capital acquired decreases over the life-course, since other forms of human capital (work experience, on-the-job-training) accumulate with age.

Concerning job tenure, we expect to find a negative relationship with the likelihood of having a job mismatch. The longer a school-leaver is employed in the same job, the higher the probability that deficiencies in initial education in the meantime are compensated for by work experience and/or additional training. However, the causal order may also be the other way around: if a school-leaver has a job that does not match with the field of education, then there is a strong incentive to change to another job that fits better.

Besides job tenure, the nature of the employment contract has an effect on the likelihood of having a job mismatch. In general, the labour market opportunities for workers in a temporary and/or part-time job are worse than for those in a permanent and/or full-time position. An important reason for the less favourable labour market position of employees with a temporary and/or part-time contract is that it is less profitable for employers to invest in such wokers, because of the shorter pay-off period (Psacharopoulos, 1987). In the case of part-time employment, the returns to the investment must be recovered in a smaller number of hours. In the case of temporary employment employers are more reluctant to invest, because of the greater risk of employees leaving, resulting in a lower expected pay-off period. It is assumed that these investment arguments of employers also hold with respect to job mismatches – just as is the case with other labour market opportunities. In addition to this, temporary and/or part-time employment often leads to a loss of productive skills and a lack of relevant work experience. Hence, it is possible that job mismatches among temporary and/or part-time workers are used as a compensation for that (Groot and Maassen van den Brink, 1996). Based on these arguments, we presume that school-leavers with a temporary and/or part-time contract have more often a job mismatch than school-leavers with a permanent and/or full-time contract.

Apart from individual and job characteristics, various labour market structures matter. First of all, fluctuations in the business cycle are expected to have an impact on the likelihood of being employed in a non matching job. It is assumed that school-leavers who enter the labour market during an economic recession, suffer disadvantage with respect to the chance of finding a job that fits with the field of education attended. High unemployment makes that school-leavers adjust their goals and, therefore, more easily switch to jobs outside their field of education, instead of carry on searching for a job which is better suited to the skills acquired through the field of education.

Another kind of labour market structure refers to the organization in which a school-leaver is working. With respect to the effect of firm size we assume that the likelihood of having a job mismatch decreases with firm size. Main argument for this hypothesis is that larger firms can provide more opportunities for individuals to find a job that matches their field of education. Moreover, larger firms invest considerably more in the training of their employees than smaller ones (OECD, 1991) so that initial skill deficiencies can easily be compensated for in the meantime.

We also expect that the incidence of job mismatches differs between the private and public sector. The argument for this hypothesis is rather simple. Since it is assumed that school-leavers from an educational programme in education and health/welfare are less often having a job mismatch, and because the public sector comprises all educational and health care organizations, our expectation is that the incidence of job mismatches regarding field of education is lower in the public sector than in the private sector. With respect to overeducation, similar empirical evidence is found in Van der Meer and Glebbeek (2001).

Last but not least, differences between countries are expected with respect to job mismatches among school-leavers. Cross-national variation with regard to institutional arrangements in education and training systems affect the integration process of young people into the labour market (Gangl, forthcoming; Van der Velden and Wolbers, forthcoming). Countries differ in the extent to which there is an institutional link between the education and training system on the one hand and the employment system on the other (Allmendinger, 1989; Hannan, Raffe, and Smyth 1997; Kerckhoff, 1995; Müller and Shavit 1998). Basically, this debate refers to the extent to which education systems differentiate between general and vocational education. Some countries offer mainly general education. In such countries, education is weakly related to the workplace and vocational training is primarily obtained on-the-job. In other countries, occupation-specific skills are taught in the education and training system. Here, the link between the education and employment system is much closer. The institutional structure of vocational education, however, may differ between these countries. In some countries, the teaching of vocational skills is shared between vocational schools and the workplace, such as with the apprenticeship-type vocational education in Germany ('dual system'). In other countries, by contrast, the provision of vocational skills is mainly school-based. It is supposed that in countries with a strong orientation towards vocational education, the association between educational qualifications and labour market outcomes is more tightened, and subsequently, the incidence of job mismatches is lower. This leads to the hypothesis that the more vocational oriented the education system is in a country, the less likely it is that within this country school-leavers are employed in a non matching job.

2.2 Labour market effects of job mismatches

In the literature, job mismatches are reported to have serious effects on a number of labour market outcomes. Most of the economic research has been developed regarding the effect of overeducation on wages (see Hartog, 2000). The empirical results suggest that individuals working in jobs for which a lower level of education is required than actually obtained (i.e. overeducated persons) earn less than individuals with adequate employment. Concerning job mismatches with regard to field of education there are wage effects as well: individuals working in their own field of education have higher wages than those working outside their field of education (Van de Werfhorst, 2001). Both findings are in line with the earlier mentioned job matching theory (Sattinger, 1993). In most social stratification research, however, labour market outcomes are assessed by measuring occupational rewards in terms of social status or prestige instead of earnings. The division of labour is the kernel of social inequality and

occupation, therefore, is the main dimension of social stratification. In this paper we adopt this sociological approach by looking at occupational status attainment.[1] We hypothesize that having a job mismatch coincides with lower occupational returns on the labour market.

Other labour market effects of job mismatches in particular deal with adjustment strategies. In fact, two adjustment strategies are possible for school-leavers who have a job mismatch. A first strategy to improve fit, is looking for another job. Job search theory indicates that school-leavers will continue to change jobs until an optimal match has been achieved (Jovanovic, 1979; Tuma, 1985). For that reason, it is expected that school-leavers with a non matching job are more often looking for another job than those with a matching one. The reasons for this job search are probably diverse, but it is assumed that job dissatisfaction is one of the main reasons for the job search behaviour of school-leavers who have a job mismatch (Allen and Van der Velden, 2001). Job mismatches are an important cause of job dissatisfaction (Tsang and Levin, 1985; Burris, 1985), which provide an incentive for school-leavers to change jobs, hopefully leading to position that better matches their knowledge and skills.

A second strategy to deal with job mismatches is to invest in additional training in order to compensate for skill deficiencies in initial education. It is assumed that if the field of education obtained by school-leavers corresponds to the field which is required on the work floor, the need for further training is less (Barron, Black and Loewenstein, 1989; Van Smoorenburg and Van der Velden, 2000). Hence, we formulate the hypothesis that school-leavers who work outside their field of education are more likely to participate in additional training than school-leavers who have a job in their own field.

Concerning cross-country variation in the labour market effects of job mismatches, two contrasting hypotheses can be formulated. On the one hand, it can be expected that in countries characterized by a weak association between education and work the consequences of having a job mismatch for the labour market position of school-leavers are smaller than in countries where education is strongly related to the labour market. With respect to occupational returns, it is thus expected that for school-leavers with a job mismatch in a country where the education system is mainly vocationally oriented, the loss in occupational status is larger than for corresponding school-leavers in a country that mainly provides general education. The reason why school-leavers with a job mismatch are less 'penalized' in countries where vocational education is less developed, lies in the fact that in these countries educational qualifications obtained in initial education are used primarily as a screening device to determine the trainability of school-leavers (Arrow, 1973; Spence, 1974). By means of on-the-job-training occupation-specific skills are acquired that make promotion to a better fitting job possible. For that reason, we expect that in countries where the education system is rather general than vocational,

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[1] Also from a more pragmatic point of view the emphasis here is on occupational status attainment. Information on income is (for most countries) not available in the data set that is used in this paper, and therefore, occupational status is used as a proxy for wages to estimate the effect of job mismatches.

the likelihood of participation in continuous vocational training and job search activities among school-leavers with a job mismatch is higher.

On the other hand, it may be the case that in countries with a tight education-employment relationship the labour market effects of job mismatches are smaller than in countries where education is loosely linked to the labour market. The rationale behind this hypothesis lies in the safety net function of vocational education (Shavit and Müller, 2000a, 2000b). Vocational education appears to be more effective in countries where it is well focused, specific rather than general, and relevant to the skills needed on the work floor. Therefore, it is assumed that the loss in occupational status among school-leavers with a job mismatch is smaller here and adjustment strategies to improve fit are less common.

3 Research design

3.1 Data

The data that are used for the empirical analysis come from the EU LFS 2000 ad hoc module on school-to-work transitions. This data set combines information from the original Labour Force Surveys (LFS) with special topical information on the transition from school to working life. The analysis that follows, covers thirteen European countries (Austria, Belgium, Denmark, Spain, Finland, France, Greece, Hungary, Italy, Luxembourg, the Netherlands, Sweden, and Slovenia) for which reliable data are available.[2] School-leavers are defined as those individuals aged 15-35 years old, who have once left initial education within the past five (Finland, Luxembourg, the Netherlands, and Sweden) or ten (all other countries) years. Since this definition implies that people who are in initial education at the time of the survey, but who have already left education (at least once) in the past five or ten years (for more than one year), belong to the selection of school-leavers, a modified ILO definition (ILO, 1990) is applied to define the employed labour force. All people who are employed at the time of the survey, but who are in initial education at the same time, are excluded from the active labour force. Furthermore, the sample is restricted to persons who have attended a vocational programme before leaving initial education for the first time. Since lower secondary education is considered as general in nature, it does not make sense to study whether those who left initial education with a diploma at the level of ISCED1-2 have a (non) matching job and, therefore, all school-leavers from this level of education are excluded from the analysis. For the same reason, school-leavers from upper secondary education and graduates from tertiary education with a general programme are not analysed. At the ISCED3-4 level this concerns 16 per cent of the school-leavers (in particular those from upper general secondary education which prepares for

[2] Data from Ireland, Lithuania, Latvia, Portugal, Romania, Slovakia, and the United Kingdom are excluded, due to small sample sizes and/or serious problems with measurement or comparability of one or more crucial variables of interest.

tertiary education); at the ISCED5-6 level it concerns only 1 per cent of the graduates. We also exclude self-employed persons and family workers (i.e. we analyse only persons in paid employment). Finally, armed forces are not analysed to be sure that military personnel is not mixed up with school-leavers who are in military service. Considering these selections and after list wise deletion of respondents for whom information is missing on any of the variables used, an analytic sample of 36,268 school-leavers remains.

3.2 Measurement of variables

To determine the fit between the field of education attended by school-leavers in initial education and the job found on the labour market, an objective measure is used. A job mismatch is defined as a discrepancy between the current occupation a school-leaver is working in and the field of education attended. Individuals working outside their field of education are treated as school-leavers with a non matching job. In Table A1 of the Appendix an overview is given of the occupations that match to a particular field of education. Basic criterion used when assigning occupational codes to a field of education is the assumed congruence of skills acquired through the field of education and those needed on the job. All other combinations between field of education and occupation are considered as job mismatches.

To investigate the consequences of job mismatches for the labour market position of school-leavers we analyse three labour market outcomes. First of all, the occupational status of the current job is used to estimate the effect of job mismatches. The occupational status of a job is determined on the basis of the International Socio-Economic Index (ISEI), which represents an internationally comparable measure of occupational status (Ganzeboom, De Graaf and Treiman 1992; Ganzeboom and Treiman 1996). Status scores were assigned to occupational titles (based on 3-digit information from the ISCO-88 classification) according to a scale that ranges from 16 for occupations with the lowest status to 90 for occupations with the highest status. Secondly, we study the effect of job mismatches on job search activities. For this purpose, information is used on whether or not school-leavers had actively looked for another job during the last four weeks before the survey. Thirdly, the effect of job mismatches on training participation is analysed. Training participation of school-leavers is restricted here to participation in continuous vocational training to advance or change the working career (i.e. participation in initial education is excluded) in the last four weeks before the survey.

As independent variables, the following characteristics are included into the analysis. To control for differences in educational attainment, we introduce the level and field of education. Level of education concers the highest level of education successfully completed when leaving initial education. It is measured in terms of ISCED 1997 (see OECD (1999) for more details). We distinguish two levels: upper secondary and post-secondary, non tertiary education (ISCED3-4) and tertiary education (ISCED5-6). Field of education refers to the latest educational programme attended before leaving initial education. This definition implies that field of education does not necessarily relates to the

highest educational level successfully completed.[3] Eight fields are distinguished (see Andersson and Olsson (1999) for more information): 1) education; 2) humanities and arts; 3) social sciences, business and law; 4) sciences; 5) engineering, manufacturing and construction; 6) agriculture; 7) health and welfare; 8) services. In addition to the measurement of the level and field of education, a variable is included that determines whether a school-leaver has obtained a (non tertiary) vocational qualification or not.[4] For those who have obtained a vocational qualification, a further distinction is made between a school-based, workplace-based or apprenticeship-type vocational qualification. School-leavers for whom adequate information is not available to make such a distinction, are assigned to the category of 'type unknown'.

Other individual characteristics that are taken into account, are gender (female versus male) and age. The latter variable is measured in age groups (15-19; 20-24; 25-29; 30-35).

To determine the impact of job characteristics, we use three variables. First of all, job tenure is taken into account (measured in years). Job tenure is based on the year in which a school-leaver started working in his/her current job. Furthermore, we include information on the nature of the work contract (permanency of the job and full-time versus part-time distinction). The permanency of a job is measured by making the contrast between permanent and temporary jobs. A temporary position reflects a job with a contract of limited duration. The part-time versus full-time distinction is built on the subjective evaluation of the individual and not on the actual number of hours worked per week.

Labour market circumstances when leaving education are controlled for by using the aggregate unemployment level in the year of entry. The required unemployment figures are published in OECD (2001).[5]

Two organizational characteristics are included in the analysis. We first look at the size of the firm in which school-leavers work. We distinguish small (1-10 persons) and larger firms (11+ persons). Secondly, the economic sector is operationalized by adding a dummy variable that represents individuals working in the public sector.

Finally, differences between countries are taken into account. First, we use a set country dummies to determine cross-country variation. Then, we investigate to what extent the variation found between the countries can be explained by national differences in the participation of upper secondary education students in vocational education. These differences are indicated by two measures (see OECD, 2000: Table 2.2): the share of school-based, respectively apprenticeship-type vocational education in a country.

A statistical description of the variables used in the analysis can be found in Table 1.

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[3] Only in Denmark and Italy this is the case, where information on field of education is related to the highest level of education completed.

[4] Once again, this piece of information does not necessarily refer to the highest qualification obtained.

[5] The unemployment data from Slovenia are based on ILO (2001).

Table 1. Statistical description of the variables used in the analysis (N = 36,268)

Variable	minimum	maximum	mean	standard deviation
Job mismatch (vs. job match)	0.000	1.000	0.361	0.480
Occupational status (ISEI)	16.000	85.000	46.381	15.095
Looking for another job (vs. not looking)	0.000	1.000	0.099	0.299
Participating in continuous training (vs. not participating)	0.000	1.000	0.051	0.221
ISCED3-4 (vs. ISCED5-6)	0.000	1.000	0.555	0.497
Field of education (vs. education)				
Humanities, arts	0.000	1.000	0.064	0.244
Social sciences, business, law	0.000	1.000	0.331	0.471
Sciences	0.000	1.000	0.065	0.247
Engineering, manufacturing, construction	0.000	1.000	0.297	0.457
Agriculture	0.000	1.000	0.025	0.155
Health, welfare	0.000	1.000	0.087	0.282
Services	0.000	1.000	0.083	0.276
Vocational (non tertiary) qualification (vs. no)				
Yes, school-based	0.000	1.000	0.103	0.304
Yes, workplace-based	0.000	1.000	0.002	0.045
Yes, apprenticeship-type	0.000	1.000	0.035	0.185
Yes, type unknown	0.000	1.000	0.318	0.466
Female (vs. male)	0.000	1.000	0.504	0.500
Age (vs. 15-19)				
20-24	0.000	1.000	0.327	0.469
25-29	0.000	1.000	0.477	0.500
30-35	0.000	1.000	0.173	0.378
Job tenure (years)	0.000	10.000	2.713	2.856
Temporary job (vs. permanent job)	0.000	1.000	0.244	0.429
Part-time job (vs. full-time job)	0.000	1.000	0.098	0.297
Unemployment level in entry year (%)	2.600	23.700	11.280	4.411
Larger firm (vs. small firm)	0.000	1.000	0.691	0.462
Public sector (vs. private sector)	0.000	1.000	0.235	0.424
Country (vs. the Netherlands)				
Austria	0.000	1.000	0.055	0.228
Belgium	0.000	1.000	0.039	0.192
Denmark	0.000	1.000	0.027	0.162
Spain	0.000	1.000	0.156	0.362
Finland	0.000	1.000	0.043	0.204
France	0.000	1.000	0.246	0.431
Greece	0.000	1.000	0.058	0.233
Hungary	0.000	1.000	0.116	0.321
Italy	0.000	1.000	0.174	0.379
Luxembourg	0.000	1.000	0.004	0.060
Sweden	0.000	1.000	0.030	0.170
Slovenia	0.000	1.000	0.033	0.178
Share of school-based vocational education (%/10)	1.100	7.200	4.879	1.690
Share of apprenticeship-type vocational education (%/10)	0.000	4.400	0.739	1.165

Source: EU LFS 2000 ad hoc module on school-to-work transitions

4 Determinants of job mismatches

Table 2 displays the results of logistic regression analysis of having a job mismatch. Model 1 shows that as expected young people who left school at the ISCED3-4 level have more often a job mismatch than those who graduated at the ISCED5-6 level. The implied odds ratio is 2.119 ($e^{0.751}$). With respect to field of education, it is found that school-leavers from humanities/arts, agriculture, and sciences have more frequently a job mismatch than school-leavers from education (i.e. reference category). Those from engineering/manufacturing/construction, health/welfare, social sciences/business/law, and services, in contrast, have a higher likelihood of being employed in a non matching job. The attainment of a (non tertiary) vocational qualification has hardly any significant effect on the odds of having a job mismatch. Only school-leavers who have obtained a vocational qualification, but for whom information on the type of the vocational qualification is missing, are somewhat more often employed in a non matching job. Furthermore, the results of model 1 indicate that men are more often employed in a job that does not fit the field of education attended than women. Also, older workers are more likely to be working in a non matching job than younger workers.

In addition to these individual factors, job characteristics matter. First of all, job tenure has a negative effect on the likelihood of being employed in a non matching job: school-leavers who work for a long time now in their current job have less often a job mismatch than school-leavers who hold their current job only recently. Secondly, school-leavers who have a temporary contract are more often in a job that does not match their field of education attended than those with a permanent contract. Thirdly, school-leavers with a part-time job have more often a job mismatch than those who work full-time.

With respect to structural circumstances it is found in model 1 that the aggregate unemployment rate in the year of labour market entry has a significant positive effect on the odds of having a job mismatch for school-leavers. This finding indicates that in times of high unemployment school-leavers have to accept more often a job that does not fit their field of education attended in initial education than in times of low unemployment. Also the structure of the organization a school-leaver is working in affects the odds of having a job mismatch. First of all, in larger firms the likelihood of having a non matching job is lower than small ones. Moreover, school-leavers who work in the public sector are less likely to be employed in a non matching job than those who work in the private sector.

Model 2 presents cross-country differences in the odds of having a job mismatch. The country dummies show that in Italy, Denmark, Greece, Hungary, and Sweden the incidence of job mismatches among school-leavers is significantly higher than in the Netherlands (i.e. reference category). In Luxembourg, on the other contrary, the odds of having a job mismatch for school-leavers is significantly lower. All other countries show results that do not deviate significantly from the Netherlands.

Table 2. Results of logistic regression analysis of having a job mismatch: logit effects (N = 36,268)

Model	1	2	3
Constant	-0.884**	-1.068**	-1.078**
ISCED3-4 (vs. ISCED5-6)	0.751**	0.713**	0.720**
Field of education (vs. education)			
Humanities, arts	0.992**	0.996**	1.001**
Social sciences, business, law	-0.748**	-0.713**	-0.723**
Sciences	0.383**	0.409**	0.396**
Engineering, manufacturing, construction	-1.075**	-1.036**	-1.059**
Agriculture	0.551**	0.604**	0.580**
Health, welfare	-0.885**	-0.813**	-0.857**
Services	-0.717**	-0.688**	-0.706**
Vocational (non tertiary) qualification (vs. no)			
Yes, school-based	0.001	0.076	0.048
Yes, workplace-based	-0.251	-0.148	-0.230
Yes, apprenticeship-type	0.075	0.223*	0.171*
Yes, type unknown	0.090**	-0.023	0.078*
Female (vs. male)	-0.059*	-0.064*	-0.060*
Age (vs. 15-19)			
20-24	0.195*	0.171*	0.189*
25-29	0.274**	0.229**	0.273**
30-35	0.301**	0.208*	0.299**
Job tenure (years)	-0.033**	-0.031**	-0.032**
Temporary job (vs. permanent job)	0.165**	0.195**	0.180**
Part-time job (vs. full-time job)	0.160**	0.197**	0.168**
Unemployment level in entry year (%)	0.014**	0.012	0.014**
Larger firm (vs. small firm)	-0.149**	-0.122**	-0.148**
Public sector (vs. private sector)	-0.246**	-0.249**	-0.249**
Country (vs. the Netherlands)			
Austria		0.027	
Belgium		0.180	
Denmark		0.495**	
Spain		0.178	
Finland		-0.001	
France		0.138	
Greece		0.336**	
Hungary		0.247*	
Italy		0.516**	
Luxembourg		-0.654**	
Sweden		0.245*	
Slovenia		0.064	
Share of school-based vocational education (%/10)			0.040**
Share of apprenticeship-type vocational education (%/10)			-0.015
Model Chi^2	3,391**	3,561**	3,430**
Df	22	34	24
Pseudo R^2	0.122	0.128	0.124

* = p < 0.05; ** = p < 0.01

Source: EU LFS 2000 ad hoc module on school-to-work transitions

In model 3 we test to what extent the variation found between the countries can be explained by national differences in the participation of upper secondary education students in vocational education. These differences are measured by two indicators: the share of school-based vocational education and the share of apprenticeship-type vocational education. By comparing the fit of the models 1, 2, and 3, it can be calculated that almost one quarter of the total cross-country variation can be attributed to both country characteristics ((3,430 - 3,391) / (3,561 - 3,391) = 0.229). In Figure 1 the impact of these country characteristics is visualized. The regression lines show the estimated effects of model 3, whereas the dots represent the observed percentages for each country separately.

