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Migrants, minorities, mismatch?

Skill mismatch among migrants and ethnic minorities in Europe

Luxembourg:
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Europe 123, 570 01 Thessaloniki (Pylea), GREECE
PO Box 22427, 551 02 Thessaloniki, GREECE
Tel. +30 2310490111, Fax +30 2310490020
E-mail: info@cedefop.europa.eu
www.cedefop.europa.eu

Foreword

The severity of the financial and economic crisis has forced European and national policy-makers to address its immediate employment impact. Now that there are some signs of recovery, policies are increasingly combining crisis exit strategies with making progress in addressing long-term structural issues and trends, such as skill upgrading, greening and population ageing. One main concern is that once recovery is fully under way, it may be hampered by skill shortages in certain domains.

International migration is sometimes seen as a way to a better match in the supply of people with the right skills and demand for labour. Europe is currently adapting its migration policies by forging closer links between the skills migrants have and the needs of our economies. To see new migration waves as the only solution to skill shortages would be short-sighted. Substantial progress can also be made by looking at how the skills and potential of migrants and ethnic minorities already present in our societies can alleviate future skill shortages. In debates on tapping the potential of these groups the issue of recognition and validation of qualifications is a core element but there is relatively little empirical evidence on the extent to which their skills match the jobs they hold.

This study takes a detailed look into skill mismatch among migrants and ethnic minorities and reflects on other labour-market outcomes. It is the second empirical study in Cedefop's new line of work on mismatch that started in 2008. The study is novel in three respects. First, it focuses on both migrants and ethnic minorities to obtain the most accurate picture possible with current data. Second, for the first time it provides an in-depth review of skill mismatch among these two groups in Europe and explores the factors that contribute to it. Third, the study offers several important implications that can assist policy-makers.

Europe is on the road to recovery and, at the same time, aiming to achieve the ambitious targets set in the Europe 2020 strategy. Skills are essential in reaching the aims of that strategy and there are indications that the potential of people with a migrant background and of those entering the European Union as migrants is not fully tapped. This report explores the situation of people with a migration background from a matching perspective: I trust it can enrich the evidence base to support future labour-market and migration policies in the European Union.

Christian F. Lettmayr
Acting Director of Cedefop

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Executive summary

With Europe slowly but steadily exiting from the economic crisis, long-term trends such as skill upgrading and population ageing, and their implications for the availability and demand for skills, are returning to the policy debate. Migration is often seen as an effective instrument to alleviate possible labour-market shortages in Europe. The European Union (EU) is taking action to tap the potential of migrants more effectively by promoting integration and removing barriers to employment, such as discrimination and insufficient recognition of skills. This can contribute to reducing the waste of skills occurring when highly educated migrants find themselves employed in low-skilled or low-quality jobs. Outlining the priorities on enhanced European cooperation in vocational education and training, the Bruges Communiqué (European Commission, 2010b, p. 4) underlines how the recognition of skills can also help attract learners from third countries.

This report aims to increase our understanding of mismatch among migrants and ethnic minorities in Europe and its impacts. It also reviews relevant international literature on the topic and looks at various aspects of labour-market performance of these groups. The report examines skill mismatch among migrants and ethnic minorities and their labour-market performance in 15 European countries based on data from the European social surveys (ESS) of 2002, 2004, 2006 and 2008.

Previous literature on skill mismatch relating to these two groups, while limited, suggests that both are more susceptible than the indigenous population to skill mismatch, unemployment, inactivity and adverse working and living conditions. For example, rates of return on education tend to be lower, controlling for other factors, perhaps due to the less than perfect transferability of migrant skills. There is also some evidence that migrants from outside the EU are more adversely affected by these aspects than those moving from one EU country to another. Ethnic minorities may suffer from a lack of job and social networks, and reduced job search, on account of lack of car ownership. Some may also suffer from language difficulties.

The analyses in this report show that overeducation varies from 20% in some countries to 40% in others. The migrant share in the employee population varies between 1 and 19% depending on country; most are migrants from outside the EU. Those educated in the country of origin are likely to suffer more from educational mismatch than those educated in the host country. Migrants, but not

necessarily members of ethnic minorities, seem to experience more overeducation than their native counterparts. They are slightly more likely to be found in jobs requiring tertiary education and in elementary occupations, consistent with job polarisation. There is, however, little evidence of concentration in industrial distribution. Unemployment rates are substantially higher for migrants and ethnic minorities.

Multivariate analysis shows that migrants from outside the EU are susceptible to overeducation, particularly when educated abroad, but evidence for differential overeducation for ethnic minorities is mixed. There are substantial differences across countries. Migrants are not more prone to undereducation than the indigenous population, but ethnic minorities are so. Both groups are more prone to unemployment and inactivity. Feelings of discrimination are evident within both groups. On the positive side, overeducated migrant and ethnic minority workers are more likely to achieve upward mobility in terms of educational achievement and are more likely to be found in higher income households.

EU policy can contribute to making better use of the skills migrants have and to alleviating current and future skill shortages. Several policy implications emerge from this study. First, policies should focus particularly on migrants from non-Member States and attempts should be made to put migration in a more positive light. Similarly, more development and a better implementation of common standards are needed for the recognition of qualifications obtained abroad, especially for qualifications from outside the EU. For both migrants and ethnic groups, improving job access should be a high priority. Public employment services could play an important role in preparing both groups to be more competitive in applying for jobs. On the employer side, giving workers more autonomy is associated with a lower probability of overeducation. This may be aided by encouraging employers to give both migrants and ethnic minorities greater training opportunities, including language training.