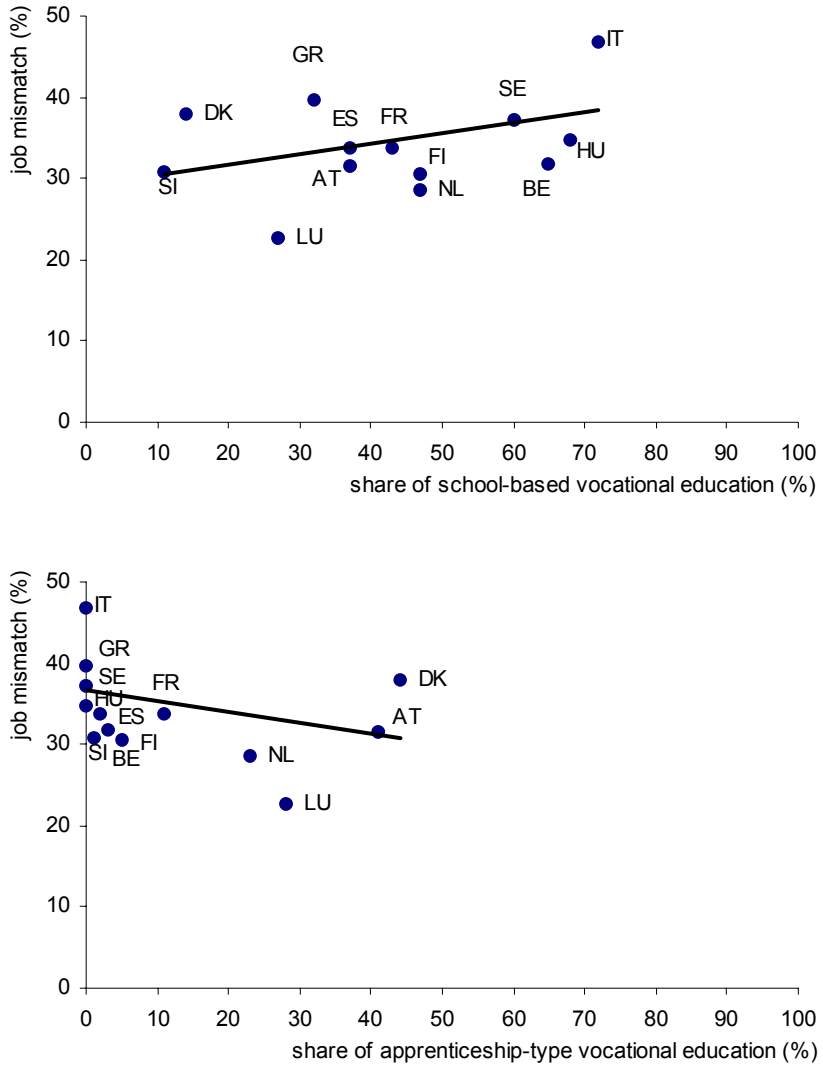
The upper part of this figure shows that in countries where the percentage of upper secondary education students in school-based vocational education is large, the incidence of job mismatches among school-leavers is higher than in countries where the percentage of upper secondary education students in school-based vocational education is low. According to model 3 of Table 2 this effect is significant. With respect to the share of upper secondary education students in an apprenticeship, it seems that the higher this percentage is in a country, the lower the incidence of job mismatches among school-leavers in this country (see the lower part of Figure 1). This effect, however, is not significant.

5 Labour market effects of job mismatches

5.1 Occupational status attainment

In Table 3 the results of linear regression analysis of achieved occupational status are presented. Model 1 shows that school-leavers with a job mismatch attain significantly less occupational status than school-leavers with a matching job. The difference is 5.021 status points. Once other characteristics are taken into account, the lower achieved occupational status for those with a job mismatch remains significant (see model 2). Now, the difference in occupational status is 4.207 points. Of these other characteristics, level of education has a strong positive impact on the occupational status achieved. School-leavers with ISCED3-4 level achieve 11.163 points less occupational status than graduates from ISCED5-6. Differences between fields of education exist as well. Graduates who attended a degree in sciences achieve significantly more occupational status than those from education. School-leavers from health/welfare, services, agriculture, and engineering/manufacturing/ construction, in contrast, receive less occupational status for the jobs they hold. Furthermore, age differences in status attainment are present: older workers hold jobs with more occupational status than younger workers.

Figure 1 The relationship between the share of school-based, respectively apprenticeship-type vocational education in a country and the likelihood of having a job mismatch



Source: EU LFS 2000 ad hoc module on school-to-work transitions

With regard to job characteristics, it is found that job tenure has a negative effect on achieved occupational status. This finding can be interpreted as follows: the longer someone stays in his/her current job, the less likely it is that he/she will be promoted to a job with more occupational status. The nature of the job contract has a negative impact on achieved occupational status as well. School-leavers with a temporary and/or part-time job have jobs with less occupational status than school-leavers with a permanent and/or full-time job. The estimated difference in status is 1.904 and 2.370 points respectively.

Table 3 Results of linear regression analysis of achieved occupational status (ISEI): unstandardized regression effects (N = 36,268)

Model	1	2	3	4	5
Constant	48.193**	57.598**	58.013**	54.667**	56.532**
Job mismatch (vs. job match)	-5.021**	-4.207**	-4.397**	-4.286**	-9.541**
ISCED3-4 (vs. ISCED5-6)		-11.163**	-12.569**	-11.628**	-11.619**
Field of education (vs. education)					
Humanities, arts		0.624	1.440**	0.763	0.748
Social sciences, business, law		-0.271	0.783*	0.102	0.011
Sciences		3.813**	4.895**	4.008**	3.961**
Engineering, manufacturing, construction		-4.643**	-3.732**	-4.398**	-4.500**
Agriculture		-4.975**	-3.908**	-4.528**	-4.690**
Health, welfare		-6.172**	-4.919**	-5.768**	-5.795**
Services		-5.529**	-4.942**	-5.346**	-5.474**
Vocational (non tertiary) qualification (vs. no)					
Yes, school-based		0.201	0.054	0.868**	.984**
Yes, workplace-based		-1.437	-1.859	-1.116	-1.073
Yes, apprenticeship-type		-2.979**	-4.598**	-1.554**	-1.599**
Yes, type unknown		-1.162**	-0.054	-1.343**	-1.431**
Female (vs. male)		0.087	0.010	0.072	0.050
Age (vs. 15-19)					
20-24		4.161**	3.528**	4.080**	4.115**
25-29		7.081**	6.544**	7.082**	7.090**
30-35		10.427**	9.794**	10.414**	10.366**
Job tenure (years)		-0.200**	-0.238**	-0.190**	-0.185**
Temporary job (vs. permanent job)		-1.904**	-1.535**	-1.687**	-1.646**
Part-time job (vs. full-time job)		-2.370**	-1.781**	-2.262**	-2.255**
Unemployment level in entry year (%)		-0.343**	-0.153**	-0.346**	-0.348**
Larger firm (vs. small firm)		-0.051	0.312*	-0.029	-0.049
Public sector (vs. private sector)		2.859**	2.825**	2.821**	2.767**
Country (vs. the Netherlands)					
Austria			1.516*		
Belgium			-3.351**		
Denmark			-4.773**		
Spain			-4.561**		
Finland			-2.049**		
France			-5.803**		
Greece			-0.939		
Hungary			-0.496		
Italy			0.322		
Luxembourg			-2.499*		
Sweden			-4.141**		
Slovenia			-0.953		
Share of school-based vocational education (%/10)				0.609**	0.294**
Share of apprenticeship-type vocational education (%/10)				-0.219**	-0.579**
Interactions with job mismatch (vs. job match)					
Share of school-based vocational education (%/10)					0.902**
Share of apprenticeship-type vocational education (%/10)					1.112**
F	950**	844**	606**	794**	742**
Df	1	23	35	25	27
Adjusted R^2	0.025	0.348	0.369	0.353	0.356

* = p < 0.05; ** = p < 0.01

Source: EU LFS 2000 ad hoc module on school-to-work transitions

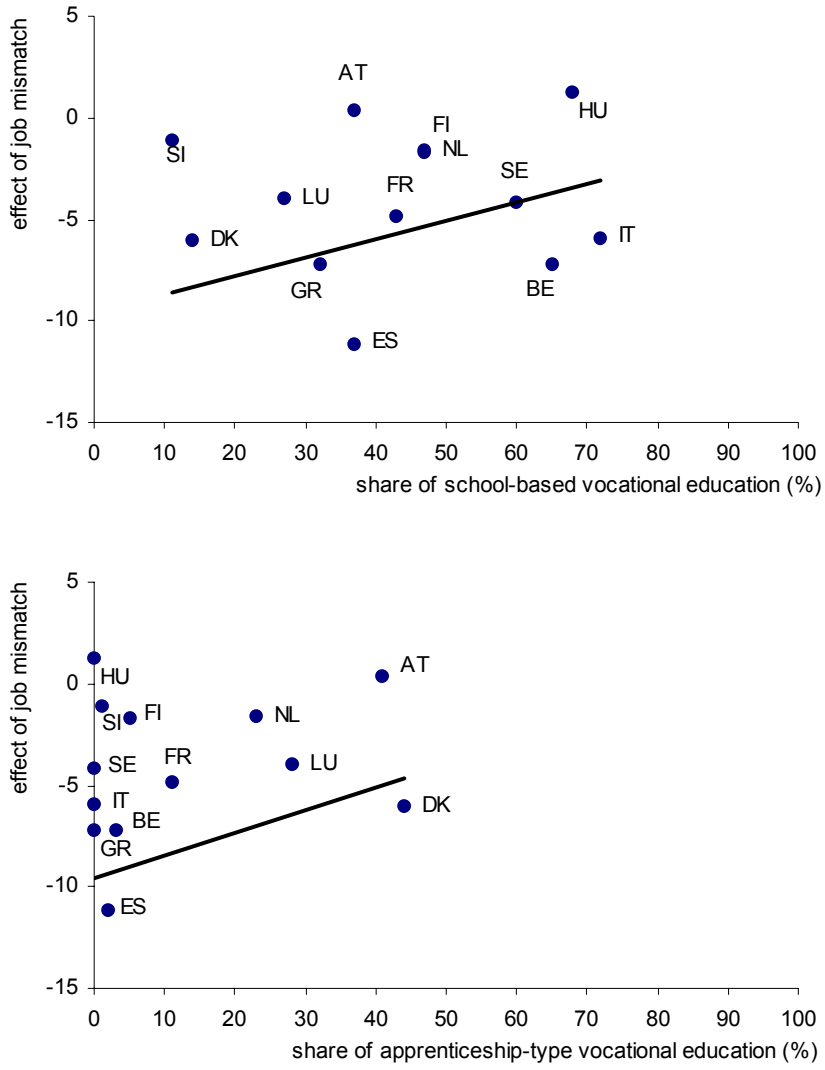
School-leavers who enter the labour market during an economic recession achieve less occupational status with their job than school-leavers who start working in a period of an economic upswing. The estimated regression coefficient indicates that an increase of the aggregate unemployment rate with ten percent, coincides with a loss in occupational status of more than 3 points (10 * -0.343 = -3.430). Furthermore, school-leavers who work in the public sector attain significantly more occupational status than school-leavers who are employed in the private sector.

Model 3 displays that the average occupational status achieved by school-leavers differs significantly between countries. In Austria, school-leavers attain most occupational status with their jobs; in France they achieve the least. The difference in the average achieved occupational status between these countries amounts to over seven status points (1.516 + 5.803 = 7.319).

In model 4 the country dummies have been replaced by the two country characteristics measuring national differences in the participation of upper secondary education students in vocational education. The model shows that in countries with a high share of school-based vocational education the average occupational status achieved by school-leavers is higher than in countries with a low share of school-based vocational education. With respect to the share of apprenticeship-type vocational education the opposite effect is found: in countries where the percentage of upper secondary education students in an apprenticeship is high, the average occupational status attained is higher than in countries where the percentage of upper secondary education students in an apprenticeship is low.

In model 5 statistical interaction terms between the country characteristics and the job mismatch variabele are added in order to determine the impact of both educational characteristics on the relationship between having a job mismatch and the occupational status achieved. Figure 2 present the results of model 5. The regression lines display the estimated loss in occupational status as a result of having a job mismatch for varying shares of school-based, respectively apprenticeship-type vocational education, whereas the dots indicate the observed loss in occupational status for each country separately. The figure demonstrates that the negative effect of having a job mismatch on the occupational status achieved by school-leavers is smaller in countries where the shares of upper secondary education students in school-based and apprenticeship-type vocational education are high than in countries where these shares are low. This implies that the loss in occupational status among school-leavers with a job mismatch is smaller in countries where the education system is more vocationally oriented.

Figure 2 The relationship between the share of school-based, respectively apprenticeship-type vocational education in a country and the effect of having a job mismatch on achieved occupational status (ISEI)



Source: EU LFS 2000 ad hoc module on school-to-work transitions

5.2 Job search activities

Table 4 desribes the results of logistic regression anlysis of looking for another job. In model 1 we see that for school-leavers with a job mismatch the odds of looking for another job is 1.576 ($e^{0.455}$) times larger than the corresponding odds for school-leavers with a matching job. This effect is reduced to some extent if other factors are taken into account. Nevertheless, model 2 shows that, other things being equal, the estimated effect is still significant. Now, the implied odds ratio is 1.399 ($e^{0.336}$). In addition, model 2 displays that school-leavers with a certificate at the ISCED3-4 level are less often looking for another job than graduates with a degree at the ISCED5-6 level. Differences between fields of education with respect to job

search activities hardly exist. Only school-leavers from agriculture are significantly less often looking for another job than those from education. Having obtained a (non tertiary) vocational qualification affects job search activities as well. School-leavers with a school-based vocational qualification or with a vocational qualification of which the type of training is unknown are more often looking for another job than those who have not obtained a vocational qualification. Furthermore, age has a positive effect on the likelihood of looking for another job. For school-leavers within the oldest age group the odds of looking for another job is 1.756 ($e^{0.563}$) times larger than the corresponding odds for school-leavers within the youngest age group.

Job tenure has a negative effect on job search activities: the longer a school-leaver has been in his/her current job, the smaller the likelihood of looking for another one. Atypical employment is positively related to job search activities: school-leavers who work on a temporary and/or part-time basis are more often looking for another job than those with a permanent and/or full-time position.

With respect to structural labour market circumstances model 2 demonstrates that in times of high unemployment the probability of job search among school-leavers is smaller than in times of low unemployment. This finding suggests that individuals look for job security during an economic recession and do not want to run the risk of losing established rights by changing jobs. Moreover, there are a few alternative jobs during a recession, which renders the costs of finding one high.

The organizational characteristics controlled for in the analysis both significantly affect job search activities: school-leavers who work in larger firms and/or the public sector are less often looking for another job than school-leavers who are employed in small firms and/or the private sector.

Model 3 shows that the incidence of job search activities differs cross-nationally. Swedish school-leavers are most often looking for another job, followed by school-leavers from Italy, Finland, Denmark, Belgium, and France. In Hungary and Spain, on the other hand, job search activities are least often found among school-leavers.

In model 4 the country dummies have been replaced once again by the two characteristics of the education system in a country. Both characteristics are significant and indicate that in countries with a high share of school-based, respectively apprenticeship-type vocational education job search activities among school-leavers are higher than in countries with a low share of both kinds of vocational education.

In model 5 interactions between the two country characteristics and the job mismatch variabele are added again. Figure 3 illustrates the results of this model. The regression lines display the logit effect of having a job mismatch on the likelihood of looking for another job for varying shares of school-based, respectively apprenticeship-type vocational education, whereas the dots represent the observed logit for each country separately. The figure shows that the positive effect of having a job mismatch on job search activities among school-leavers is smaller in countries where the shares of upper secondary education students in school-based, respectively apprenticeship-type vocational education are high than in countries where these shares are low. Only with regard to the share of apprenticeship-type vocational education, the interaction effect is significant.

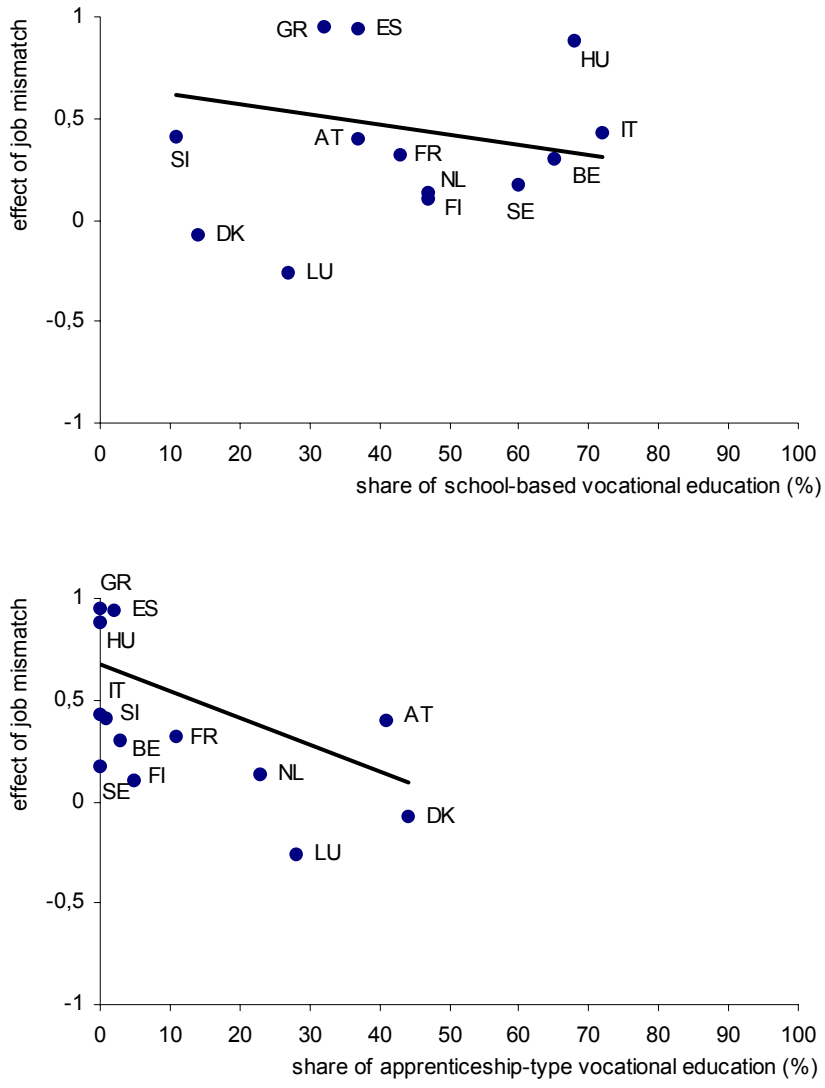
Table 4 Results of logistic regression analysis of looking for another job: logit effects (N = 36,268)

Model	1	2	3	4	5
Constant	-2.393**	-2.686**	-3.277**	-3.136**	-3.295**
Job mismatch (vs. job match)	0.455**	0.336**	0.346**	0.333**	0.675**
ISCED3-4 (vs. ISCED5-6)		-0.423**	-0.243**	-0.443**	-0.443**
Field of education (vs. education)					
Humanities, arts		-0.038	-0.182	-0.026	-0.024
Social sciences, business, law		-0.058	-0.074	-0.027	-0.016
Sciences		-0.116	-0.219	-0.102	-0.095
Engineering, manufacturing, construction		-0.136	-0.095	-0.108	-0.098
Agriculture		-0.430**	-0.361*	-0.393**	-0.375*
Health, welfare		0.039	-0.008	0.075	0.080
Services		-0.103	-0.143	-0.088	-0.076
Vocational (non tertiary) qualification (vs. no)					
Yes, school-based		0.172*	0.046	0.195**	0.182*
Yes, workplace-based		-0.393	-0.098	-0.373	-0.397
Yes, apprenticeship-type		0.125	0.162	0.082	0.084
Yes, type unknown		0.699**	0.093	0.652**	0.655**
Female (vs. male)		0.007	0.030	0.008	0.009
Age (vs. 15-19)					
20-24		0.211	0.059	0.186	0.183
25-29		0.489**	0.269*	0.466**	0.465**
30-35		0.563**	0.219	0.536**	0.541**
Job tenure (years)		-0.083**	-0.071**	-0.084**	-0.084**
Temporary job (vs. permanent job)		1.312**	1.325**	1.333**	1.332**
Part-time job (vs. full-time job)		1.185**	1.174**	1.183**	1.183**
Unemployment level in entry year (%)		-0.062**	-0.002	-0.055**	-0.054**
Larger firm (vs. small firm)		-0.188**	-0.145**	-0.190**	-0.189**
Public sector (vs. private sector)		-0.418**	-0.461**	-0.419**	-0.417**
Country (vs. the Netherlands)					
Austria			0.104		
Belgium			0.385*		
Denmark			0.579**		
Spain			-0.714**		
Finland			0.660**		
France			0.375*		
Greece			0.028		
Hungary			-1.709**		
Italy			0.674**		
Luxembourg			0.640		
Sweden			0.918**		
Slovenia			-0.351		
Share of school-based vocational education (%/10)				0.072**	0.093**
Share of apprenticeship-type vocational education (%/10)				0.055*	0.109**
Interactions with job mismatch (vs. job match)					
Share of school-based vocational education (%/10)					-0.050
Share of apprenticeship-type vocational education (%/10)					-0.132**
Model Chi^2	162**	2,901**	3,440**	2,923**	2,933**
Df	1	23	35	25	27
Pseudo R^2	0.009	0.162	0.190	0.163	0.163

* = p < 0.05; ** = p < 0.01

Source: EU LFS 2000 ad hoc module on school-to-work transitions

Figure 3 The relationship between the share of school-based, respectively apprenticeship-type vocational education in a country and the effect of having a job mismatch on looking for another job



Source: EU LFS 2000 ad hoc module on school-to-work transitions

5.3 Participation in continuous vocational training

In Table 5 the findings of logistic regression analysis of participating in continuous vocational training are presented. Model 1 shows that, on average, school-leavers with a job mismatch less often participate in continuous vocational training than school-leavers with a matching job. The implied odds ratio is 0.795 ($e^{-0.229}$). After taking individual, job, and structural characteristics into account in model 2, the estimated odds ratio takes the value of 0.872 ($e^{-0.137}$). Of these characteristics, the level of education attained by school-leavers has a positive effect on training participation: school-leavers with

ISCED3-4 level less often follow continuous vocational training than graduates with ISCED5-6 level. Besides, the field of education attended by school-leavers has an effect on the likelihood of training participation. In any field of education (with the exception of sciences) participation in continuous vocational training is significantly higher than in education. The probability of continuous vocational training also depends on whether or not a school-leaver has obtained a (non tertiary) vocational qualification. School-leavers with a school-based vocational qualification participate more frequently in continuous training than those with no vocational qualification. School-leavers with a vocational qualification of which the type of training is unknown, in contrast, participate less often in continuous training. In addition, women are less often involved in continuous training than men. And with respect to age, it is found that school-leavers in the age group of 25-29 years participate most often in continuous vocational education.

Concerning job characteristics, model 2 shows that job tenure has a negative effect on training participation. The longer a school-leaver is employed in his/her current job, the lower the probability that he/she participates in continuous vocational education. Furthermore, one aspect of the nature of the employment contract matters: school-leavers with a temporary job more often participate in continuous vocational training than those with a permanent one. Probably, labour market entrants invest in additional training to acquire firm-specific skills and only after finishing this training and applying the acquired skills successfully in the firm, employers change their temporary contracts into permanent ones.

In times of high unemployment, investments in continuous vocational education are smaller than in times of low unemployment. Furthermore, in larger firms and in the public sector, the probability of training participation among school-leavers is higher than in small firms and in the private sector.

Once differences in training participation between countries are taken into account, the effect of job mismatches becomes non-significant (see model 3). This means that the earlier found effect of job mismatches on the likelihood of participating in continuous vocational training is the result of the country-specific composition of the data. Regarding cross-country variation in training participation, model 3 demonstrates that the incidence of continuous vocational training is highest in Denmark and Finland. In Spain, Italy, and Greece, on the other hand, the participation in continuous vocational training is lowest. So, with respect to training participation among school-leavers, there is a clear north-south contrast within Europe.

According to model 4, the vocational orientation of the education system has a positive impact on the incidence of training participation. In countries where the share of school-based, respectively apprenticeship-type vocational education is high, school-leavers are more likely to participate in continuous vocational training than in countries where these shares are low. So, at the macro level continuous vocational training build on the occupation-specific skills already acquired in initial education.

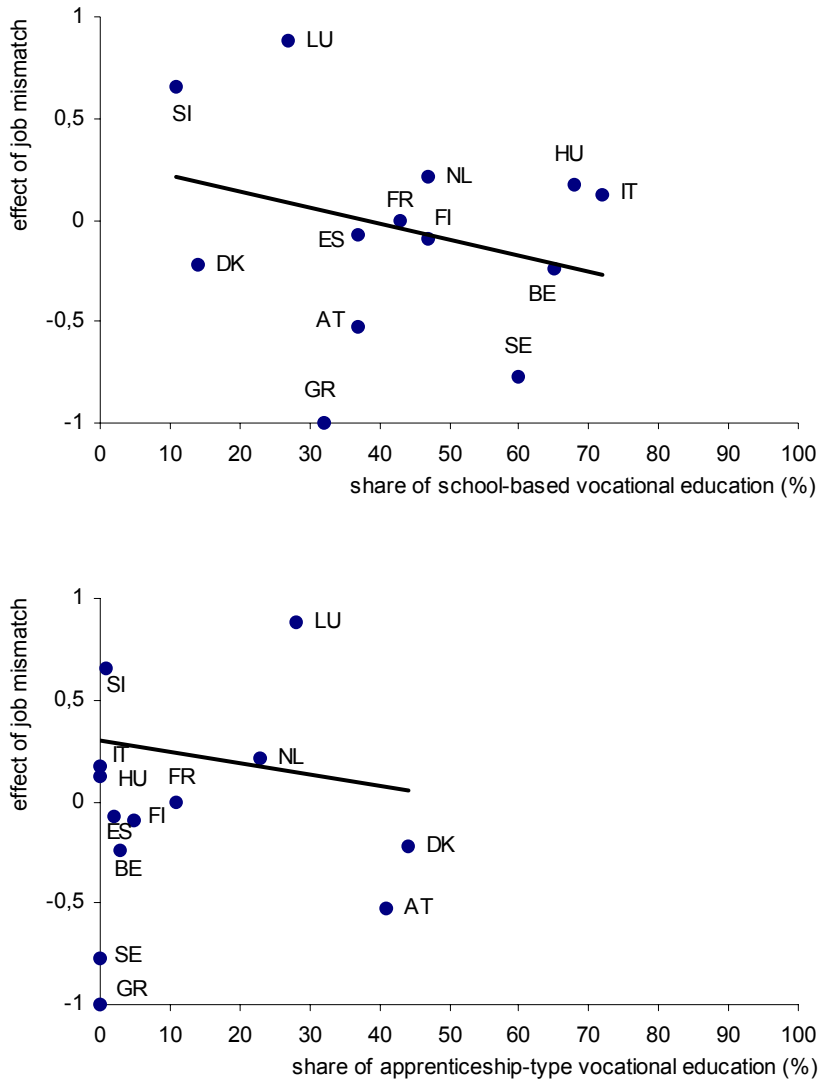
Table 5 Results of logistic regression analysis of participating in continuous training: logit effects (N = 36,268)

Model	1	2	3	4	5
Constant	-2.841**	-1.461**	-2.095**	-2.246**	-2.394**
Job mismatch (vs. job match)	-0.229**	-0.137*	-0.103	-0.137*	0.296
ISCED3-4 (vs. ISCED5-6)		-0.374**	-0.399**	-0.306**	-0.308**
Field of education (vs. education)					
Humanities, arts		0.454**	0.602**	0.485**	0.486**
Social sciences, business, law		0.487**	0.464**	0.468**	0.472**
Sciences		-0.053	-0.045	-0.047	-0.044
Engineering, manufacturing, construction		0.272*	0.082	0.291*	0.297*
Agriculture		0.500**	0.166	0.477*	0.491**
Health, welfare		0.432**	0.178	0.428**	0.433**
Services		0.346*	0.103	0.363*	0.369*
Vocational (non tertiary) qualification (vs. no)					
Yes, school-based		0.597**	0.311**	0.447**	0.444**
Yes, workplace-based		0.530	0.869*	0.524	0.521
Yes, apprenticeship-type		0.125	0.037	-0.349**	-0.347**
Yes, type unknown		-0.384**	-0.039	-0.473**	-0.466**
Female (vs. male)		-0.199**	-0.202**	-0.200**	-0.198**
Age (vs. 15-19)					
20-24		0.232	0.031	0.194	0.190
25-29		0.376*	0.160	0.340	0.337
30-35		0.355	0.108	0.334	0.333
Job tenure (years)		-0.027**	-0.010	-0.040**	-0.040**
Temporary job (vs. permanent job)		0.307**	0.376**	0.336**	0.334**
Part-time job (vs. full-time job)		-0.031	-0.130	-0.083	-0.086
Unemployment level in entry year (%)		-0.160**	0.037*	-0.120**	-0.119**
Larger firm (vs. small firm)		0.203**	0.027	0.157**	0.159**
Public sector (vs. private sector)		0.375**	0.370**	0.383**	0.384*
Country (vs. the Netherlands)					
Austria			0.097		
Belgium			-0.357*		
Denmark			0.424**		
Spain			-4.225**		
Finland			0.378*		
France			-1.242**		
Greece			-3.271**		
Hungary			-0.679**		
Italy			-3.364**		
Luxembourg			-1.177*		
Sweden			0.105		
Slovenia			-1.011**		
Share of school-based vocational education (%/10)				0.057**	0.083**
Share of apprenticeship-type vocational education (%/10)				0.243**	0.260**
Interactions with job mismatch (vs. job match)					
Share of school-based vocational education (%/10)					-0.079*
Share of apprenticeship-type vocational education (%/10)					-0.054
Model Chi^2	20**	925**	2,272**	1,028**	1,032**
Df	1	23	35	25	27
Pseudo R^2	0.002	0.076	0.183	0.084	0.084

* = p < 0.05; ** = p < 0.01

Source: EU LFS 2000 ad hoc module on school-to-work transitions

Figure 4. The relationship between the share of school-based, respectively apprenticeship-type vocational education in a country and the effect of having a job mismatch on participating in continuous training



Source: EU LFS 2000 ad hoc module on school-to-work transitions

Model 5 further qualifies the effect of job mismatches on training participation. By including interactions between the country characteristics that measure the vocational orientation of the education system and the job mismatch variable it turns out that the effect of job mismatches is actually positive in countries with a low share of school-based, respectively apprenticeship-type vocational training (see Figure 4). The higher these shares are, however, the smaller the impact of job mismatches on the likelihood of participating in continuous vocational training. In the case of school-based vocational education, where the interaction term is significant, the effect of job mismatches even becomes negative after a certain point.

6 Conclusions and discussion

In this paper, we have investigated the determinants of job mismatches with respect to field of education among school-leavers in Europe. In addition, the effects of having a job mismatch on the labour market position of school-leavers have been examined. Special attention has been paid to cross-country variation in this respect. For that purpose, data from the EU LFS 2000 ad hoc module on school-to-work transitions have been used in the empirical analysis.

The results of this analysis show that several factors affect the likelihood of having a job mismatch. First of all, individual characteristics matter. As expected, higher educated and occupation-specific qualified school-leavers are less often employed in a job that does not fit the field of education attended in initial education than lower educated and less occupation-specific trained school-leavers. Having obtained a (non tertiary) vocational qualification, however, hardly affects the likelihood of being in a non matching job. Surprisingly enough, male school-leavers have more often a job mismatch than their female counterparts. Furthermore, older employees are more likely to be working in a non matching job than younger ones. Secondly, the odds of having a job mismatch is determined by different job characteristics. According to our hypothesis, job tenure has a negative effect on the likelihood of having a job mismatch. Moreover, the nature of the employment contract has the supposed effect: school-leavers with a temporary and/or part-time contract are more frequently employed in a job that does not match their field of education attended than those with a permanent and/or full-time contract. Thirdly, structural characteristics affect the probability of having a job mismatch. In times of high unemployment the likelihood of having a job mismatch is higher than in times of low unemployment. In addition, school-leavers who work in larger firms and/or in the public sector have less often a job mismatch than those who are employed in small firms and/or the private sector. These findings are in support of the formulated hypotheses. Fourthly, the incidence of job mismatches differs between European countries. Almost one quarter of this cross-country variation can be attributed to national differences in the participation of upper secondary education students in vocational education. The findings show that, opposite to our expectations, in countries where the share of upper secondary education students in school-based vocational education is high, the incidence of job mismatches among school-leavers is higher than in countries where the share of upper secondary education students in school-based vocational education is low.

With respect to the labour market effects of job mismatches, the most important finding is that school-leavers with a non matching job achieve less occupational status than those with a matching one. However, the effect of having a job mismatch on achieved occupational status varies between European countries. The loss in occupational status among school-leavers with a job mismatch is smaller in countries where the education system is more vocationally oriented, i.e. where the share of school-based, respectively apprenticeship-type vocational education is higher.

Moreover, the analysis reveals that school-leavers with a job mismatch use adjustment strategies to improve fit. A first strategy refers to job search activities: school-leavers with a non matching job more frequently look for another job than school-leavers with a matching job. Once again, the impact of job

mismatches differs within Europe: in countries where the share of school-based vocational education is high, the effect of having a job mismatch on the likelihood of looking for another job is smaller than in countries where this share is low. A second adjustment strategy concerns training participation. The results are less clear in this respect. On average, there is a negative effect of having a job mismatch on the probability of participating in continuous vocational training. Interacting the effect of having a job mismatch with characteristics of the education system, however, indicates that in countries where the share of school-based, respectively apprenticeship-type vocational education is low, the impact of having a job mismatch on training participation is positive.

Finally, we have to remark on two issues here. First of all, the question can be raised whether having a job mismatch with respect to field of education is by definition a negative phenomenon. In contrast with job mismatches regarding level of education (i.e. overeducation), the interpretation of job mismatches with respect to field of education is less clear. If a lack of fit between the field of education attended by school-leavers in initial education and the type of job they hold is the result of discrepancies between acquired and required occupation-specific skills, then these job mismatches can be considered as negative. This is in particular the case in (sector-)specific jobs. However, in more general jobs occupation-specific skills are less important and here a job mismatch with regard to field of education may rather reflect the flexibility of that field of education to switch to alternative jobs. The empirical findings suggest that the former interpretation dominates: job mismatches clearly coincide with lower occupational rewards on the labour market.

Secondly, the analysis of cross-country differences with respect to job mismatches among school-leavers has been incomplete. In general, the integration of young people into the labour market depends on whether or not there is an institutional link between the education and employment system. What matters actually, is the extent to which education systems differentiate between general and vocational education. At the one extreme is the United Kingdom and – to lesser extent – Ireland, where general programmes dominate the education system. At the other extreme is Germany, characterized by its extensive dual system. However, both extremes of the same continuum were missing in the data analysis. It is likely that the absence of these countries has affected the cross-national results found in this paper. In future research, therefore, it is desirable to extend the analysis by including data from these countries.

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8 Appendix

Table A1 Field of education and matching jobs

Field of education	matching jobs (ISCO-88 (COM) 3-digit codes)
Education	200, 230, 231-235, 300, 330, 331-334
Humanities, arts	200, 230, 231, 232, 243, 245, 246, 300, 347, 348, 500, 520, 521, 522
Social sciences, business, law	100, 110, 111, 121-123, 130, 131, 200, 230-232, 241-245, 247, 300, 341-344, 346, 400, 401-422
Sciences	200, 211-213, 221, 230-232, 300, 310-313, 321
Engineering, manufacturing, construction	200, 213, 214, 300, 310-315, 700, 710-714, 721-724, 730-734, 740-744, 800, 810-817, 820-829, 831-834
Agriculture	200, 221, 222, 300, 321, 322, 600, 611-615, 800, 833, 900, 920, 921
Health, welfare	200, 221-223, 244, 300, 321-323, 330, 332, 346, 500, 510, 513, 900, 910, 913
Services	300, 345, 400, 410-419, 421, 422, 500, 510-514, 516, 520, 522, 800, 831-834, 900, 910, 913

The Only Way is Up? Employment Protection and Job Mobility among Recent Entrants to European Labour Markets

Markus Gangl

Abstract

The paper addresses the effects of employment protection legislation on job mobility and status attainment among young people entering the labour market. Given that strict employment protection legislation (EPL) has often been shown to reduce the dynamics of labour markets in general, resulting low vacancy levels might also reduce youth chances of both job and upward status mobility, and thus flatten observed status-experience profiles. Data from the European Labour Force Survey 2000 Ad-hoc-module on Transitions from School to Work for 11 European countries supports these assertions: empirically, both job and status mobility rates are negatively related to strict employment protection legislation. The total effect of employment protection on school-to-work transitions is more indeterminate, however, given that EPL also affects the structure of youth labour markets. The empirical analyses show a positive effect of employment protection legislation on occupational attainment of market entrants in both entrants' first jobs and by about five years since leaving the educational system. Empirically, these positive EPL effects on the structure of labour markets dominate negative EPL effects on upward mobility chances – i.e. job shopping typically does not compensate for a good start into working life. The respective EPL effects are shown to affect the low-skill labour market in particular.

Author acknowledgements
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1 Introduction

While most empirical studies consistently report higher levels of job mobility among those entering the labour market as compared to the core prime-age work force, there is much less agreement among social scientists as to the normative implications of such findings (cf. Ryan 2001). On the one hand, researchers emphasize positive mobility effects on careers as reflected by the positive experience gradient of wages and occupational status: in part, wages and occupational status among market entrants tend to raise precisely because young people improve wage and occupational outcomes by changing employers (Mincer 1986; Murphy and Topel 1992; Keith and McWilliams 1995). In this perspective, extensive job shopping among youth is seen as a key mechanism of career development. Against the background that job mobility might partly also be associated with unemployment experiences and downward status mobility, a number of school-to-work studies have also pointed out more negative mobility effects, however (Hammer 1997; Bernhardt et al. 2000; cf. Stevens 1997 for evidence of cumulative downward mobility in the core labour force). To young people involuntarily leaving their jobs or those caught in chains of contingent or secondary sector jobs, job stability would certainly be the more preferable career outcome. In contrast to the job shopping view, this more negative perspective would stress churning and job-hopping behaviour where mobility has few positive career implications to offer in exchange for extended periods of economic insecurity.

Unsurprisingly, these conflicting views resonate if it comes to assessing the role of employment protection legislation for youth labour market integration. In the first place, recent studies have consistently found stricter regulation of employment contracts to be associated with lower levels of turnover and mobility in labour markets (DiPrete et al. 1997, 2001; Garibaldi et al. 1997; Gregg and Manning 1997). Given that young people are among the most mobile groups in the labour market, some social scientists have pointed out that it is young peoples' careers in particular that might be negatively affected by low opportunity levels in the labour market: with little opportunity of upward mobility, young people might be effectively entrapped in unsatisfactory initial job matches (Osterman 1995), or might hesitate to accept less attractive initial job offers because of small chances of subsequent improvement (Bernardi et al. 2000). In any event, if employment protection regulation flattens the slope of the experience-status relationship, this implies both lower rates of upward mobility in the early career stages and smaller chances to compensate for early failures in the labour market through subsequent job mobility.

By providing empirical evidence on the respective effects of employment protection legislation on the structure of status attainment processes, the current paper intends to complement existing sociological research on school-to-work transitions which has largely revolved around the role of education and training systems for youth labour market integration (cf. Allmendinger 1989; Müller and Shavit 1998; Shavit and Müller 2000a, 2000b; Kerckhoff 1995, 2000; Bills 1988; Breen et al. 1995; Hannan et al. 1999; Gangl 2001). In essence, this literature has argued that more tightly structured education and training systems generate more favourable school-to-work transitions because more

specific qualifications tend to allow for more favourable job-person matches, and thus reduce job hopping and turbulence during the early career stages. Moreover, specific training arrangements like apprenticeships might offer particular advantages to young people insofar as they generate an early linkage with specific employers, which in turn raises the likelihood of receiving a first job offer quickly (cf. Rosenbaum et al. 1990; Hannan et al. 1999).

Against its many virtues, the current literature has so far been much less successful, however, in integrating the institutional structure of labour markets into the explanation of cross-national differences in school-to-work transitions. This is unfortunate insofar as labour market regulation tends to define employers' conditions of contracting labour, which might be seen as a key determinant of job structures in the youth labour market. As an attempt to fill this gap, and drawing on data from the European Union LFS 2000 Ad-hoc-module on school-to-work transitions covering 11 European countries, the paper provides empirical estimates of the effects of employment protection legislation on job mobility and status outcomes among recent entrants to European labour markets. By applying multilevel methods, the paper moreover seeks to ensure effect estimates that are both unaffected by unobserved heterogeneity between countries and subject to valid hypothesis tests in the presence of clustered data. Before presenting the empirical evidence, the underlying theory is developed in Section 2 below, which also contains a brief review of available empirical studies. Section 3 then discusses the data sources and the statistical modelling, while Section 4 has some core descriptive information on job mobility in European labour markets. Estimation results for job mobility models are then presented in Section 5, and Section 6 will reassess this evidence in the light of further results on the relationship between employment protection legislation and the structure of labour markets. Section 7 summarizes the results and develops some core conclusions about the role of labour market regulation in shaping school-to-work transitions.

2 Employment protection and labour market behaviour

In the unregulated labour market of neoclassical economics, participants in the market have perfect freedom of contracting and any resulting employment contracts are hence seen as resulting from mutual bargaining processes constrained by relative market power and interests of both individual employers and individual employees. Real world labour markets hardly reflect the neoclassical market model, however, not the least since unions, collective bargaining institutions, and state regulation of labour markets empirically tend to restrain employers' market power, and the freedom of contracting in the labour market in particular (Esping-Andersen and Regini 2000). In an important sense, labour market regulation establishes a constrained zone of legally permissible employment contracts, e.g. by defining minimal standards of hours of work, security, pay, or conditions of exchange more generally. Labour market regulation thus can be seen as determining the minimally acceptable employment contract in a particular labour market. By introducing these minimal standards, regulation tends to improve the relative market power of workers and thus acts as to impose specific contracting costs on employers.

Employment protection legislation (EPL) is a particularly important element of labour market regulation that intends to affect the duration of mutual commitments of employers and workers. In essence, EPL attempts to stabilize existing employment relationships by restricting employers' rights to terminate existing employment relationships at will and by restricting employers' use of short-term, contingent or temporary employment contracts in hiring (Esping-Andersen 2000; OECD 1999; Büchtemann and Walwei 1996). The characteristic feature of EPL is that EPL defines these constraints as legally binding, statutory worker rights where contract parties can seek judicial enforcement in case of dissent about contract conditions. While actual legal enforcement of statutory rights plays a minor role, there can be little doubt about the fact that restricting employer behaviour through EPL is highly effective in lowering worker turnover rates. It is a standard result of numerous recent studies in sociology and labour economics that non-standard, legally less protected jobs tend to be less stable than standard contracts of indefinite duration (cf. Kalleberg 2000; Kalleberg et al. 2000; DiPrete et al. 2001; Giesecke and Groß 2002; Garibaldi et al. 1997; Gregg and Manning 1997; Houseman and Polivka 2000). Respective results also hold true in cross-national comparisons of job stability across countries that differ in terms of EPL strictness (e.g. Layte et al. 2000; Esping-Andersen 2000).

Since EPL will be effective in restraining employer-initiated turnover, it is obvious to expect that EPL strictness will be negatively related to job mobility rates also among young people entering the labour market: once young people have found their first job, employment relationships will be more stable under more binding EPL regulation. If anything, the direct effect of EPL on job mobility patterns should thus be to subdue involuntary job mobility, and hence to reduce the associated risks of downward mobility and permanent scarring (Houseman and Polivka 2000 Kalleberg et al. 2000; Giesecke and Groß 2002). Given that EPL affects turnover levels in the total work force, however, strict EPL regulation also has the indirect effect of lowering overall vacancy levels in the labour market (DiPrete et al. 1997; Esping-Andersen 2000; Gregg and Manning 1997), thus shortening mobility chains on the market (cf. Harrison 1988; Schettkat 1992, 1996).

As those entering the labour market are among the most mobile groups on the market, it is likely that mobility levels among young people will be particularly affected. In contrast to direct EPL effects discussed before, the indirect EPL effect is also much more likely to reduce upward mobility chances, however. At entering the labour market, young people will not have completed the acquisition of work skills, and job experience alone will also continuously add to their productive capacities. To some extent, enhanced job skills will result in pay increases or promotions with individuals' current employer, yet in part, mobility to a different job with a different company might actually be more appropriate to achieve better matches of individual skills and job requirements, and to reap resulting economic gains. The usual findings of significant upward mobility associated with job mobility during the early career stages (e.g. Allmendinger 1989; LeGrand and Tåhlin 1998; Light and McGarry 1998; Keith and McWilliams 1995; Murphy and Topel 1992) are certainly consistent with a reading that job mobility might be a necessary ingredient to favourable individual career development. If true, however, the shortening of mobility chains associated with stricter EPL would

indirectly seem likely to reduce youth chances of upward mobility. In brief, the arguments may be summed up by the following hypotheses:

H1: Stricter employment protection legislation reduces job mobility rates among young people entering the labour market.

H1a: By stabilizing current employment relationships, stricter employment protection legislation reduces downward mobility risks associated with unemployment experiences.

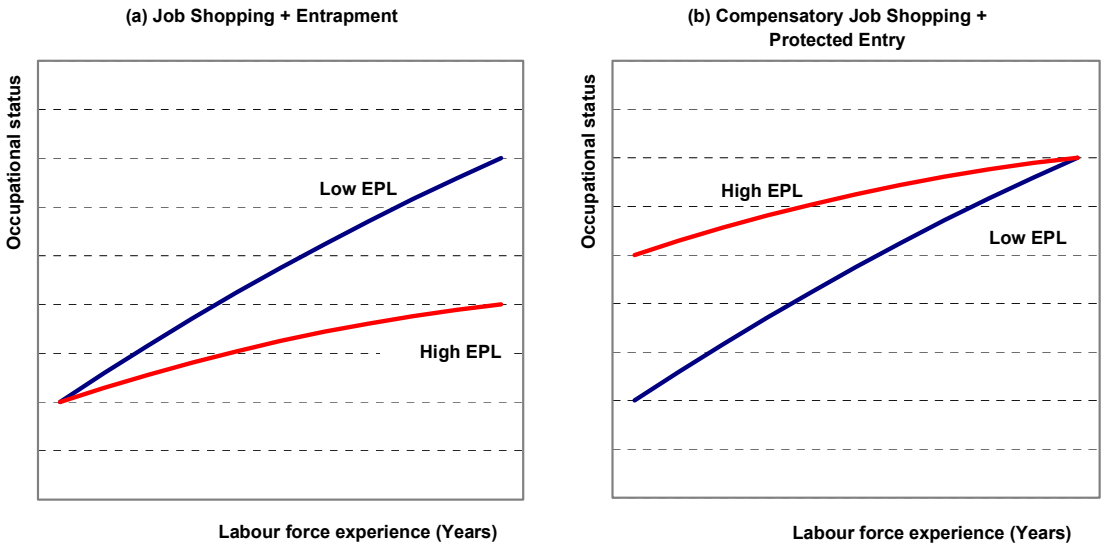
H1b: By reducing overall vacancy levels in the labour market, stricter employment protection legislation reduces mobility chains, and thus primarily reduces market entrants' upward mobility chances.

In fact, there are a number of reasons why the latter indirect EPL effect on upward mobility chances should empirically come to dominate the direct EPL effect on downward mobility risks. If, as argued before, young people are still building up human capital during their first years in the labour market, stabilizing current employment relationships might actually be counterproductive, and leading to youth entrapment in jobs increasingly inadequate to levels of individual human capital (Osterman 1995). While being effective in protecting individuals' current jobs, strict EPL might then in fact be detrimental to career dynamics because any reduction of overall turnover levels in the labour market will also imply reduced opportunity levels for upward mobility. Precisely this effect should be particularly pronounced at the early career stages that depend on cumulative mobility processes (e.g. Stevens 1997; Keith and McWilliams 1995). In consequence, experience-status profiles in strictly regulated labour markets should be flattened in comparison to those common in unregulated environments.

The two panels of Figure 1 illustrate this difference, yet they also point out that the implications of EPL effects on job mobility very much depend on whether there are EPL effects on the structure of entry labour markets over and above EPL effects on mobility. The standard assumption implicitly built into many dynamic studies is depicted by panel (a) to the left: if job mobility implies average status gains for those entering the labour market, higher mobility levels are likely to imply more favourable life-course outcomes – some job shopping may be vital to capture the full economic return to individual skills and capacities (e.g. Mincer 1986; Topel and Ward 1992). By dampening upward mobility chances, strict EPL then contributes to inadequate entrapment of youth in unsatisfactory early jobs.

The reverse assessment is true for the situation depicted in panel (b) to the right, however. If EPL affects the structure of labour market outcomes in the first place, and in particular if strict EPL tends to raise average status outcomes, then a steeper experience-status profile in less regulated markets might reflect no more than higher levels of catching-up for less favourable outcomes in first jobs. For standard economic models, this is no particularly arcane assumption. Standard economic

Figure 1 Employment protection and status mobility



theory would stipulate that raising employers' fixed labour costs – e.g. through requiring a higher level of EPL – tends to crowd out less productive jobs that generate lower expected revenue than these fixed costs (e.g. Ehrenberg and Smith 1994). If true, then

> *H2: By crowding out marginal employment, stricter employment protection legislation affects the structure of entry labour markets, and in particular raises status outcomes among young people entering the labour market.*

should hold for the low-skilled youth labour market in particular. While the underlying economic mechanism is well established both theoretically and empirically (e.g. Goux and Maurin 2000), I unfortunately know of no empirical study that produced supportive evidence in terms of occupational structures so far. Many existing studies draw on the hypothesis to explain EPL effects on unemployment rates, yet so far there is fairly mixed evidence for any EPL effect on either unemployment or the level of low-skilled, non-standard or marginal employment (e.g. van der Velden and Wolbers 2002; OECD 1999). In contrast to these macro level studies, some micro level analyses have recently cast at least some doubts on the scenario incorporated in panel (a), however: after controlling for both person- and job-specific heterogeneity, Light and McGarry (1998; cf. similar results in Murphy and Topel 1992), for example, have found that young people who underwent persistent mobility in the early years in the labour market had lower wage outcomes than less mobile young workers. Similarly, LeGrand and Tåhlin (1998) showed that returns to external job mobility tend to fall with the number of job changes.

3 Data and statistical methodology

To perform an empirical test of the assumed relationships between EPL, job mobility, and status attainment, the following analyses draw on data from the European Union Labour Force Survey (EULFS) 2000 combined with the EULFS 2000 Ad-hoc-module on school-to-work transitions. In contrast to the standard LFS questionnaire programme on current employment, unemployment and labour force participation (cf. Eurostat 1998), the LFS 2000 Ad-hoc-module had been specifically designed to generate additional data with respect to the transition from school to work in European labour markets. Conducted as an add-on to the standard LFS survey, the Ad-hoc module collects information on some key variables of interest in transition studies, notably social background information, information on level and type of education at first leaving education, the date of first leaving education and training, the initial search duration until a first significant job had been found as well as the duration and the occupation of this first significant job. The Ad-hoc-module has been implemented in 14 European Union countries excluding Germany, and six Eastern European countries (Hungary, Slovakia, Slovenia, Lithuania, Latvia, and Romania), yet the current analyses will be restricted to a set of 10 European Union countries (Belgium, Denmark, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal, and Sweden) and Hungary, for which reliable mobility data could be generated by combining the Ad-hoc-module data on first jobs with the core EULFS 2000 information on current employment (cf. Iannelli 2001 for a detailed evaluation of the data). Slightly varying across countries, the target sample for the EULFS Ad-hoc-module were all EULFS respondents that had left initial education and training within the last 5-10 years prior to the survey, and hence the following analyses will be restricted to this sample of recent entrants to European labour markets. In total, the dataset remaining for the current analysis includes some 40.000 observations with valid covariate information and information on either occupation of individuals' first or current job.

The key dependent variables of the following analyses will be the mobility rate out of individuals' first significant job, and the extent of status mobility between individuals' first and current job.[1] Job mobility will be defined as an employer change out of individuals' first significant job, where the latter includes all non-marginal jobs of at least about 20 hours per week that have lasted for at least six months. Status mobility, in turn, will be defined by the change in ISEI occupational status scores between individuals' first and current jobs (cf. Ganzeboom et al. 1996 on the ISEI scale); in the current dataset, ISEI scores have been defined at the level of three-digit ISCO88-COM occupations (cf. Eurostat 1998). As the Ad-hoc-module data does not include information on jobs other than this first significant job, there is no possibility of checking the consequences of this definition for the analysis. Focusing on first significant jobs rather than including information on any post-school jobs will to some extent reduce observed job mobility, in particular if school leavers are likely to hold unstable or low-hours first

[1] As the Ad-hoc-module does not collect full employment history data, the linked dataset only yields information on individuals' first significant jobs. Hence, the linked EULFS dataset used here does not give any flexibility in adjusting either the definition of first job, nor does it allow analysts to observe actual mobility processes between first significant and current jobs at the time of the survey interview.

jobs. As non-standard employment conditions should figure more prominently in less regulated labour markets, the linked EULFS data used here will tend to underestimate the cross-national variance of job mobility levels. If anything, the current paper should thus provide a rather conservative test of the effects of EPL on job mobility behaviour.

This reservation applies in particular since EPL effects will empirically be identified from the cross-national comparison between 11 European countries exhibiting quite distinct approaches to labour market regulation. In contrast to weakly regulated labour markets in the U.S., Britain or Ireland, many Continental and Southern European countries in particular have developed extensive EPL regulation during the post-war economic boom (Esping-Andersen and Regini 2000; Grubb and Wells 1993; OECD 1999), and despite the macroeconomic problems of the 1980s and 1990s, most countries have been quite reluctant to allow for greater flexibility in employment relations so far (cf. OECD 1999; Anxo and O'Reilly 2000). On the other hand, it is also important to note that the Scandinavian welfare states have historically relied to a considerably lesser degree on statutory EPL, but have rather focused on both encouraging and buffering adjustment processes on the labour market, while leaving issues of job security to collective bargaining processes (Anxo and O'Reilly 2000). Also, Eastern European countries have so far typically been wary to establish strict EPL measures during their transition from state socialism (OECD 1999). To parsimoniously capture these differences, the following analyses rely on summary index of EPL strictness developed in OECD (1999:66, Table 2.5). The OECD EPL index ranges from 0 to 4, where higher index scores imply stricter employment protection, and stricter regulation of the use of flexible forms of work arrangements. Low EPL countries like Britain or Ireland score 0.5, respectively 0.9 on the index, while the more regulated Southern European labour markets reach index scores up to about 3.5.

In addition to this institutional variable, all subsequent multivariate analyses will also control for individual gender, years of education, labour force experience, the duration of job search until the first significant job had been found, ISEI occupational status in that first job as well as (within-country mean-differenced) unemployment rates at the time of individual entry to the market. Compensatory mobility processes will be controlled for by including the within-education mean-differenced ISEI score of the first job, which indexes individuals' relative occupational attainment within particular levels of education and countries. More elaborate models will moreover include interaction terms between relative status achievement and the other individual-level covariates in order to provide a fuller description of the social structural conditions of compensatory mobility. As a sensitivity test of the EPL effects, the paper will also present results for models that include interaction terms between EPL strictness and the set of other individual-level covariates.

In terms of statistical modelling, the following analyses will present estimation results from a series of random-effects multilevel models. In contrast to more standard regression models, multilevel models are preferable in cross-national research since they incorporate the effects of unobserved heterogeneity between countries into the estimation. Even more importantly, multilevel models allow for informative hypothesis tests by adjusting the calculation of standard errors to the amount of

information present at different levels of the data (cf. Goldstein 1995; Longford 1995).[2] Depending on the nature of the dependent variable, a random-effect logit model will be used to address mobility rates out of the first job, while status mobility will be addressed from both a continuous random-effect linear model and a random-effect multinomial logit model that distinguishes between upward, lateral, and downward mobility. The test of EPL effects on the structure of youth labour markets will be conducted from a set of auxiliary, cross-sectional multilevel status attainment regressions.

4 Job mobility among entrants to the labour market

At a purely descriptive level, the EULFS data yield ample evidence of substantial job mobility during young peoples' first years in the labour market. Averaging over the 11 European countries in the sample, about 40% of all school leavers had left their first significant job within their first five years in the labour market. According to the cross-tabulation of job mobility rates by time since leaving education and training given in Figure 2, the proportion of young people who already experienced job mobility rises with increasing time in the labour market, although in a curvilinear, concave fashion. In their very first year in the labour market, about 10% of all leavers in Europe will already have left their first significant job, and by the second year in the labour force, this proportion has gone up to about 25%. Over the next few years, the proportion of leavers who left their first job rises to about one third by the fourth, and ultimately to about 40% by about five years in the labour force.

Apparently, there are important cross-national differences in mobility rates. In general, and consistent with the earlier hypotheses on EPL effects, mobility rates tend to be lowest in Southern Europe, with empirical mobility rates after five years in the labour force of about 10% in Greece, some 25% in Italy, and slightly above 30% in Spain. In contrast, mobility rates are relatively high in Northern European and Scandinavian countries: in Finland, Sweden, and Ireland in particular, between 50% and 60% of all entrants will have left their first significant job within the first four to five years in the labour market. At mobility rates of about 50% within the first five years in the labour market, France, Belgium, Portugal, and Hungary form an intermediate group of countries. The low mobility rate observed for the Netherlands represents a gross underestimation of actual job mobility flows that results out of a different (and stricter) definition of first significant jobs adopted in the Dutch data.[3]

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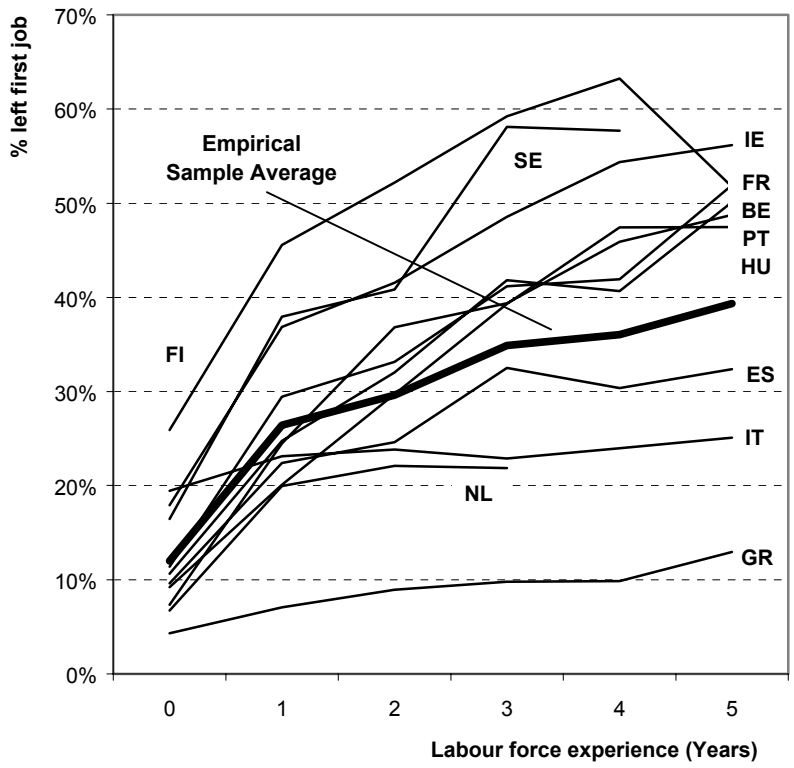
[2] Applying random-effect multilevel models is but one way of solving the problem of calculating appropriate standard errors for statistical hypothesis tests. Given the low N=11 of second level units in the current analyses, GEE methods or adjusting for the clustered nature of the data in the calculation of standard errors in standard regression models might actually be considered as providing more robust inferences (cf. Diggle et al. 1994). As the substantive implications of the analyses did not differ across these different methods, I chose to present the results from the random-effect models in the following. The random effect model has the additional feature of providing a variance estimate at the country level, so that the relative explanatory power of EPL strictness can be assessed immediately. Of course, this occurs against potential biases in that variance estimate given the small N of countries, and respective results will consequently have to be treated as tentative.

[3] In particular, the Dutch data refer to first significant jobs as jobs held for at least 12 months instead of six months as in the other countries. Additional comparability problems result from the fact that military service has been potentially included as first jobs in the Netherlands.

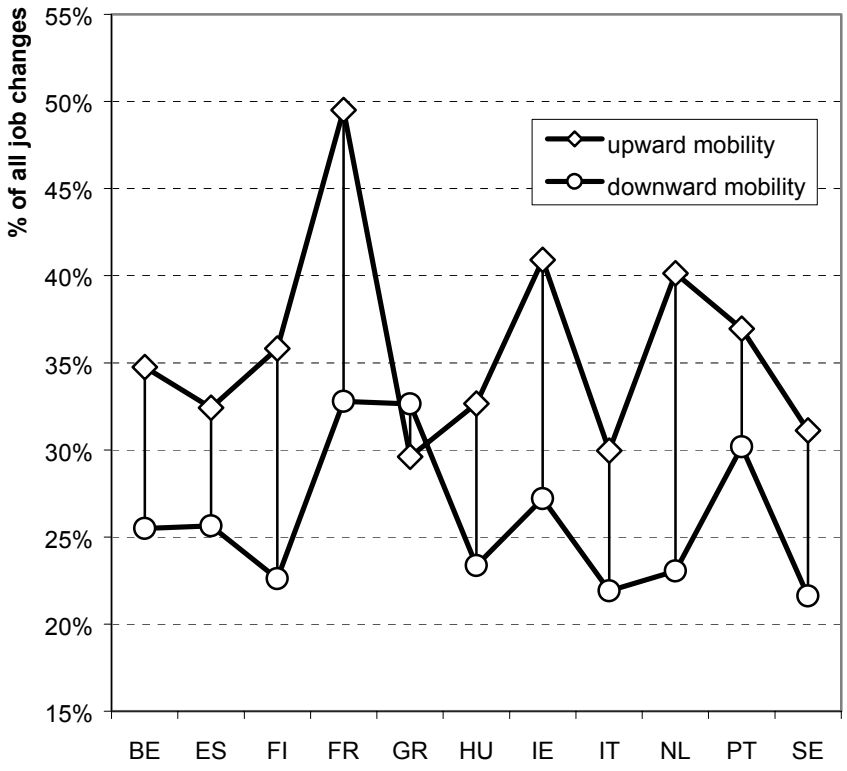
Figure 2 Mobility rates out of first jobs by time in the labour market, 11 European countries



Source: Linked EULFS 2000 and EULFS 2000 Ad-Hoc-Module on Transitions from School to Work.

As evident from Figure 3, job mobility among labour market entrants on average indeed tends to involve upward rather than downward status mobility: in all 11 European countries but Greece, the proportion of young people experiencing upward status moves exceeds the proportion of young people who had to face downward status mobility. Averaging across the 11 countries, slightly more than one third of all employer changes among market entrants had involved upward status mobility, yet only about one quarter implied downward status mobility. This differential of about 10 percentage points in fact holds in most of the countries in the sample. Also, the data imply that for a substantial proportion of young people employer changes do not involve any status mobility at all; in most countries, this group is indeed at least as large as, and often in fact larger than the proportion of upwardly mobile job changers. Compared across countries, it seems that school leavers in Ireland, France, and the Netherlands, but also in Hungary, Finland and Sweden experience particular positive mobility outcomes. On the one hand, the differential between upward and downward mobility rates is particularly pronounced in Ireland, France, and the Netherlands. Downward mobility risks, on the other, are particularly low for school leavers in Hungary, Finland and Sweden. If anything, it also seems to be the case that mobility chances are less favourable in more tightly regulated labour markets in Spain, Portugal, Italy, and Greece. At a first glance, observable country differences still appear fairly modest, however.

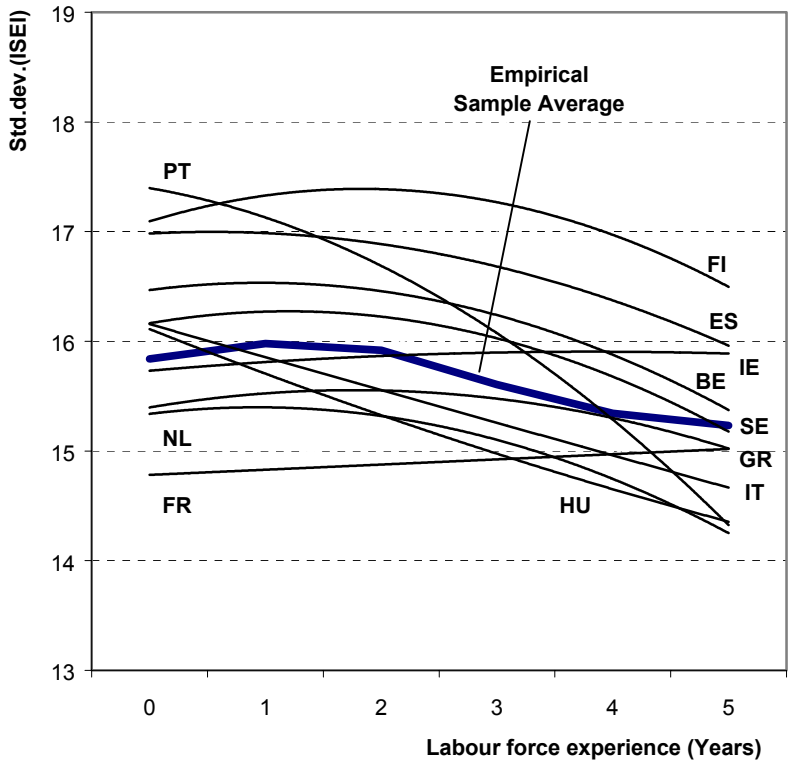
Figure 3 Status mobility from job changes, market entrants in 11 European countries



Source: Linked EULFS 2000 and EULFS 2000 Ad-Hoc-Module on Transitions from School to Work.

Also consistent with earlier assumptions, there is some descriptive evidence that upward status mobility processes partly imply compensatory mobility for low achievement in first jobs. As a straightforward descriptive indicator, Figure 4 shows the evolution of the variance of occupational status attainment over the first years in the labour market. Evidently, the variance of occupational status tends to fall by about one status score point over the first years in the labour force in the total sample. A similar relationship holds for most individual countries, although some exceptions are notable. For Portugal on the one hand, there is evidence of a much stronger reduction in the variance of occupational status than in any other country, while the data for Ireland and France show no evidence of decreasing variances on the other. While indicative of compensatory mobility processes in the first place, the cross-national differences observed on this particular indicator are not consistent in any immediately obvious sense with the EPL effects assumed in Section 2 above, however.

Figure 4 Variance of occupational status by time in the labour market, 11 European countries



Notes: Country-level estimates have been subject to logarithmic smoothing.

Source: Linked EULFS 2000 and EULFS 2000 Ad-Hoc-Module on Transitions from School to Work.

5 Employment protection and job mobility

Such aggregate statistics result from multiple generative mechanisms, however, and any serious assessment of the effects of employment protection legislation thus has to rely on more advanced multivariate regression methods that allow to simultaneously control for the effects of different individual, structural, and last but not least institutional determinants of mobility behaviour. To assess the effects of EPL on mobility behaviour in particular, I discuss empirical estimation results for three sets of multilevel regression models in the following. First of all, Table 1 below reports the estimation results for a series of mixed logit models of the probability of job mobility, whereas status outcomes conditional on job mobility will be assessed from two different analyses. Here, I combine evidence for both a continuous status change mixed linear regression model (Table 2) with results from a mixed multinomial logit model that contrasts the determinants of upward versus downward mobility dynamics (cf. Table 3).

5.1 Mobility rates out of first jobs

Turning to the incidence of employer changes first, Table 1 reports estimation results for four model specifications of substantively increasing complexity. Among the different specifications, model (1) gives a baseline estimation that includes gender, education, individual labour force experience, macroeconomic conditions, as well as search duration for the first significant job and the occupational status of the first job. Also, model (1) includes the relative occupational status within educational groups in order to measure compensating mobility processes. Augmenting this specification, model (2) adds a set of interactions between relative status and the other covariates so as to address different conditioning factors underlying compensatory job mobility. As the genuine test of institutional effects, model (3) then adds a main EPL effect to the specification of model (1), whereas model (4) enlarges model (2) by including interactions between EPL strength and the other model covariates on top of the covariate vector contained by model (2).

In the first place, this series of models generates some standard results on the determinants of job mobility behaviour among those entering the labour market. Consistent across the four different specifications, job mobility rates are lower among leavers with higher levels of education and leavers who secured high-status employment in their first job. Moreover, job mobility rates decline with duration until the first significant job, yet mobility rates rise in times of macroeconomic recession. The estimates also show that job mobility rates rise with labour force experience –in contrast to standard hazard rate models, however, this result has no interpretation in terms of duration dependence, yet merely reflects the fact that the proportion of young people who experienced a job change naturally rises over the first years in the labour force.[4] After controlling for these different factors, women tend to have somewhat higher mobility rates than men.

Moreover, the estimates also imply that mobility might be compensatory. In particular, the baseline model (1) shows the expected negative effect of relative status attainment in the first job within educational groups. The coefficient is clearly negative, implying that mobility rates tend to be lower among leavers with relatively high status achievement in their first jobs. That is, leavers with relatively favourable status outcomes in their first jobs tend to be less likely to change employers than leavers who found their first employment in occupations that are more inadequate to their levels of training. The additional interaction terms included in specification (2) stress that such compensatory mobility is particularly pronounced for young men, more highly qualified leavers, and increases over time in the labour market. There are no significant interactions with either the duration of initial job search or macroeconomic conditions at time of entry into the labour market.

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[4] In terms of survival analysis, the difference in interpretation arises from the fact that the logit models presented here can be seen as addressing the cumulative duration distribution $F(t)$ instead of the rate function $r(t)$. Obviously, however, a finding of $f(t)>0$ for all $t>0$ is not informative about duration dependence in $r(t)=f(t)/(1-F(t))$. Given that duration dependence is not a primary issue to this paper, and given substantial data problems in the date variables, it seemed more sensible to set up the model in terms of $F(t)$ rather than rates $r(t)$, however. In terms of covariate effects other than process time, there should be no appreciable differences between these different statistical descriptions of the same underlying event data anyway (cf. Alt et al. 2001).

Table 1 Determinants of mobility rate out of first significant job in 11 European countries, logit mixed model estimates

	(1)	(2)	(3)	(4)
Intercept	-0.048	-0.065	-0.578	-0.041
	(0.167)	(0.167)	(0.140)	(0.157)
Women	0.141**	0.137**	0.141**	0.148**
	(0.025)	(0.026)	(0.025)	(0.028)
Education	-0.072**	-0.073**	-0.073**	-0.078**
	(0.013)	(0.013)	(0.013)	(0.015)
Labour force experience	0.284**	0.284**	0.284**	0.304**
	(0.006)	(0.006)	(0.006)	(0.007)
Duration of job search	-0.029**	-0.029**	-0.029**	-0.032**
	(0.001)	(0.001)	(0.001)	(0.001)
Unemployment rate	0.108**	0.107**	0.108**	0.095**
at market entry	(0.007)	(0.007)	(0.007)	(0.008)
ISEI first job	-0.007**	-0.007*	-0.007*	-0.006
	(0.004)	(0.004)	(0.004)	(0.004)
ΔISEI first job | education	-0.011**	0.007	-0.011**	0.006
	(0.004)	(0.008)	(0.004)	(0.008)
- ΔISEI x women		0.009**		0.009**
		(0.002)		(0.002)
- ΔISEI x education		-0.001**		-0.001**
		($4.0e^{-4}$)		($4.0e^{-4}$)
- ΔISEI x experience		-0.001**		-0.001**
		($4.9e^{-4}$)		($4.9e^{-4}$)
- ΔISEI x job search		$7.3e^{-5}$		$7.9e^{-5}$
		($5.6e^{-5}$)		($5.6e^{-5}$)
- ΔISEI x unemployment		$4.7e^{-4}$		$5.1e^{-4}$
		($5.8e^{-4}$)		($5.8e^{-4}$)
EPL strictness index			-0.383**	-0.424**
			(0.145)	(0.194)
- EPL x ΔISEI				0.001
				(0.002)
- EPL x women				-0.050
				(0.037)
- EPL x education				0.008
				(0.008)
- EPL x experience				-0.044**
				(0.009)
- EPL x job search				0.007**
				(0.001)
- EPL x unemployment				0.026**
				(0.010)
σ^2(country)	0.222**	0.221**	0.141**	0.159**
	(0.087)	(0.087)	(0.057)	(0.065)
Log-likelihood	-22,537	-22,517	-22,537	-22,476

Notes: N=34.687; asymptotic standard errors in parentheses; statistical significance levels at ** p<.05, and * p<.10, respectively.

Source: Linked EULFS 2000 and EULFS 2000 Ad-Hoc-Module on Transitions from School to Work.

In terms of EPL effects, specification (3) provides support for the expectation that stricter EPL indeed lowers mobility rates among market entrants (H1), which presumably occurs through dampening EPL effects on vacancy rates, and thus labour market dynamics more generally. Despite the fact that the analysis is based on merely 11 country cases, the EPL parameter estimate of –0.38 is statistically significant at conventional levels. In addition, there is evidence from the interaction terms included in specification (4) that EPL effects are completely uniform across different leaver groups or over different stages of labour market integration. On the one hand, there seems to be little evidence that EPL affects gender or educational differentials in mobility behaviour to any great extent. Also, EPL does not significantly dampen compensatory mobility behaviour (beyond a fall in mobility levels per se): the interaction of EPL and relative status attainment shows the correct positive sign, yet fails to reach both substantively and statistically significant levels. In contrast, EPL does significantly affect the relation between experience and mobility. Compared to high EPL countries, low EPL countries tend to show steeper slopes in the proportion of exits from first jobs over the first years in the labour market, which implies a more extended stage of turbulence and mobility at the early career stage than is true for high EPL countries. Also, higher levels of EPL tend to dampen the association between duration of initial job search and mobility, yet amplify the relation between macroeconomic conditions and mobility among market entrants. With due reservations, the country level variance estimates of both models finally suggests that country differences in EPL indeed have a substantial role for the explanation of cross-national variation in mobility rates more generally: judged from the drop in σ^2 between specifications (1) and (3), country differences in EPL might actually account for about one third of the total cross-country variance in the current dataset.

5.2 Employer change and status mobility

Having discussed the empirical evidence for determinants of mobility rates, what then determines job mobility outcomes in terms of status mobility, and is there a role for EPL effects in particular? Exactly mirroring the presentation in Table 1 above, Table 2 reports estimation results on the determinants of status mobility between first and current jobs conditional on employer changes. Interestingly, the baseline model (1) yields hardly any effects for standard stratification variables: neither gender, nor levels of education, nor the occupational status in the first jobs allow to explain whether or not job mobility among entrants to the labour market is associated with status gains or losses. There are positive effects of time in the labour force, however, although the structure of the EULFS data unfortunately does not allow to assess whether the observed positive effect results from either more rewarding job changes at slightly later career stages or from the higher average number of job changes at higher levels of labour market experience. Also, it seems to be the case that school leavers with long initial search durations for their first job also tend to have worse mobility outcomes once they leave this first job, so that initial disadvantages tend to cumulate over the early career stages. On the other hand, status mobility outcomes tend to improve if young people found their first job during times of macroeconomic difficulty, which again suggests a compensatory element in young peoples' job mobility behaviour.

Table 2 Determinants of status mobility out of first significant job in 11 European countries, linear mixed model estimates

	(1)	(2)	(3)	(4)
Intercept	-0.303	0.064	0.356	-0.164
	(0.427)	(0.414)	(0.415)	(0.481)
Women	-0.142	0.021	-0.139	0.090
	(0.149)	(0.144)	(0.148)	(0.151)
Education	-0.046	-0.037	-0.084	-0.027
	(0.068)	(0.066)	(0.065)	(0.073)
Labour force experience	0.247**	0.212**	0.251**	0.222**
	(0.031)	(0.030)	(0.031)	(0.034)
Duration of job search	-0.027**	-0.021**	-0.026**	-0.022**
	(0.003)	(0.003)	(0.003)	(0.004)
Unemployment rate	0.123**	0.092**	0.119**	0.084**
at market entry	(0.037)	(0.036)	(0.036)	(0.038)
ISEI first job	0.018	0.023	0.029	0.023
	(0.020)	(0.019)	(0.019)	(0.020)
ΔISEI first job | education	-0.313**	-0.275**	-0.324**	-0.276**
	(0.021)	(0.041)	(0.020)	(0.041)
- ΔISEI x women		-0.009		-0.009
		(0.012)		(0.012)
- ΔISEI x education		0.004*		0.004*
		(0.002)		(0.002)
- ΔISEI x experience		-0.061**		-0.061**
		(0.003)		(0.003)
- ΔISEI x job search		0.007**		0.007**
		($2.6e^{-4}$)		($2.6e^{-4}$)
- ΔISEI x unemployment		-0.011**		-0.011**
		(0.003)		(0.003)
EPL strictness index			-0.537**	0.336
			(0.143)	(0.650)
- EPL x ΔISEI				-0.032**
				(0.009)
- EPL x women				-0.350*
				(0.205)
- EPL x education				-0.039
				(0.042)
- EPL x experience				-0.042
				(0.050)
- EPL x job search				0.004
				(0.005)
- EPL x unemployment				-0.037
				(0.047)
σ^2(country)	0.136**	0.118*	0.051	0.062
	(0.076)	(0.074)	(0.050)	(0.059)
Log-likelihood	-49,505	-49,079	-49,501	-49,081

Notes: N=13.530; asymptotic standard errors in parentheses; statistical significance levels at ** p<.05, and * p<.10, respectively.

Source: Linked EULFS 2000 and EULFS 2000 Ad-Hoc-Module on Transitions from School to Work.

The parameter estimate for the ΔISEI variable indeed emphasizes that relative status attainment in the first job is a crucial determinant of status mobility in the early years in the labour market. The more favourable one's own first job had been in comparison to the average status outcome of entrants with similar levels of training, the less likely it is that employer changes will lead to (further) status gains. Differently put, catching-up for low achievement in the first job is an important aspect of status mobility among market entrants. The interaction terms estimated in specification (2) additionally stress that catching-up tends to become more important both over the first years in the labour force and if market entry occurred in times of high unemployment levels. There are some indications that compensating status mobility is less pronounced among highly qualified leavers and among leavers with long initial search durations.

Closely according to the theoretical expectations, model specification (3) then provides evidence of a substantial negative EPL effect on status mobility – which confirms the earlier expectation that negative EPL effects on upward mobility (H1b) will dominate positive EPL effects on downward mobility risks (H1a) for a sample of entrants to the labour force. As assumed, there are two sources of lower upward mobility chances of school leavers in more strictly regulated labour markets: first of all, young people tend to change jobs less often in more regulated markets, and thus structurally tend to realize smaller average status gains in more stable environments. Secondly, when school leavers in more regulated environments change employers, they even tend to face less favourable status mobility outcomes than leavers in more flexible labour market contexts. As in the earlier analysis of mobility rates, the negative EPL effect of –0.54 ISEI score points per EPL index score point is both substantively and statistically significant even in this small sample of countries. Compared to the job mobility models, the country-level variance estimate suggests an even more important role of EPL in explaining cross-national differences in terms of status mobility between European countries: comparing again the drop in σ^2 between specifications (1) and (3), respectively (2) and (4), country differences in EPL strictness might actually account for up to 50%-65% of the total cross-national variance in status mobility.

In terms of substantive EPL effects, the evidence on interaction terms in model (4) furthermore stresses that strict EPL primarily works via limiting (further) upward status mobility among those with relatively favourable outcomes in first jobs. To some extent strict EPL thus tends to restrict cumulative advantages that translate from favourable first into even more favourable subsequent jobs. On the other hand, the model yields some evidence that strict EPL might be especially detrimental to upward mobility chances of young women. The reasons for this finding are not immediately apparent from this analysis, yet the result might be a natural starting point for further research. Other than these results, the estimates do not provide any evidence for further important interactions between EPL and one of the variables included in the analysis.

Very much as a check on these results, Table 3 below presents additional evidence on the determinants of status mobility that replaced the continuous mobility measure used so far by a simpler ordinal measure of status mobility. More specifically, Table 3 has the results of two mixed multinomial

Table 3 Determinants of status mobility out of first significant job in 11 European countries, multinomial logit mixed model estimates

	(1)		(2)	
	upward	downward	upward	downward
Intercept	0.424	0.245	0.518	-0.042
	(0.261)	(0.226)	(0.290)	(0.268)
Women	0.155**	0.179**	0.209**	0.091
	(0.057)	(0.060)	(0.062)	(0.066)
Education	-0.023	-0.006	-0.021	-0.004
	(0.030)	(0.031)	(0.035)	(0.036)
Labour force experience	0.070**	0.021	0.092**	0.024
	(0.014)	(0.015)	(0.017)	(0.017)
Duration of job search	-0.004**	-0.001	-0.005**	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Unemployment rate	0.042**	0.038**	0.036*	0.027
at market entry	(0.017)	(0.018)	(0.020)	(0.020)
ISEI first job	-0.021**	-0.026**	-0.027**	-0.018*
	(0.009)	(0.009)	(0.009)	(0.009)
ΔISEI first job | education	-0.056**	0.062**	0.007	0.164**
	(0.009)	(0.009)	(0.022)	(0.020)
- ΔISEI x women			0.016**	0.009
			(0.006)	(0.006)
- ΔISEI x education			-0.005**	-0.009**
			(0.001)	(0.001)
- ΔISEI x experience			0.002*	0.004**
			(0.001)	(0.001)
- ΔISEI x job search			$1.5e^{-5}$	$-2.4e^{-4}$
			($1.8e^{-4}$)	($1.8e^{-4}$)
- ΔISEI x unemployment			0.001	$9.2e^{-5}$
			(0.002)	(0.002)
EPL strictness index	-0.164	0.035	0.169	0.007
	(0.236)	(0.165)	(0.355)	(0.327)
- EPL x ΔISEI			-0.014**	0.003
			(0.004)	(0.004)
- EPL x women			-0.204**	-0.053
			(0.076)	(0.082)
- EPL x education			-0.009	0.011
			(0.017)	(0.018)
- EPL x experience			-0.043**	-0.038*
			(0.020)	(0.022)
- EPL x job search			0.003	0.003
			(0.002)	(0.003)
- EPL x unemployment			0.020	0.012
			(0.022)	(0.024)
σ^2(country)	0.371	0.170	0.391	0.181
	(0.628)	(0.234)	(1.713)	(0.580)
Log-likelihood	-16,846		-15,632	

Notes: N=13.530; asymptotic standard errors in parentheses; statistical significance levels at ** p<.05, and * p<.10, respectively.

Source: Linked EULFS 2000 and EULFS 2000 Ad-Hoc-Module on Transitions from School to Work.

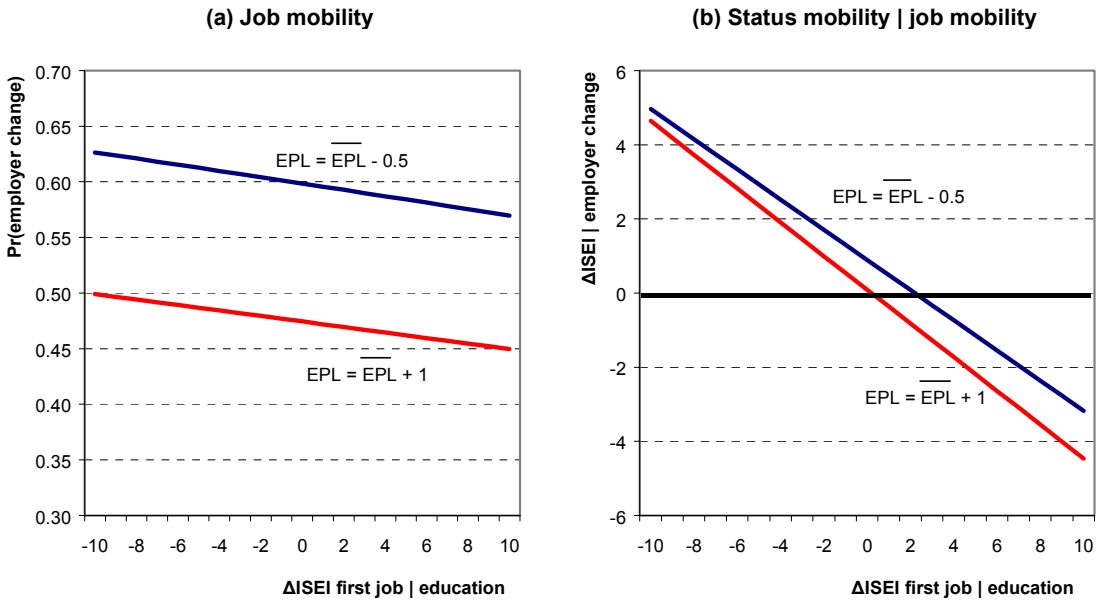
logit models that distinguish between upward, lateral, and downward status mobility risks. The two model specifications reported use lateral status mobility as the reference category, and in substantive terms correspond to models (3) and (4) of the earlier analyses. Without entering into all detail, the results for the multinomial model are generally quite consistent with those gained from the simple linear status change models discussed before. Most importantly in the context of the current paper is the result that strict EPL is found to have virtually no effect on downward status mobility (H1a), while there is some evidence of a negative EPL effect on upward mobility chances (H1b). In contrast to the linear model, however, the respective EPL effect is no longer statistically significant in the multinomial analysis. The multinomial models are also fully consistent with the linear status change model in terms of EPL interaction effects. Again, the estimates provide evidence that EPL tends to limit upward status mobility of leavers with relatively high status attainment in their first job, and that women tend to have lower upward mobility chances in more regulated markets. In addition, the multinomial model also yields evidence of smaller upward mobility chances in the longer run as the experience gradient of upward mobility chances turns out to be flatter in more highly regulated contexts. Estimates in specification (4) are also very clear about the result that neither EPL strictness nor any interaction term particularly affects downward mobility risks of young people in their first few years in the labour market.

5.3 Marginal EPL effects

In discussing the empirical evidence, the fact that EPL effects on mobility appeared quite substantive has been stressed at several points. To provide a more accessible illustration of the empirical magnitudes of EPL effects than inherent in logit coefficients in particular, Figure 5 presents marginal EPL effect estimates on both job mobility rates and status mobility given employer change. Both panels represent the marginal EPL effects from a comparison between a context with an EPL index score of 0.5 points below the average EPL index in the sample and a second environment that features an EPL index score of 1 point above the average EPL score in the sample. In substantive terms, these simulations roughly represent the contrast between the Scandinavian countries (low EPL) and Southern Europe (high EPL). The respective marginal EPL effects are calculated at the mean of all other variables in the models, and are presented here by relative status attainment in the first job in order to allow for an assessment of EPL effects on compensatory mobility behaviour.

Panel (a) of Figure 5 thus refers to job mobility rates out of the first job by some four years after leaving education and training. Clearly, there are substantial direct EPL effects on the likelihood of having left one's first job by that time: controlling for a set of core covariates, and allowing for unmeasured heterogeneity between countries, higher EPL strictness in Southern Europe are estimated to lower job mobility rates by about 12 percentage points as compared to the Scandinavian-type labour market with more modest EPL regulations. Evidently, the association between relative status attainment and mobility is hardly affected by EPL strictness in itself, yet against the background

Figure 5 - Marginal EPL effects on job mobility, by relative status achievement in the first job



Notes: based on model specifications (4) of Tables 1 and 2.

of average status gains through mobility, the reduction in overall mobility rates alone should reduce young peoples' upward status mobility. Panel (b) moreover illustrates the EPL effects on status mobility described above. Again, mobility is partly compensatory, so that relative underachievers in the first job tend to have more favourable subsequent mobility outcomes. Here, EPL strictness would seem to affect compensating aspects of mobility more directly. Evidently, EPL has relatively small effects on catching-up behaviour among those with relatively unfavourable status outcomes in the first job. However, EPL strictness does significantly affect status mobility outcomes in the middle and upper tails of the initial status distribution. In particular, low EPL strictness tends to lead to improved status mobility for those who already had favourable outcomes in the first job, and hence generate stronger patterns of cumulative advantage in the labour market. These cumulative effects are apparently contained more strongly by stricter EPL regulation.

6 Does mobility pay off? Employment protection and the structure of labour markets

EPL effects on mobility behaviour are but one aspect in the overall evaluation of the role of labour market regulation and individual labour market outcomes. As argued before, a fuller picture of EPL effects on youth labour market integration requires to assess potential EPL effects on the structure of (youth) labour markets over and above the EPL effects on career dynamics discussed

up to now. The final section of this paper attempts to provide some evidence on such structural effects by presenting estimation results for some simple cross-sectional status attainment models. In particular, Table 4 holds the results for a series of straightforward linear mixed models of occupational status in the full cross-sectional sample, i.e. describing the structure of status outcomes for young people having entered European labour markets in the 1990s. In the following, I discuss the results for status outcomes in both individuals' first significant and current jobs. For both dependent variables, I present results from two different model specifications, one including an EPL main effect only, and a more involved specification that includes interaction terms between EPL and other covariates (i.e. specifications equivalent to models (3) and (4) in the earlier analyses).

Similar to the dynamic analyses, these estimates yield a number of standard results: occupational status outcomes clearly rise with both increasing levels of education and increasing time in the labour force. Controlling for other factors, young women also tend to have more favourable status outcomes than young men, while longer duration of the initial job search tends to have negative consequences for status outcomes. Moreover, there are strong negative effects of unfavourable macroeconomic conditions on status attainment, with high current unemployment rates significantly lowering status outcomes for market entrants.[5] According to the evidence for status attainment in current jobs, there is also evidence for significant lagged effects of macroeconomic conditions at labour market entry on later status outcomes. Still, the effect size for lagged macroeconomic conditions is only about one third of the effect of current conditions.

In terms of EPL effects, the baseline models for both status attainment in individuals' first and current jobs yield some evidence of a positive EPL main effect on status attainment (H2). The effect size of some +0.7 to +0.8 ISEI score points per EPL index point is quite significant in substantive terms, yet in both cases, the coefficient estimate does not pass standard statistical significance levels due to high standard error estimates. Actually, a second reason for this result is revealed by model specifications that include EPL interaction terms. For both dependent variables, there is consistent evidence of a negative interaction effect between EPL and education, which implies that positive EPL effects are most pronounced in the low-skill sector. Similar to Figure 5 above, Figure 6 illustrates the effect sizes for the marginal EPL effects contrasting Scandinavian-type low EPL strictness to a Southern European level of EPL strictness. The differences in slopes are readily apparent, and positive EPL effects on status attainment among the least qualified are immediately obvious. At the level of lower secondary education, the models estimated here imply that leavers in more strictly protected labour markets on average attain jobs in occupations that score about three to four ISEI score points higher than under low EPL strictness. This effect is far from trivial, representing a full 10% average status increase for the lowest qualified in more protected markets. This differential declines with increasing level of education, however, and finally vanishes at

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[5] As far as status attainment in the first job is concerned, unemployment rates at market entry are of course the *current* unemployment rate at that stage.

Table 4 EPL and occupational status among market entrants in 11 European countries, linear mixed model estimates

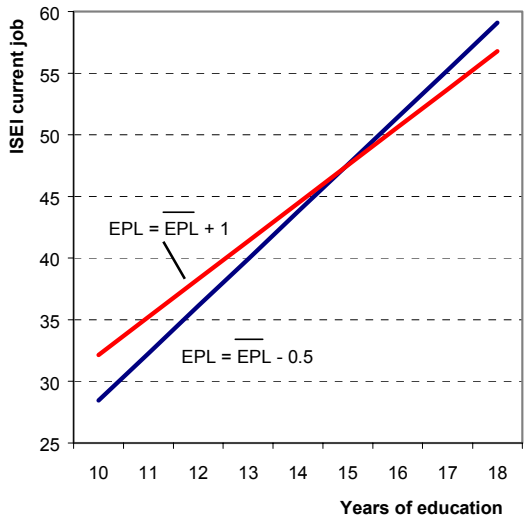
	First significant job		Current job	
	(1)	(2)	(1)	(2)
Intercept	-2.015*	-5.439**	-3.808	-7.326**
	(1.038)	(1.085)	(2.041)	(2.130)
Women	0.998**	1.106**	0.641**	0.735**
	(0.123)	(0.136)	(0.128)	(0.143)
Education	3.260**	3.482**	3.347**	3.358**
	(0.022)	(0.028)	(0.023)	(0.030)
Labour force experience	-	-	0.325**	0.330**
			(0.028)	(0.033)
Duration of job search	-0.004*	-0.004	-0.023**	-0.018**
	(0.002)	(0.003)	(0.003)	(0.004)
Unemployment rate	-0.206**	-0.191**	-0.071**	-0.065*
at market entry	(0.033)	(0.035)	(0.035)	(0.039)
Current unemployment rate	-	-	-0.261	-0.246
			(0.667)	(0.691)
EPL strictness index	0.800	7.670**	0.718	7.900**
	(1.181)	(1.309)	(1.815)	(1.969)
- EPL x women		-0.243		-0.216
		(0.181)		(0.194)
- EPL x education		-0.471**		-0.499**
		(0.037)		(0.040)
- EPL x experience		-		-0.022
				(0.047)
- EPL x job search		-0.017**		-0.010**
		(0.004)		(0.005)
- EPL x unemployment		-0.041		-0.018
rate at market entry		(0.044)		(0.049)
σ^2(country)	9.631*	9.938*	16.256	17.449
	(5.476)	(6.710)	(16.882)	(38.327)
Log-likelihood	-161,709	-161,634	-152,154	-152,085

Notes: N=40.173 (first job), respectively N=37.637 (current job); asymptotic standard errors in parentheses; statistical significance levels at ** p<.05, and * p<.10, respectively.

Source: Linked EULFS 2000 and EULFS 2000 Ad-Hoc-Module on Transitions from School to Work.

the post-secondary level. At the level of university graduates there is evidence of an even negative EPL differential to the effect that university graduates in highly protected labour markets tend to achieve somewhat lower average status outcomes than university graduates in more flexible labour market environments. This effect would indeed be consistent with the analyses of Section 5 if it is argued that university graduates are most likely to benefit from cumulative advantage, which strict EPL has been shown to diminish. Before drawing firm conclusions, however, it might be necessary to allow for richer functional forms of the interaction term in order to exclude the possibility that the present finding results out of the imposed linearity restrictions.

Figure 6 Marginal EPL effects on occupational status, by levels of education



Notes: based on model specification (4) of Table 4.

7 Summary and conclusions

By addressing the role of labour market regulation for job mobility behaviour, the current study has attempted to complement the recent sociological literature on school-to-work transitions that has almost exclusively been interested in the structure of education and training systems as a key institutional determinant of youth labour market integration. Along the lines of these earlier studies relating the specificity of training to the extent of turbulence in the early career stages, results obtained in the current paper emphasize that strict employment protection legislation also tends to reduce job mobility rates among young people entering the labour market. The respective effects are far from trivial empirically: according to the estimation results, the difference in EPL strictness between a Southern European and a Scandinavian-type labour market implies a full 12 percentage points lower probability of having left the first job within roughly the first four years on average – net of any other individual and country-level factors.

What may come as more surprisingly, however, is the empirical evidence for strict employment protection mainly reducing young peoples' upward mobility chances. This is certainly in stark contrast to the direct EPL effects of stabilizing workers' current employment relationship, which imply a reduction in downward mobility risks associated with the incidence of unemployment. It has been argued here, however, that status attainment among young people in the early career stages is much more affected by indirect EPL effects on the dynamics of labour markets more generally. As strict EPL reduces turnover levels in the total work force, this tends to reduce the level of available vacancies on the market. As most of those vacancies would imply upward mobility chances for market entrants, the shortening of mobility chains achieved by strict EPL indirectly reduces the

availability of (relatively attractive) job opportunities for school leavers. In consequence, job mobility in more tightly regulated labour markets is associated with lower occupational status gains on average, and experience-status profiles will thus tend to be flatter in more strictly protected labour market contexts.

One aspect of this flatter experience-status profile induced by strict EPL is in fact the relatively stronger entrapment of young people in unsatisfactory first jobs. Compensatory job mobility of relative low achievers in the first job catching-up with average status attainment is an important aspect of mobility processes among those entering the labour market, and stricter EPL apparently leads to lower chances of subsequent upward mobility also for those with below average occupational outcomes. Interestingly enough, there is more to EPL effects on job mobility than merely reducing catching-up. More specifically, strict EPL apparently also tends to reduce the variance of status attainment by restricting cumulative advantages among young people achieving relatively favourable outcomes in first jobs. On top of lower probabilities of job change in more strictly regulated markets, precisely those with relatively favourable initial outcomes have been found to experience less favourable subsequent status mobility in more regulated labour markets. The mechanisms behind this finding certainly need to be addressed in more detail, yet the evidence would seem to be consistent with a reading that part of the advantages of high achievers might be that higher-status jobs tend to generate cumulative advantages through higher levels of networking or a wider applicability of job skills. If some of this value added can only be reaped through job mobility, low opportunity levels induced by EPL would be effective in dampening the operation of cumulative advantages.

Finally, these dynamic effects of employment protection have to be seen in conjunction with EPL effects on the structure of youth labour markets. Here the empirical analysis provided clear evidence in favour of standard economic theory: the marginal rise of fixed labour costs associated with strict EPL indeed tends to put a floor on job structures in more highly regulated markets. In general, the job structure is shifted upwards in more regulated markets, and this applies to the low-skilled labour market in particular. At the level of lower secondary education, the current paper estimated school leavers in more strongly regulated Southern European countries to achieve a 10% higher occupational status level on average as compared to outcomes under regulation levels common in Scandinavian labour markets. For low-skilled leavers, total EPL effects on status attainment thus tend to be positive: positive EPL effects on job structure by far outweigh negative EPL effects on upward mobility – job shopping typically does not compensate low-skilled leavers for initial failures to achieve relatively adequate job matches. By crowding out low-skill jobs in the youth labour market, strict EPL moreover also tends to reduce the necessity of compensatory mobility in general, given that job levels in first jobs tend to be more favourable in more strictly regulated labour markets. However, there is some evidence that EPL effects tend to differ for high-skilled leavers. At the top end of the skill distribution, EPL maybe even leads to slightly lower levels of occupational attainment, in particular because job histories among highly qualified leavers depend more strongly on job mobility and resulting cumulative advantages that are subdued by low turnover levels in more strictly regulated labour markets.

In sum, the analyses thus yield a fairly positive assessment of the role of employment protection legislation for youth labour market integration, at least and in particular so at the level of low-skilled leavers. On the other hand, the current analyses have not addressed potential EPL effects on youth unemployment; if strict EPL indeed tends to crowd out low-skill, marginal employment, high unemployment rates among the least qualified leavers may actually be the flip side of the relatively favourable status attainment effects emphasized here. A thorough empirical analysis of this relation is certainly required since its outcomes may strike a less favourable balance in assessing the total effects of EPL on school-to-work transitions. Against the background that the current analyses have been intended to complement existing cross-national research that focuses on the impact of education and training systems, it would also be necessary to systematically address the relative explanatory power of training versus labour market institutions at some stage. Unfortunately, this test could not be run in the present paper due to the absence of data from countries operating strong vocational training systems, and apprenticeship systems in particular. Still, the estimates obtained in this paper imply that cross-national differences in EPL strictness might account for about one third of the cross-national variance in mobility rates, and even more than half the cross-national variance in status mobility among the 11 European countries in the sample. If these results stand the test of extended analyses that incorporate the structure of training systems, sociological research on school-to-work transitions would be well advised to more seriously consider the effects of labour market regulation among its set of institutional predictors.

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Ethnic Inequalities at Labour Market Entry in Belgium and Spain

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Abstract

While the labour market integration of immigrant youth has increasingly received attention in recent years, due to the lack of appropriate data comparative studies are scarce until now and theoretical reasons for persistence of ethnic disadvantages often remain unclear. In this paper we try to enhance the understanding of ethnic inequalities making use of a new dataset made available by Eurostat, the European Union Labour Force Survey (EULFS) 2000 ad hoc module on school-to-work transitions. Using longitudinal information on labour market entry and event history techniques we try to disentangle several mechanisms leading to ethnic disadvantages and to compare their empirical relevance between Belgium and Spain. Most importantly, it can be shown that non-EU youth are disadvantaged with respect to higher status jobs in both countries. While in Belgium this seems to be mainly due to inferior educational qualifications and labour market discrimination, in Spain in addition to labour market discrimination a notable self-selection process seems to take place. Besides this central finding the paper contains detailed analyses on access to medium and lower status jobs as well as on the general transition patterns from school to work in both countries.

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1 Introduction

Immigrants and their descendants constitute a substantial proportion of population in nearly all European Union countries. As occupational attainment has proved to be a key factor of their integration into a host society, the success of immigrants in the labour market is one of the most important topics of political and public discussions and, therefore, one of the most central tasks for scientific research. Although great strides have been made towards understanding immigrant structural assimilation in several countries, current state of research is far from being satisfactory. On the one hand, comparative quantitative studies are scarce until now, on the other hand the basic theoretical mechanisms accounting for ethnic inequalities in the labour market often remain rather unclear, although many analyses are very valuable from a descriptive point of view.

Mainly, both limitations are due to the lack of appropriate data. To study ethnic inequalities in labour markets large unbiased samples of immigrant population are necessary. Therefore, data sets stemming from the official statistical sources are in principal well suited all the more as they usually contain detailed information on the situation and the performance in the labour market. However, it is often questionable whether the information gathered in different countries is really comparable. Furthermore, these data sets usually do not contain information on variables that are relevant for a theoretical understanding of the situation of ethnic minorities, like social origin or host-country-specific skills and knowledge.

In this paper we try to enhance understanding of ethnic inequalities in the labour market making use of a new dataset made available by Eurostat, the European Union Labour Force Survey (EULFS) 2000 ad hoc module on school-to-work transitions. This dataset provides a core set of substantively important variables on school-to-work transitions and is linked to the general EULFS, valuable for large-sample sizes and standardized survey design. The peculiarity of the module is that – besides containing measures for social origin – it endows with a longitudinal perspective on individual's labour market entry by offering measures of the incidence of job search periods and their duration, duration and occupation of the first job which all together allow assessing processes and labour market dynamics at the early career stages. The focus on the time dependent experiences of young immigrants (aged 15-35) during the initial years of their employment careers and particularly on their first significant job provides some direct and indirect tests of important mechanisms of ethnic inequalities which are not possible with other data sets. In addition to that, the data allow a comparative analysis of ethnic inequalities in two countries, Belgium and Spain, different in the context of immigration.

In Section 2 we briefly describe past research on country specific school-to-work transitions and processes of immigrant integration. General theoretical mechanisms which may account for ethnic inequalities in the labour market are further pursued. Then, data, methods and variables are described in detail (Section 3). The following section (4) provides results of the event history analysis of the entry into the first significant job in Belgium and Spain. Major findings are summarized and discussed in Section 5.

2 Theory and past research

2.1 School-to-work transitions and ethnic inequalities in Belgium and Spain

School-to-work transitions: institutional settings

It was found elsewhere (Allmendiger 1989; Mueller/Shavit 1998; Hannan et al 1999) that institutional settings, and particularly educational and training systems and their link to labour market entry, greatly influence individual transitions from education to a working life. Both Belgium and Spain have been classified as countries with a school-based training in the recent OECD publications (Clasquin et al 1998; OECD 1998). Due to the rapid expansion of the Spanish university system (Iannelli/Soro-Bonmati 2000; Köhler 1999), the proportion of young people with tertiary education in Spain increased and reached similar levels as in Belgium. Nevertheless, Spain still outnumbers Belgium in the proportion of the least educated youth (OECD 1999). Relatively loose link between education and work in both countries is manifested in high unemployment rates among young school graduates. According to the OECD (1998) in 1996 30 per cent of Belgian youth were unemployed one year after leaving education, while almost half of Spanish youth were unemployed with women and less-educated being particularly disadvantaged (see also Planas 1999). Furthermore, unlike in other European countries where education protects against unemployment, in Spain and in the rest of Southern Europe the relative advantage of education is far lower. Reyneri (2001) claims that a lot of the Spanish jobless are educated youths, who have high professional and social aspirations and are able to wait in order to enter highly qualified and rewarding jobs.

Belgium: Persistence of ethnic inequalities

Like other Western European countries Belgium used to import foreign labour from the Mediterranean countries, mostly Italy as well as from Turkey and Morocco, to meet demands of the booming economy up until the early 1970s. After the oil crisis the entry of third-country nationals has been limited to family members of those settled in the country earlier or to asylum seekers and refugees. Belgium with a number of EU institutions and other international organisations' headquarters attracts EU and other nationals from the Western countries, which are as a rule highly educated and qualified. The integration of Turkish, Moroccan and to certain degree Italian immigrants and their offspring however causes concern, since these communities are not only marked by the greatest educational disadvantage and residential segregation, but also by the highest rates of unemployment, alongside with more substantial over-representation in unskilled manual work (Phalet 2002; SOPEMI 2000; Cruz 1999; Ouali/Rea 1999).

Ouali and Rea (1999) summarizing previous research, point out to the differences between indigenous population and ethnic minorities in the access to jobs. The dominant pattern among Belgians and EU foreigners is rapid integration and stabilization in conventional employment, i.e. long-term contracts, shortly after leaving education, while young people of non-EU origin, as a rule, face long-term unemployment. For ethnic minorities the main problem is not an entry into the stabile

employment career but rather finding a first job, the situation being extremely worrisome for a large majority of young ethnic minority women, who do not manage to find their first jobs during the two years after leaving education. According to Neels (2000), Moroccan and Turkish school-leavers tend to take up blue-collar occupations after leaving school. Their educational attainment, particularly among Moroccan youth, however allows them to seek white-collar employment in clerical and service jobs.

Ouali and Rea (1999) offer a three-fold explanation to the persistence of ethnic inequalities in Belgium. One reason is the reproduction of socio-economic positions of their parents by the second-generation Moroccan and Turkish immigrants and as the result emergence of a new underclass. The authors' (*ibid*.) second claim is that marked change of professional status from manual, usually held by the first generation immigrants, to non-manual, more common to their children, is rather caused by the industrial reorganization and does not necessarily mean improvement in the social position of the second-generation immigrants, since the latter are still over-represented in the low-skilled jobs even if in the service sector. Another explanation can be found in the ethnic stratification and the duality of the labour market with immigrants being pushed to its lower segments (Piore 1971, 1979; Massey et al 1993). Finally, difficulties in immigrant structural assimilation can be attributed to the 'hierarchisation' of the occupational inclusion and discrimination on the basis of ethnic origin, with EU member state nationals being preferred over stigmatised 'Muslim' foreigners and especially Moroccans. Neels and Stoop (2000) indicate that even in case of equal qualifications the occupational outcomes of Moroccan and Turkish young people fall short to their Belgian counterparts. Areijn et al (1998) on the basis of experiments documented instances of discrimination of youth from ethnic minorities, and particularly Moroccans, when applying for a clerical job, employment in the retail trade sector, and particularly in jobs involving contact with clientele.

Spain: New immigrant-accepting country, old problems of immigrant integration

Immigration is a new phenomenon in Spain, which until recently has been considered purely the source of emigration to the more developed Western and Northern European countries. King and Rybaczuk (1993) attribute attractiveness of Spain as immigrant destination to the recent economic reorganisation and restructuring of the production that have created all sorts of niches for which 'marginal' forms of inexpensive and flexible labour, one of which are immigrants, are ideally suited.

Cachón (1999) distinguishes between three groups of immigrants to Spain: (1) highly qualified experts and technicians from EU and other developed countries or, in other words, settled immigrants; (2) workers with low qualifications from other countries or precarious immigrants; and (3) illegal workers. Settled immigrants, which in addition to EU nationals include immigrants from other industrial countries and from Latin America[1] managed to achieve a considerable degree of integration into the Spanish society, a stable position in the labour market, often superior to the

[1] Immigrants from Hispanic America, the Philippines, Equatorial Guinea and Andorra are eligible to apply for naturalisation after 2 years of residence in Spain, while for the rest the waiting period is 10 years.

national population. The rest of immigrants coming to Spain are classified as precarious and illegal immigrants, the latter without a legal residence status in Spain. They tend to fill mostly poorly paid or socially undesirable jobs in the service sector, i.e. hotel work, catering, retailing and domestic service, in seasonal agriculture, construction, and manufacturing segments such as textiles, garments, metalworking and leather tanneries (SOPEMI 2000; Cachón 1999; Actis et al 1999; Reyneri 2001).

In spite of large-scale unemployment, the number of poorly educated youths out of work is actually relatively low. According to Reyneri (2001), the serious mismatch between demand for low-skilled and poor status jobs and supply of local workers with high education and ambitions plus the subsequent segmentation of the local labour market can explain why employers seek foreign workers despite the widespread availability of educated young jobless at home. Generally migrants and Spanish youth look for different types of jobs, the former being in competition only with marginal sections of the national labour force (young dropouts, uneducated women, elderly people).

Starting from the late 1980s Morocco became a significant source of labour migration to Spain[2]. Moroccan immigrants, prevalent among precarious and even more among illegal workers, are located on the very end of the queer of potential workers for Spanish employers following Asians and Eastern Europeans, which in turn stand below Latin Americans and Black Africans in the job hierarchy, with EU citizens being the most privileged group. Direct discrimination tests conducted by de Prada et al (1996) discovered that young, semi-skilled male Moroccans experienced differential treatment when looking for a job, as compared with a similar group of young male Spanish nationals. If successful in finding a job, Moroccans are over-represented in the secondary economy and in the low-grade employment, the fact that King and Rybaczuk (1993) attribute to their lack of fluency in Spanish and their poor educational background.

Immigrant integration measures are extremely scarce in Spain. De Prada et al (1996) admit that existing vocational training courses specifically targeting immigrants are rare. Furthermore, a short period of validity of residence/work permits does not promote any possible integration of precarious immigrants into the host country.

Comparative discussion

Spain and Belgium represent an interesting case for a comparative study of young immigrants' early careers and immigrant labour market inclusion in general. First of all, the two countries differ in the context of immigration: while temporary labour migration dominates the entry to Spain, in Belgium it is no longer the case for third-country immigrants, able to secure residence permits (including permanent) only on family reunification or humanitarian (refugees, asylum seekers) grounds.

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[2] In the late 1980s the French authorities began to demand visas from Maghreb foreigners, which resulted in switch from France to Spain as a destination country for Moroccans.

Moreover, in Belgium, problems of labour market integration of the second-generation immigrants have become salient, as more children of guest workers from 1960-1970s have entered the labour market.

Differences in the labour market structure might be found responsible for the variance in early career opportunities of young immigrant and native-born school leavers in the two countries. Demand for the low-skilled jobs in the secondary labour market met with the supply of non-EU and especially Moroccan immigrants ready to pick up any jobs in Spain might result in fewer difficulties in finding a lower status job in this country. In Belgium, which undergone substantial downsizing of the primary and secondary economic sectors, young immigrant school-leavers are expected to enter the tertiary labour market where they might encounter discrimination when competing with the indigenous youth.

Diversity in the sending countries and immigration contexts results in the country-specific hierarchies of the ethno-national groups. EU and other industrialized Western countries' nationals are treated preferentially in both societies, however EU nationals from the Southern European countries, and particularly Italy, who arrived as guest workers during 1960s and their children might experience more difficulties at the labour market entry in Belgium. On average, non-EU nationals and immigrants are expected to have quicker entry into employment in Spain, as large percentage of those are privileged newcomers from Spanish-speaking Latin America. Finally, two countries have experienced an inflow of immigrants from the same sending country – Morocco, immigrants who occupy the lowest rank in the ethnical hierarchy in both societies and are expected to be disadvantaged at labour market entry in both societies.

2.2 Explaining ethnic inequalities at the transition from school to work: discrimination, country-specific information, and self-selection

In this section some general mechanisms which may account for ethnic inequalities at the labour market entry, and particularly different length of the job search for ethnic minorities as compared to the indigenous populations, are reviewed. The underlying process of the job search can be understood as the problem of matching (the requirements of) jobs to (the characteristics of) individuals. Two types of actors are involved in this process – possible employers and school leavers themselves and both are assumed to look for a solution which is optimal from their point of view.

Following basic economic arguments the aim of the employer is to find the applicant with the highest productivity or *human capital* given the search activities of the firm and given the characteristics (including the wage) of a certain vacancy. In the literature there are at least three prominent arguments which may account for ethnic disadvantages in this respect. First, in-migration might be highly selective with respect to human capital, either positive or negative (e.g. Borjas 1987). Second, some aspects of human capital (e.g. language skills) are country-specific, i.e. they are more productive in some societal contexts than in others. Therefore, the act of migration leads to a loss of these aspects and, as a consequence, to a certain devaluation of human capital (Chiswick 1978,

1991; Friedberg 2000). Third, immigrants often consider their stay in the host country as being only temporary (Bonachich 1972). Therefore they may be more reluctant to invest in human capital that is specific for the host country. As all three arguments refer directly to the migration experience they hold true for the first generation of immigrants. However, there are multiple ways in which different forms of capital – in forms of either physical or social inheritance – are transmitted from generation to generation (Bourdieu 1977). Moreover, students of social mobility (e.g. Erikson/Goldthorpe 1992; Müller et al. 1989) claim that the impact of *social origin* on educational and occupational attainment is very strong in most European Countries and thus one would also expect that human capital disadvantages of the first generation immigrants are partly transmitted to the second generation through similar mechanisms.

On the other hand, employers may treat members of ethnic groups differently even if the amount of their human capital is controlled for. In other words, ethnic minorities may face some form of overt or hidden *discrimination* in the labour market. How can this be explained? The neo-classical approach clearly predicts that discrimination will not exist in perfect markets. This implies that market failure is a necessary condition for discriminative behaviour to exist and several prominent theories may be fitted under this general idea. First, theories of monopsonistic discrimination start from the assumption that there is a lack of competition on the demand side for labour (Madden 1973). The arguments do not only hold true for monopsonies in a narrower sense, but also if cartels or mobility barriers for labour exist. Alternative is statistical discrimination approach, which assumes that employers do not have full information on the productivity of workers and impute some group information instead (Phelps 1972; Arrow 1972; Aigner/Cain 1977; England 1992: 56ff). It is worth noting, that taking the ideas seriously, statistical discrimination will only predict individual discrimination but not discrimination of a group on average. Therefore, a related but distinct mechanism should be distinguished, namely ‘error discrimination’. Here, it is assumed that due to the lack of full information false beliefs (rather than statistical approximations) are imputed about the ‘true’ productivity of workers (e.g. England 1992: 60). Finally, in his seminal work on ‘the economics of discrimination’ Becker (1971) introduces the notion of personal preferences or, in his words, ‘tastes for discrimination’. He shows that such tastes – appearing either on the side of employers, employees or customers – will result in effective market discrimination. It has been argued that tastes for discrimination (like ‘false beliefs’ in the case of error discrimination) will not exist over time in markets that are otherwise competitive (e.g. Arrow 1972: 192; Arrow 1998). Recently, however, some models have been suggested that show that tastes could be stable over time if search costs in the labour market are severe (Black 1995; Borjas/Bronars 1989).

On the side of the school leaver or job seeker there are two central factors influencing the speed of the matching process: search efficiency and search intensity. Explaining ethnic inequalities thus implies answering the question why these factors may differ for immigrants and the indigenous population. With respect to search efficiency it is reasonable to assume that *specific information* about the labour market plays an important role in finding matching vacancies. As such information is based on cultural-specific knowledge and social capital which is specific for the host society we would expect

immigrants and their descendants to be disadvantaged in this respect. However, assuming diminishing marginal returns of additional information we would also expect that these ethnic disadvantages decrease in the course of time, i.e. the longer the duration of search the narrower the information gap between the indigenous youth and the young immigrants.

While search efficiency refers to the 'objective' probability of finding a matching vacancy, given the search activities of an employee, these may differ with respect to ethnicity. In the economic search theory (e.g. Stigler 1961; McCall 1970; Devine/Kiefer 1991), search for further vacancies is assumed to imply costs on the one hand, and uncertainty about whether the search will be successful, on the other hand. Therefore, employees stop searching as soon as the utility (wage) of a given alternative exceeds a certain threshold (reservation wage). A simple representation of these ideas can be seen in the following model. We assume that the expected utility of a potential job alternative is given by U_A and the utility of the status quo is given by U_{SQ}. Further, if the search for the job alternative includes costs C and the subjective probability of finding such an alternative is given by p, then the utility of search is given by:

$U_{search} = pU_A + (1-p)U_{SQ} - C,$

while the utility of stopping further search is:

$U_{\neg search} = U_{SQ}.$

In a sequential model search is continued as long as $U_{search} > U_{\neg search}$ which for $p \neq 0$ is equivalent to

$U_{SQ} < U_A - C/p. (*)$

The term $U_A - C/p$ may be interpreted as the threshold or 'reservation wage', i.e. it resembles the utility level of the status quo which is sufficient for the job seeker to stop further activities. The lower the expected gains from potential alternatives, the higher the search costs and the lower the subjective expected probability of finding such an alternative, the sooner the process of job search is stopped.

Following this model two assumptions with respect to the search behaviour of immigrants lie near at hand: first, it is reasonable to assume that ethnic minorities have higher search costs C, as they may lack specific knowledge and specific social capital with respect to the labour market of the host society. Second, minorities may fear discrimination in the labour market (even if it does not actually exist) resulting in a lower subjective probability p of being successful in finding an alternative. Holding U_A constant both arguments lead to a decrease of the reservation wage, therefore resulting in shorter search durations and lower job levels for non-indigenous job seekers. This mechanism thus can be understood as leading to a sort of *"self-selection"* on the side of immigrants with respect to higher-level jobs.

3 Data and methodology

To explore early career developments of immigrant job entrants in the two countries, the study utilises a new dataset made available by Eurostat - the European Union Labour Force Survey (EULFS) 2000 ad hoc module on school-to-work transitions. In addition of the data's linkage to the general EULFS it provides a core set of substantively important variables on school-to-work transitions, including longitudinal information on the first significant job. Both Spain and Belgium rather successfully implemented the ad hoc module (see Iannelli 2002). In Belgium the actual sample size of the target population, i.e. young people who left education during previous ten years, is 2930 individuals, while in Spain it is 14909 young people. There are some slight differences in the age range of the target group, which do not seem to impede the comparability and significantly distort results of the study: in Spain the target population includes 16-35 years old, while in Belgium the target group are those of 15-34 years old.

In the EULFS ad hoc module first significant job is defined as non-marginal employment of at least 20 hours per week that has lasted at least six months and started after leaving continuous education. It is worth noting that such a strict definition of first significant job might ignore labour market integration of school-leavers who have a succession of temporary contracts, albeit with different employers, which is typical of Spanish youth labour market known for its high flexibility and precariousness. In addition, Belgium, strictly following Eurostat's definition of first significant job, excluded all jobs that started before leaving continuous education, while Spain considered first jobs as significant employment even if they started before leaving education but otherwise met the criteria of first significant jobs. These data specificities do not constitute a serious obstacle for the current analysis since its main focus is on labour market integration of immigrants as compared to indigenous young people in each particular country.

Transition from education to first significant occupation is approached from the event history perspective, i.e. we analyse the hazard rates of getting a first significant job since leaving education. The hazard rate or 'risk' *r(t)* is defined by (e.g. Blossfeld/Rohwer 1995: 28):

$$r(t) = \lim_{t^* \to t} \frac{\Pr(t \le T < t^* \mid T \ge t)}{t^* - t},$$

i.e. it is the limit (as t^* approaches t) of the conditional probability that the event occurs (at time T) between time points t and t^*, given that it has not occurred until t, divided by the length of the interval between t^* and t. In our case the event is defined by getting a first significant job and the process is considered to start at the time of leaving the educational system for the first time ($t=0$).

In these analyses the *starting time* of an episode is given by the time of leaving education. If a person immigrated *x* month after leaving education s/he enters the risk set at time *x*, which leads to a conditional likelihood approach (Guo 1993). An *event* occurs, if an individual enters the first significant job, and in this case time of entering defines the *ending time* of an episode. Hence the

duration of the search, measured in months in the study, equals the period between leaving continuous education and starting first significant job. Cases when immigrants experienced their first significant job outside the host country (5.9% in Belgium and 5.3% in Spain) were deleted from the analysis since they are out of the scope of the present study. Those individuals (episodes), who did not enter the first significant job until the time of interview, are considered *right censored*. Here, the duration of the job search equals time since leaving continuous education for the first time. In Belgium in 1.1 per cent of cases negative duration of more than 12 months[3] between leaving education and starting the first significant job was observed, these cases were excluded from the analysis.

A major problem in the Spanish ad hoc module, relevant to the current study, is relatively large number of missing values (up to 26 per cent) on the month of an event, either when leaving education or when starting the first significant job, as this information was optional for the events that occurred before 1997. In Belgium missing information in these variables was less substantial (about 6 per cent). For both countries the missing month of leaving education was substituted by month 'June' if the information on year of the event was present. To minimize mistakes in calculation of the duration variables similar imputations were adopted for the missing month of starting first significant job.

We estimate *multiple destinations models*, which in our case means that one origin state (having no first significant job yet) and three possible destination states are distinguished. Individuals may move to one of three types of jobs: professional, technical, or managerial jobs (further on PTM), clerical or service occupations (CS), or blue-collar[4] (BC) jobs.

We run piecewise constant exponential models (see Blossfeld/Rohwer 1995: 110-119) to approximate the shape of the hazard functions and to estimate the impact of independent variables. In a multiple destination model the piecewise constant exponential model for transition to destination k is given by:

$$r^k(t) = \exp(a^k_l + a^k_1 x_1 + \ldots + a^k_m x_m), \qquad \text{for } t \in [\tau_l, \tau_{l+1}] \text{ with } 0 = \tau_1 < \tau_2 < \ldots < \tau_L < \tau_{L+1} = \infty.$$

That means that in this model the time axis is divided into L intervals and an interval-specific constant a^k_l is estimated for each interval $[\tau_l, \tau_{l+1}]$ $(l = 1,\ldots,L)$ and each possible destination k. In addition to that for all covariates $x_1,\ldots,x_m$ destination-specific but time-independent parameters $a^k_1, \ldots, a^k_m$ are estimated. The independent variables of our analyses are summarized in Table 1.

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[3] Because of the imputations, negative durations of less than 12 months were considered in the study as the fact of immediate entry to the first significant job.

[4] Blue-collar jobs include skilled agricultural and fishery workers, craft and related trades workers, plant and machine operators and assemblers, and unskilled workers. Relatively small number of cases for the immigrants groups in both countries does not allow break-down to less heterogeneous groups of occupations, like for example, skilled and unskilled labourers.

Table 1: Description of the independent variables in the multivariate analysis

Independent Variable	Description
Ethno-national group[5]	*A group of dummy coded variables:* Indigenous (native-born national) – reference category EU and other industrialized Western countries' nationals or immigrants born in EU or other Western countries (latter including: other Western European countries, the USA, Canada, Australia and Japan). This group is further called EU nationals Non-EU nationals or immigrants born in other non-EU countries (descriptive analyses also distinguishes a group of Moroccans in both countries)
Age at leaving education	Age minus time since leaving education (in years)
Gender	Men (reference category), women
Level of education when leaving school for the first time	*A group of dummy coded variables:* Low – ISCED 1-2 – reference category Medium – ISCED 3-4 High – ISCED 5-6
Parental highest level of education	*A group of dummy coded variables:* Low – ISCED 1-2 – reference category Medium – ISCED 3-4 High – ISCED 5-6
Education received not in the host country	1: Immigrant arrived after leaving continuous education for the first time 0: Indigenous youth, EU nationals and non-EU nationals born or immigrated before leaving continuous education in the host country – a reference category
Missing years since migration (Spain only)	1: Immigrant, but information on time of immigration is missing 0: else
Waiting time in home country for immigrants	Equals the time until immigration (years) after leaving continuous education if education not received in the host country
Waiting time for EU immigrants (time-varying)[6]	Equals the time after leaving education (round years) for EU-immigrants Equals 0 for indigenous populations and non-EU immigrants.
Waiting time for non-EU immigrants (time-varying)	Equals the time after leaving education (round years) for non-EU-immigrants Equals 0 for indigenous populations and EU immigrants.

[5] Unfortunately the EULFS data does allow identifying second-generation immigrants who possess nationality of a host country thus excluding this group extremely important for the analysis of persistence of ethnic inequalities in the immigrant-receiving countries. This might be more of a problem for Belgium than Spain, since the latter has experienced immigration inflow only recently. Besides, in both countries the LFS data might under-estimate proportion of illegal immigrants which probably more serious problem in Spanish data since it experiences more substantial inflow of illegal immigrants seeking jobs in the informal sector of Spanish economy.

[6] This and the following quantitative time-varying variables are built by splitting time axes into episodes of 12 month each (Blossfeld/Rohwer 1995: 139-143).

4 Results

4.1 Socio-demographic characteristics of the target group in Belgium and Spain

Presence of immigrant and ethnic minorities' youth is more pronounced in Belgium than in Spain, which only recently became an immigrant country. This is evident from Table 2, which presents the descriptive overview of the socio-demographic characteristics of young people belonging to different ethno-national groups who left continuous education in the recent decade (the target group of the EULFS 2000 ad hoc module) and the occupational characteristics of their first job in Belgium and Spain. Four ethno-national groups are distinguished in each country: indigenous, i.e. national native-born youth, EU nationals, i.e. people born in the EU or other Western industrial countries or those possessing nationality of one of the EU or Western industrial countries, other non-EU nationals and Moroccans as a separate group.

In both countries immigrants and second generation youth from Morocco is a demographically distinctive group. Being slightly younger than the rest of the target group, the larger proportion of Moroccans are married and have children in both countries in the data set. Interesting to note existence of the gender imbalance among immigrant youth in Belgium with higher proportion of women among EU nationals and of men among non-EU nationals.

As it was already mentioned earlier, immigration is a relatively recent phenomenon in Spain, where the majority of immigrants arrived in the recent decade with the proportion of the second-generation immigrants being rather negligible. In Belgium, on the contrary, almost half of the target group arrived more than 10 ago with about one fifth of all ethnic minorities' youth being born in the country. The proportion of naturalized non-EU youth is quite similar and rather low in both countries. In Spain Spanish nationals dominate immigrant inflow from the EU countries, which might be explained by the return migration of Spanish emigrants and their offspring.

In Belgium young people tend to leave education later than in Spain. In both countries differences between ethno-national groups in age at leaving education are evident. In Belgium EU nationals stay at school longer, while Moroccans leave education slightly earlier. In Spain immigrants from EU and non-EU countries (with the exception of Morocco) leave school later than indigenous Spaniards. Moroccans tend to leave education at about 17 years old, which is about 2 years earlier than native-born Spaniards and almost 3 years as compared to the rest of immigrants in Spain. Almost equal proportion of young people left education for the first time with the tertiary degree (about 43 per cent) in both countries. However in Belgium rather a low proportion (15 per cent) of young people left school possessing a secondary education only, while analogous number for Spanish young school leavers is much higher - about 35 per cent. Educational distribution of the EU nationals is quite similar to that of

Table 2: Descriptive overview of young people who left continuous education in the recent 10 years in Belgium and Spain

	Belgium				Spain			
	Indigenous	EU nationals	Moroccans	Other non-EU	Indigenous	EU nationals	Moroccans	Other non-EU
Percent out of the total target group	87.5	4.1	2.0	6.4	97.0	1.1	0.6	1.4
Mean age	25.6	26.3	24.5	25.8	23.8	24.9	23.6	25.0
	(3.6)	(3.9)	(4.0)	(3.9)	(4.1)	(4.2)	(5.5)	(4.4)
Percent male	52.0	35.3	57.0	57.4	52.4	52.6	49.8	44.8
Percent married	31.0	31.5	46.9	36.2	11.8	21.9	42.7	36.4
Percent with children	29.7	35.3	52.3	38.2	23.3	25.1	68.9	27.2
Immigrants status								
Born in the country	100	22.9	14.3	26.6	100	9.5	.	1.8
Arrived less than 5 years ago		20.1	28.8	15.3		51.6	44.4	71.6
Arrived 5-10 years ago		10.5	11.6	13.3		32.3	37.5	22.5
Arrived more than 10 years ago		46.5	45.2	44.8		6.5	18.1	4.0
With citizenship of the host country	100	26.0	15.9	34.2	100	86.4	16.8	37.2
Mean age at leaving education	20.9	21.5	20.0	20.9	19.4	20.0	17.1	20.3
	(2.6)	(3.3)	(3.2)	(3.6)	(4.1)	(4.0)	(4.3)	(3.9)
Level of education when leaving it for the 1st time								
Percent with low education	15.0	12.8	37.8	30.0	35.3	30.3	64.4	23.0
Percent with medium education	42.3	40.6	45.5	39.1	21.7	21.9	20	29.7
Percent with high education	42.7	46.6	16.6	30.9	43	47.8	15.6	47.3
Highest level of parental education								
Percent with low education	43.3	44.1	97.7	57.0	80.1	69.2	90.0	70.9
Percent with medium education	30.3	28.7	1.4	15.9	9.6	17.3	3.1	13.9
Percent with high education	26.4	27.2	0.9	27.2	10.3	13.5	7.0	15.3
Mean ISEI of the first significant job	45.1	45.1	36.8	43.6	41.4	43.6	27.3	38.9
	(16.2)	(16.5)	(14.4)	(15.4)	(16.5)	(15.7)	(8.4)	(17.4)
First significant job (Percent in)								
Professional, technical, managerial	40.8	38.3	20.6	36.9	27.6	37.5	3.2	25.2
Clerical and services	28.5	38.0	24.3	32.4	31.6	33.1	30.6	36.6
Blue-collar jobs	30.7	23.7	55.1	30.7	40.8	29.4	66.2	38.2
Total number	2556	120	58	188	14269	164	60	202

Source: Linked EULFS 2000 and EULFS 2000 ad hoc module on school-to-work transitions

indigenous youth in both countries, with slightly higher proportion of more educated people among the EU youth in Spain. Moroccan immigrants with secondary education are the large majority of those settled in Spain; while in Belgium more or less similar percentages of Moroccans possess secondary and post-secondary tertiary education credentials. At the same time, they tend to be under-represented among tertiary-educated in both countries (16-17 per cent). Educational level of other non-EU nationals in Spain is rather similar to that of EU nationals, i.e. about half of all young people are highly educated and about a third are with post-secondary diplomas. In Belgium equal proportions of immigrants from other non-EU countries left tertiary, post-secondary and secondary school (about a third in each group).

Turning to the social background of the target group, measured as the highest level of parental education, we find similarities among indigenous population and youth from the EU member states in Belgium. In Spain parents of the ad hoc module target group tend to educationally over-perform parents of the indigenous youth. Almost absolute majority of young Moroccans' parents have only secondary education in both countries. Social background of other non-EU immigrants seems to be comparable to that of indigenous populations in both countries, with relatively (to the national native-born youth) higher proportion of less-educated parents among Belgian young immigrants.

From Table 2, which includes information on the first significant job of young people, it is evident that socio-economic status of the first significant job of the indigenous youth is the same as among EU nationals is Belgium. In Spain, however, EU nationals managed to get better jobs than native-born nationals. Moroccans are greatly disadvantaged in the socio-economic status of the first significant job in both countries, the gap with the indigenous youth being more pronounced in Spain. Despite more favourable educational background young people from third countries in Spain seem to be more disadvantaged in the first significant job as compared to the native-born youth. The lower part of Table 2 presents the distribution of respondents according to the occupation of their first significant job, which is grouped in three wide categories: professional, technical managerial; clerical and services and the blue-collar employment. In Belgium indigenous youth are over-represented in professional, technical and managerial jobs (PTM), the trend closely followed by EU nationals[7] and to some degree by other non-EU nationals. Similar patterns of occupational location are evident for indigenous Spaniards and other non-EU nationals, while EU nationals in Spain are over-represented in the PTM jobs as compared to the native-born Spanish youth. Moroccan youth are clearly over-represented in the blue-collar jobs in Belgium and even more so in Spain. In Belgium almost equal proportions of the Moroccan origin youth find first jobs in PTM and service jobs, while in Spain virtually no Moroccans are found in the higher prestige PTM employment.

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[7] Immigrants from the EU countries are more represented in clerical and service jobs and less so in the blue-collar jobs than indigenous Belgians.

4.2 Patterns of entry into the first significant job in Belgium and Spain

We start the analysis of entry into the first significant job by looking at the hazard rates of the transition in Belgium and Spain. We approximate the shape of the hazard function using the piecewise constant exponential model without covariates defining eight discrete time periods.[8] The first one covers the first twelve months after leaving education (year 1), the second the next twelve months (year 2) and so on. Finally, due to the number of cases left the eights period covers all possible month after the seventh year. The model is implemented as a 'competing risk model', i.e. individuals may move to one of three possible destinations: a PTM-job, a service job (CS), or a blue-collar job (BC). The results of the estimates for Belgium and Spain are shown in Figure 1.

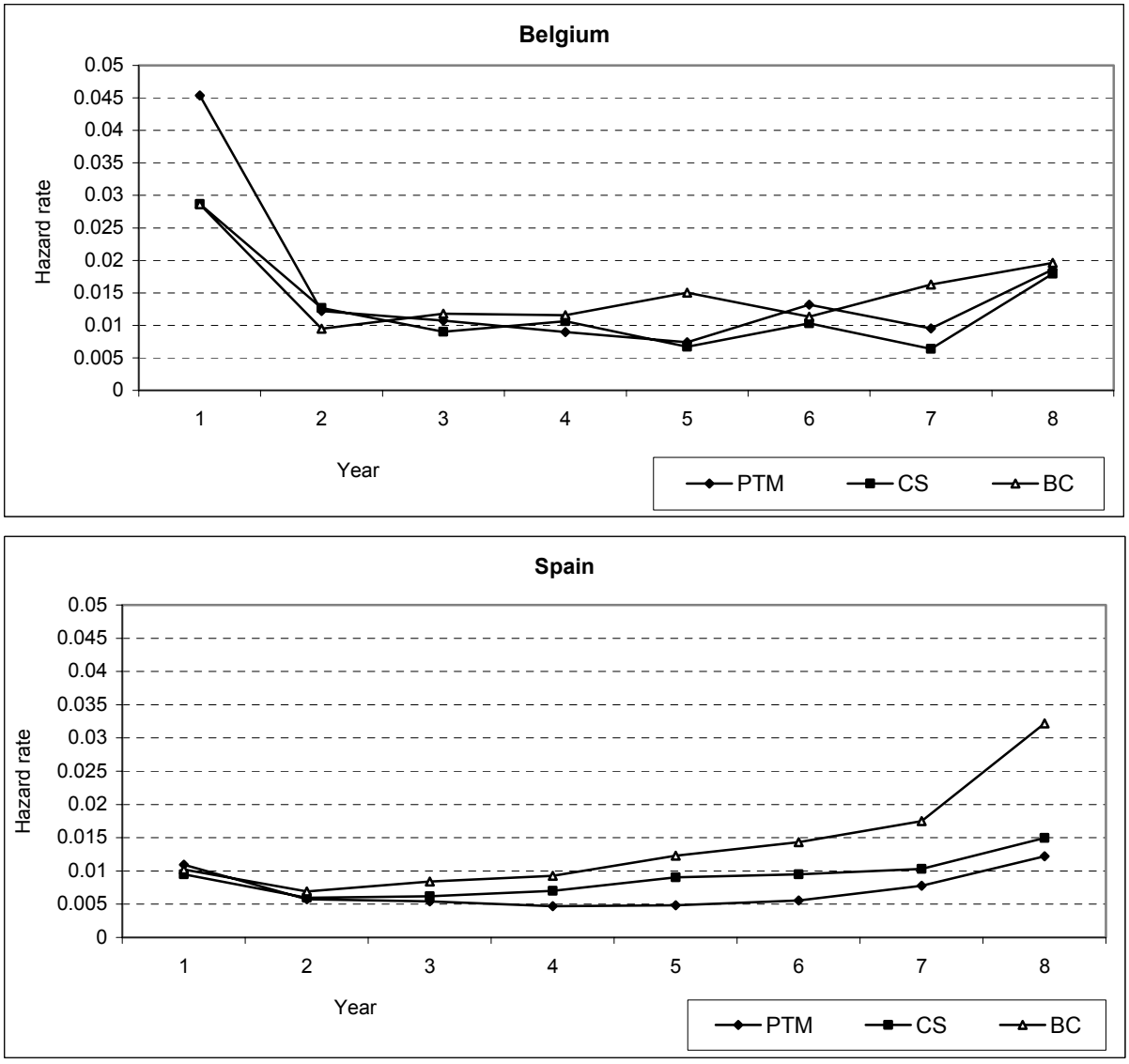

Figure 1: Time-dependent risks of entering first significant job after leaving education for the 1st time (results from a piecewise constant model without covariates)

Source: Linked EULFS 2000 and EULFS 2000 ad hoc module on school-to-work transitions

[8] An alternative may be seen in using the life table method choosing the same intervals.

The most obvious difference between Belgium and Spain is the risk of entering first significant job already in the first year after leaving education. While in Spain the rate estimate is rather low and nearly the same for all three types of jobs, it is considerably higher in Belgium, especially for PTM-jobs. However, after the first year, the risk level drops in Belgium and remains only slightly higher than in Spain. After the second year the risk increases in the course of time in both countries. In Spain, this holds true especially for blue-collar jobs, while the tendency is only slightly visible for PTM-jobs and CS-jobs are in between. In Belgium (assumingly due the number of cases) the differences between job types are less clear-cut.

To study whether the transition patterns differ between ethnic groups it is advisable to look at the survivor functions into which the hazard rates translate.[9] The survivor function is defined by
G(t) = Pr(T > t).
In our case *G(t)* it can be interpreted as the proportion of young people who still did not find a first significant job at time *t* after leaving education. Again we distinguish between three possible job types (destination states) and estimate the survival functions for four ethno-national groups using the Kaplan-Meier method (product-limit estimator). The results of the analyses are shown in Figure 2[10].

In general a smoother entry into the first employment is manifested in Belgium. Moroccans have most difficult time entering first significant job as compared to indigenous youth especially in PTM and service job. They are followed by other non-EU nationals, for whom it also takes significantly longer to find PTM employment compared to native-born Belgians. No significant differences[11] are found between indigenous youth and young people from the EU member states in their access to the first employment, irrespective of its type. A certain ethno-national hierarchy, with Moroccans followed by other non-EU nationals being mostly disadvantaged, is evident at the entry to the PTM employment in Belgium. The ethnic hierarchy becomes less obvious when looking at the picture of the entry to service and manual jobs.

A different pattern of the entry into the first job is distinct in Spain. There exists no significant difference between indigenous, EU and non-EU (with the exception of Morocco) youth in the entry to PTM employment. Moreover, non-EU nationals (with the exception of Moroccans) tend to enter service occupations quicker, while EU nationals and Moroccans do not significantly differ from native-born Spaniards with respect to entry into service jobs. EU nationals tend to have significantly slower entry into the blue-collar jobs as compared to the indigenous youth. Moroccans are almost excluded from PTM employment and have slower entry, albeit statistically insignificant, to other types of jobs.

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[9] The survivor function *G(t)* can be computed from the hazard function *r(t)* by $G(t) = \exp(-\int_0^t r(x)dx)$

[10] Survival functions illustrate first 4 years (48 months) after leaving education for the first time.

[11] To compare survival functions we used Wilcoxon (Breslow) test, which is more sensitive to the differences of the survival functions at the beginning of the duration (Blossfeld/Rohwer 1995).

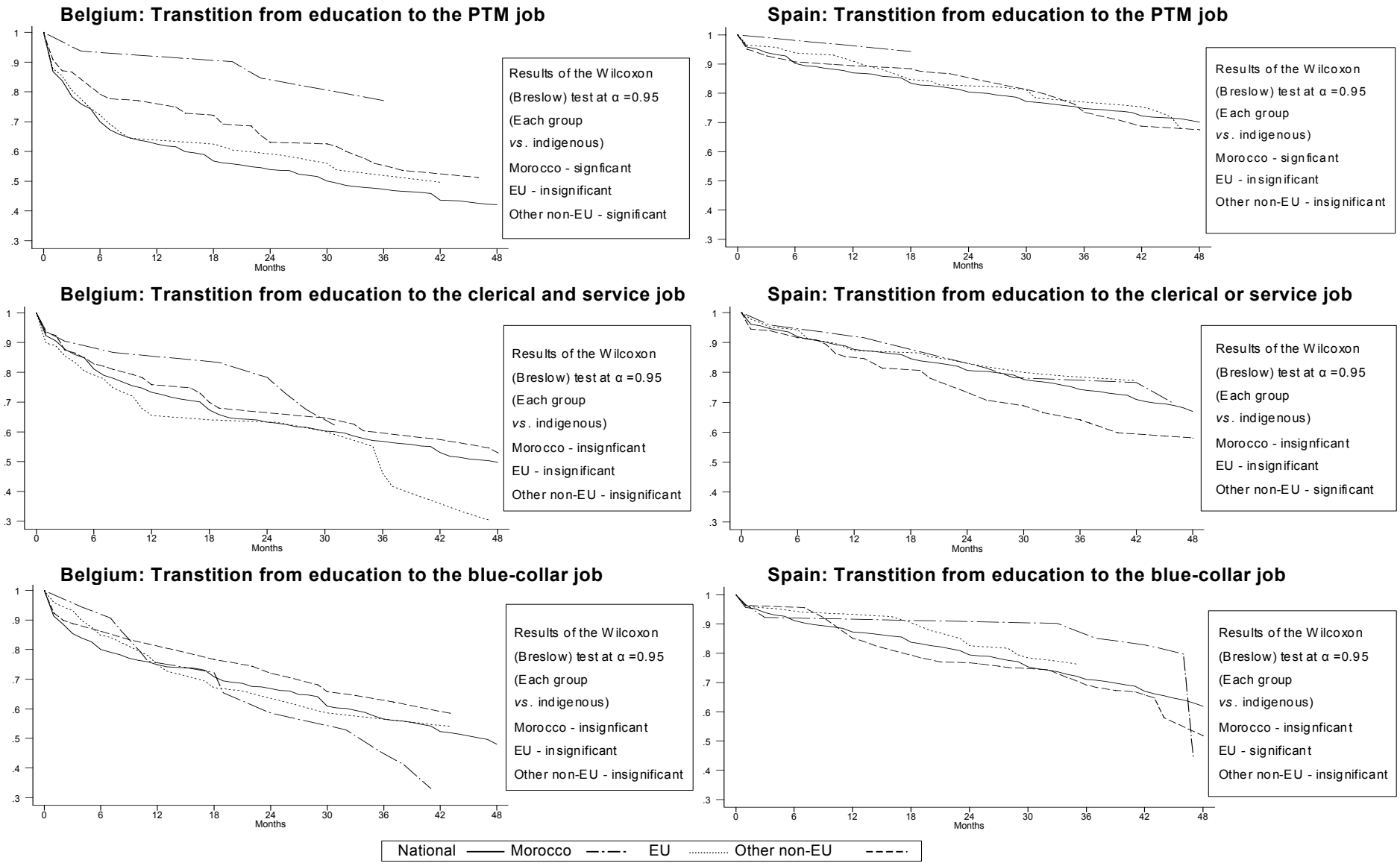

Figure 2: Kaplan-Meier estimates of survival functions of entering job types

4.3 Disentangling the mechanisms

In the theoretical part it was shown that ethnic differences in search durations might result from several distinct mechanisms: lack of human capital, effects of social origin, discrimination, country-specific information, and self-selection. We also argued that the absolute and relative weight of each mechanism would vary between countries, Belgium and Spain, because it is dependent on structural background conditions like migration history and institutional settings. In the following analyses we try to disentangle these mechanisms using multivariate event history models introducing related independent variables.

The basic idea is as follows: While *human capital and social origin* can be *directly* controlled, hypotheses on discrimination, specific information, and self-selection processes must be separated more indirectly relying on implications of the mechanisms for the specific duration dependency of the process. First, *discrimination* in the labour market will, by definition, result in net effects of ethnicity on the risk of entering the first significant job controlling for educational qualification and social origin. As the driving force is the behaviour of employers we assume that this effect is *independent of the* employees' *duration* of search. *Specific information* on the labour market of the host society is partly controlled by a dummy variable for finishing education in the home country and eventual waiting time between leaving education and immigration (controlling further for age of leaving education). However, possible gaps between indigenous youth and young immigrants are then expected to narrow over time assuming marginal returns of information. Therefore, for ethnic minorities compared to the indigenous population we expect a *relative increase in the risk* of finding a job over time if the mechanism of specific information is at work. Finally, if the mechanism of *self-selection* is present, the reverse should be true – at least for higher status jobs: the relative risk of ethnic minorities should *decrease over time* as search activities are stopped earlier.

To test our competing assumptions on the time dependency of the relative risk of immigrants we include two time-varying variables in our models, a variable called 'EU $\times$ waiting time' (waiting time for EU immigrants) and 'non-EU $\times$ waiting time' (waiting time for non-EU immigrants). These variables equal waiting time (in round years) if an individual belongs to the EU respectively to the non-EU ethno-national group and equals 0 if else. Thus the variable captures the time dependent change in relative risks of two ethno-national groups compared to the indigenous youth given the underlying risk shape and given the time-independent relative effects of ethnicity (main effects). If the sign of the parameter for this variable is positive, the relative risk of (non-)EU youth compared to the reference groups increases over time, if the parameter is negative the relative risk decreases over time.

The estimated parameters of different models are shown in Table 3 for Belgium and in Table 4 for Spain. Like in the analyses above we consider multiple destinations, i.e. PTM jobs, clerical or service jobs and blue-collar jobs. With respect to the *higher status PTM jobs* we find clear

disadvantages of EU immigrants and non-EU immigrants[1] in Belgium when controlling only for gender and age at leaving education (model 1). In Spain we also find clear disadvantages for the non-EU group, while EU-immigrants do not differ significantly from the indigenous population. In model 2 we introduce also a control for educational level and a dummy variable pertaining to the place of educational attainment. We find that in Belgium education is to a large degree responsible for ethnic inequalities of non-EU youth. In Spain coefficient pertaining to non-EU nationals only slightly diminishes but still remains highly significant. In both countries the effect for EU immigrants is only slightly affected when controlling for education. The fact that education has been finished in the home country has a negative, however insignificant effect on the risk function in both countries. After controlling for parental education (model 3) the situation in Belgium remains more or less the same although this variable has a significant impact on the risk of getting a PTM-job. In Spain ethnic disadvantages even slightly increase, taking parental education into account. Finally (model 4), controlling also for the length of waiting time in the home country, we include the interaction term of the EU group membership with waiting time and the interaction of non-EU group membership with waiting time to the model. In Belgium the parameters for these variable are nearly zero, while in Spain there is a highly significant negative effect for the waiting time of the non-EU group. This points to the relevance of the self-selection mechanism with respect to PTM-jobs in the Spanish case. Note that the main effect for non-EU immigrants is only -.0.78 in model 4 compared to -1.12 in model 3. This means that ethnic differences in the risk of getting a higher-level PTM job are less pronounced soon after leaving education, but then become more and more severe each additional year after leaving education.

Looking at the risk of getting a *clerical or service job (CS-job)* ethnicity effects are nearly absent in both countries. As one would expect, the risk of getting a clerical and service job is higher for women in both countries. Moreover, medium level of education and medium level of parental education increase the corresponding risk. Note that in Spain effects for EU national group even become positive (albeit not significantly) when introducing these controls. While the interactions of waiting time with ethnicity groups have no effect on the hazard rate in Belgium, the waiting time for the non-EU group has a significant negative effect in Spain. An interesting finding is that having finished education in the home country and being a non-EU immigrant or national both have a positive effect on the risk function in model 4 for Spain. This means that soon after leaving education non-EU youth seem to have a better access to CS-jobs, however this advantage vanishes with the passage of time after leaving education.

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[1] Because of the small number of cases yielding instability in the models Moroccans were combined with other non-EU nationals.

Table 3: Effects on the risk of getting a first significant job in Belgium (coefficients from competing risk piecewise constant exponential models)

	Model 1		Model 2		Model 3		Model 4	
	Coeff	S.E.	Coeff	S.E.	Coeff	S.E.	Coeff	S.E.
PTM-jobs								
EU	-0.51**	(0.18)	-0.37**	(0.18)	-0.32*	(0.18)	-0.38*	(0.21)
non-EU	-0.99**	(0.16)	-0.42**	(0.16)	-0.41**	(0.16)	-0.45**	(0.19)
female	0.27**	(0.06)	0.10	(0.07)	0.11*	(0.07)	0.11*	(0.07)
age at leaving educ.	0.28**	(0.01)	0.11**	(0.02)	0.11**	(0.02)	0.11**	(0.02)
medium education			1.61**	(0.30)	1.57**	(0.30)	1.57**	(0.30)
high education			2.98**	(0.30)	2.88**	(0.30)	2.88**	(0.30)
education host c.			-1.11	(0.82)	-1.14	(0.82)	0.33	(1.11)
parental educ. med.					0.20**	(0.09)	0.21**	(0.09)
parental educ. high					0.28**	(0.08)	0.29**	(0.08)
EU × waiting time							0.09	(0.09)
non-EU × waiting time							0.04	(0.09)
waiting time home c.							-0.84	(0.64)
CS-jobs								
EU	-0.03	(0.20)	-0.04	(0.20)	-0.01	(0.20)	0.09	(0.22)
non-EU	-0.21	(0.15)	-0.22	(0.16)	-0.16	(0.16)	-0.21	(0.19)
female	0.73**	(0.08)	0.73**	(0.08)	0.76**	(0.08)	0.76**	(0.08)
age at leaving educ.	0.02*	(0.01)	0.05**	(0.02)	0.05**	(0.02)	0.05**	(0.02)
medium education			0.40**	(0.12)	0.37**	(0.12)	0.37**	(0.12)
high education			0.07	(0.16)	0.02	(0.16)	0.02	(0.16)
education host c.			-0.31	(0.58)	-0.38	(0.58)	-0.75	(1.01)
parental educ. med.					0.34**	(0.09)	0.34**	(0.09)
parental educ. high					0.09	(0.11)	0.09	(0.11)
EU × waiting time							-0.12	(0.14)
non-EU × waiting time							0.03	(0.08)
waiting time home c.							0.22	(0.29)
Blue-collar jobs								
EU	0.17	(0.22)	0.13	(0.23)	0.10	(0.23)	0.24	(0.25)
non-EU	-0.15	(0.14)	-0.32**	(0.15)	-0.40**	(0.15)	-0.68**	(0.19)
female	-1.12**	(0.09)	-1.02**	(0.09)	-1.07**	(0.09)	-1.06**	(0.09)
age at leaving educ.	-0.18**	(0.02)	-0.03	(0.02)	-0.03	(0.02)	-0.03	(0.02)
medium education			0.08	(0.09)	0.17*	(0.09)	0.15*	(0.09)
high education			-1.78**	(0.19)	-1.57**	(0.19)	-1.59**	(0.19)
education host c.			0.69*	(0.37)	0.71*	(0.37)	0.81	(0.74)
parental educ. med.					-0.45**	(0.09)	-0.45**	(0.09)
parental educ. high					-0.57**	(0.13)	-0.56**	(0.13)
EU × waiting time							-0.14	(0.16)
non-EU × waiting time							0.18**	(0.06)
waiting time home c.							-0.14	(0.21)

Notes: ** p<0.05, * p<0.10

Source: Linked EULFS 2000 and EULFS 2000 ad hoc module on school-to-work transitions

Table 4: Effects on the risk of getting a first significant job in Spain (coefficients from competing risk piecewise constant exponential models)

	Model 1		Model 2		Model 3		Model 4	
	Coeff	S.E.	Coeff	S.E.	Coeff	S.E.	Coeff	S.E.
PTM-jobs								
EU	-0.13	(0.17)	-0.27	(0.41)	-0.38	(0.40)	-0.80 *	(0.45)
non-EU	-1.06 **	(0.22)	-0.87 **	(0.39)	-1.12 **	(0.39)	-0.78 **	(0.40)
female	0.15 **	(0.04)	0.02	(0.04)	0.05	(0.04)	0.05	(0.04)
age at leaving education	0.26 **	(0.00)	0.16 **	(0.01)	0.15 **	(0.01)	0.15 **	(0.01)
medium education			1.15 **	(0.13)	1.13 **	(0.13)	1.13 **	(0.13)
high education			2.35 **	(0.12)	2.27 **	(0.12)	2.28 **	(0.12)
education in host country			-1.21	(0.84)	-0.87	(0.84)	-0.64	(1.53)
missing YSM			0.10	(0.41)	0.24	(0.40)	0.42	(0.41)
parental educ. medium					0.25 **	(0.06)	0.26 **	(0.06)
parental educ. high					0.56 **	(0.05)	0.56 **	(0.05)
EU × waiting time							0.11 *	(0.06)
non-EU × waiting time							-0.30 **	(0.13)
waiting time home country							0.18	(0.54)
CS-jobs								
EU	-0.20	(0.18)	0.30	(0.31)	0.29	(0.31)	0.24	(0.37)
non-EU	0.01	(0.14)	0.26	(0.24)	0.25	(0.24)	0.44 *	(0.26)
female	0.90 **	(0.04)	0.88 **	(0.04)	0.88 **	(0.04)	0.88 **	(0.04)
age at leaving education	0.05 **	(0.00)	0.04 **	(0.01)	0.04 **	(0.01)	0.04 **	(0.01)
medium education			0.61 **	(0.05)	0.60 **	(0.05)	0.60 **	(0.05)
high education			0.17 **	(0.07)	0.17 **	(0.07)	0.16 **	(0.07)
education in host country			0.04	(0.33)	0.08	(0.33)	1.10 **	(0.56)
missing YSM			-0.56	(0.30)	-0.58 **	(0.29)	-0.44	(0.30)
parental educ. medium					0.20 **	(0.06)	0.20 **	(0.06)
parental educ. high					-0.01	(0.07)	-0.02	(0.07)
EU × waiting time							-0.03	(0.08)
non-EU × waiting time							-0.16 **	(0.08)
waiting time home country							-0.29	(0.23)
Blue-collar jobs								
EU	-0.58 **	(0.19)	-0.35	(0.19)	-0.34	(0.34)	0.13	(0.38)
non-EU	0.03	(0.13)	-0.00	(0.24)	0.02	(0.24)	-0.12	(0.29)
female	-1.15 **	(0.04)	-1.12 **	(0.04)	-1.12 **	(0.04)	-1.12 **	(0.04)
age at leaving education	-0.04 **	(0.00)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)
medium education			-0.06	(0.05)	-0.04	(0.05)	-0.04	(0.05)
high education			-0.59 **	(0.07)	-0.55 **	(0.07)	-0.55 **	(0.07)
education in host country			0.37	(0.32)	0.31	(0.32)	0.09	(0.45)
missing YSM			-0.25	(0.30)	-0.24	(0.30)	-0.27	(0.30)
parental educ. medium					-0.22 **	(0.06)	-0.22 **	(0.06)
parental educ. high					-0.46 **	(0.08)	-0.46 **	(0.08)
EU × waiting time							-0.19 **	(0.09)
non-EU × waiting time							0.05	(0.06)
waiting time home country							0.07	(0.12)

Notes: ** p<0.05, * p<0.10

Source: Linked EULFS 2000 and EULFS 2000 ad hoc module on school-to-work transitions

The results with respect to the access to *the blue-collar jobs* differ from those for both other types of jobs. Here, we find notably various patterns in the two countries. First of all, in all models for Belgium no differences between EU immigrants and indigenous youth are apparent. In Spain, however, EU immigrants have significantly lower risk of entering blue-collar jobs which seems to be mainly due to their higher education (compare model 2 to model 1). Most obviously however, both countries differ with respect to the entry patterns of non-EU youth. For this group in all models for Spain no effect is to be found. In Belgium the gross effect (model 1) is also near to zero. However, after introducing the control variables in models 2 to 4 the non-EU youth turn out to be disadvantaged in the Belgium labor market with respect to BC-jobs. Most interestingly we find a significant positive effect of this groups' waiting time in model 4. This points to a diminishing gap between the indigenous population and non-EU immigrants in the course of time, assumingly due to gathering more country-specific information.

5 Summary and discussion

In this paper an attempt is made to disentangle mechanisms leading to ethnic inequalities at the labour market entry and thus to enhance understanding of ethnic inequalities using comparative longitudinal information available in the EULFS 2000 ad hoc module. Since data constraints do not allow us to conduct a wide-scale cross-national comparison, we focus on Belgium and Spain, two European countries with different histories of immigrant acceptance and contexts of immigrant integration. Looking at the transitions from education to first significant jobs in general and at the access to higher status professional, technical and managerial jobs as the most telling indicator of social inclusion in particular we find notable ethnic disadvantages in both contexts, especially for non-EU immigrants and/or nationals. However, the general background against which these disadvantages appear as well as the mechanisms which seem to account for the observed inequalities obviously differ between the two countries.

First of all, the transition from the educational system to the labour market turns out to be quicker in Belgium as the rates of entering the first significant job there are much higher (especially for higher status jobs) soon after leaving education. In contrast, a converse pattern of transition process is found in Spain where the risks of entering any kind of job are much lower immediately after leaving school but tend to slightly increase in the following years, most notably for lower status blue-collar jobs. Although general patterns of labour market entry of young people differ in Belgium and Spain, in both countries non-EU immigrants and/or nationals face a clear disadvantage with respect to higher status jobs, which is manifested in a highly significant negative relative effect on the baseline transition rates. While the parametric models do not allow to distinguish between more than two wide ethno-national groups (EU and non-EU immigrants and/or nationals), the survivor functions presented in section 4.2 show that ethnic disadvantages of Moroccan youth are indeed pronounced in both countries and that attempts should be made to invest in larger sample sizes allowing finer distinction between representatives of different ethnic minorities groups.

The time-dependent multivariate analyses reveal that the mechanisms leading to gross disadvantages at the labour market entry seem to be dissimilar in both countries. In Belgium, on the one hand, ethnic inequalities with respect to access to higher status jobs are to a large degree a matter of inferior educational qualifications. However, although the effect of ethnicity considerably diminishes when controlling for education (and also parental education) it does not completely disappear. This suggests that discrimination in the labour market seems to be an additional factor responsible for ethnic inequalities at labour market entry. In Spain, on the other hand, differences in educational qualifications and social origin (in terms of parental education) do not seem to account for ethnic inequalities. Rather we find a nearly unchanged negative net effect for non-EU ethno-national group controlling for these and other variables which points to the existence of marked discrimination. In addition to that we also find that the gap between non-EU and indigenous youth even widens with the passage of time after leaving education which might be attributed to a process of self-selection: Since job search costs and (subjective) probability of success in finding job are lower among minority youth they might give up their search for higher status jobs earlier.

The analyses of the time-dependent risk of entering other types of jobs, i.e. service and clerical as well as blue collar employment, and especially the changes in the relative disadvantages of the ethnic minorities' youth over time provides further interesting results and confirms the existence of other mechanisms underlying labour market integration processes. For example, we find that in Belgium the gap between the indigenous youth and non-EU nationals with respect to blue-collar jobs decreases over time which may be explained by the improved specific knowledge of the latter on the labour market of the host country. Self-selection mechanism might be also taking place: some discouraged ethnic minorities' job seekers give up their search of higher status jobs and are pushed to the pool of lower-status job seekers, where they might succeed more quickly. Unfortunately, we lack some more direct measures of country-specific capital like language skills or information networks to validate and strengthen our interpretations. Also we lack some other variables important to account for remaining ethnicity effects, like e.g. place (region) of residence, which in previous research proved to be essential for both countries because of the regional differences in the chances of finding employment. Despite of these shortcomings, however, the data of the EUFLS 2000 ad hoc module provide useful insights into mechanisms of ethnic inequalities at labour market entry in both countries and thus enhances the understanding of the processes of immigrant integration in general.

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