Introduction

Matching skills and jobs is high on the European policy agenda. With Europe slowly but steadily exiting from the economic crisis, long-term trends such as skill upgrading and population ageing, and their implications for the availability and demand for skills, are returning to the policy debate. Next to upgrading skills and promoting longer working lives, migration is often seen as a possible way to alleviate labour-market shortages in Europe.

Europe 2020, the EU strategy for the next decade is about smart, sustainable and inclusive growth. One of its flagship initiatives is the agenda for new skills and jobs, which presents policy-relevant elements that promote full employment in Europe. Four priorities drive this agenda: better functioning labour markets: a more skilled workforce; better job quality and working conditions; and stronger policies to promote job creation and demand for labour (European Commission, 2010a, p. 2-3).

Making progress on the second priority requires, among others, better use of the potential of intra-EU mobility and third country migration in meeting labour-market needs. The EU is taking action to tap the potential of migrants in the EU more effectively (European Commission, 2010a, p. 9) by promoting integration and removing barriers to employment, such as discrimination and insufficient recognition of skills. This can contribute to reducing the waste of skills occurring when highly educated migrants find themselves employed in low-skilled or low-quality jobs.

This report aims to increase our understanding of mismatch among migrants and ethnic minorities in Europe and its impacts. It also reviews relevant international literature on the topic and looks at various aspects of labour-market performance of these groups. The focus of this study is an empirical investigation, based on the European social survey (ESS), of skill mismatch among migrants and ethnic minorities, whether or not they are migrants. It divides naturally into three parts:

(a) an examination of factors and circumstances contributing to over- and undereducation among the above groups;
(b) an assessment of the impact of training and learning on skill mismatch;
(c) an analysis of the implications of skill mismatch among these groups.

The analyses in this report serve several purposes. They give, for the first time, a detailed assessment of the incidence of skill mismatch among migrants

and ethnic minorities. By looking at drivers and impacts of skill mismatch among these groups, the results can be particularly useful for policy-makers in tapping the potential of migrants already residing in the Member States and making the most of future migration in terms of addressing the needs of European labour markets. Five research questions guide the remainder of this report:

(a) what are the differences between migrants and minorities and the majority population in labour-force participation, employment/unemployment and the structure of employment, measured in terms of the occupational and sectoral distribution? Is there any tendency for migrants and minorities to be concentrated in less favoured occupations and industries?

(b) how does the incidence of mismatch differ between migrants and minorities and the majority population? What impact, if any, does educational attainment and further training have on this and do differences exist according to whether the human capital investment is made in the host country or country of origin?

(c) are members of migrant and minority groups more likely to be mismatched if they feel they are discriminated against? What impact do labour-market characteristics and the country setting have on this?

(d) are there intergenerational differences between the experience of migrants and minorities and the majority population?

(e) are there any different answers to the above questions when we consider origin and religious background?

After reviewing literature on skill mismatch and migration in Chapter 1, we briefly describe data used in this report and provide some relevant definitions (Chapter 2). We begin the empirical analysis with some basic descriptive statistics in Chapter 3. Chapter 4 presents regression results for the determinants of overeducation, the determinants of undereducation, unemployment and inactivity, and discrimination, educational mobility and household income, and sheds light on the issue of what drives mismatch and what its impacts are. Chapter 5 concludes and provides some policy implications.

CHAPTER 1

Skill mismatch and migration: reviewing literature

The question of immigration has grown in importance in Europe not only for its extent but also for its potential to alleviate the effects of population ageing and labour and skill shortages (European Commission, 2008).

This chapter reviews international literature on skill mismatch among migrants and ethnic minorities, plus related topics. Substantial literature focuses on labour-market disadvantages of migrants and ethnic minorities, but literature on skill mismatch and these two groups is limited. There is reason, however, to believe that similar forces may be at work in relation to the impact of mismatch for both groups, with ethnic minorities who are also immigrants facing the most severe disadvantage.

Introducing a symposium on Migration, ethnicity and identity in host labour markets, Constant et al. summarise: 'the social and labour market integration of ethnic-minorities in the EU is still a major political, societal and economic challenge […] the EU recognises that culture and diversity are vital elements to its countries' economies and competitiveness. [Immigrants] tend to have higher unemployment rates, lower occupational attainment and wages, a looser labour market attachment and are least able to find and hold good jobs. Worse, mobility remains slow or non-existent across generations' (Constant et al., 2009, p. 6).

1.1. Attitudes and behavioural patterns

For Gang et al. (2002) young people, the higher educated and the more skilled are more favourably inclined towards ethnic minorities and more supportive of immigrants than the permanently sick, disabled, discouraged workers, unemployed and retired who see these minority groups as a threat when economic conditions are adverse. Attitudes also vary from one country to another. Data from the European social survey 2004 suggest that the percentage of respondents in the ethnic minority population who feel discrimination ranges from less than 10% in Luxembourg to nearly 90% in the Czech Republic.

1.2. Migrant status

Cross-country comparisons of immigrant status are not straightforward. In the major settlement countries, immigrants are the foreign-born, but in many other OECD countries they are those holding foreign nationality. While foreign-born can acquire the nationality of the country of residence, native-born do not necessarily acquire the citizenship. To address this problem OECD (2008) created a new database on immigrants in OECD countries (DIOC), which focuses on the country of origin (as does the ESS). However, it only reduced difficulties as those owning citizenships on the grounds of *jus sanguinis* but born abroad may be included in the immigrant population. Uncertainty also arises over the degree of completeness in the coverage of certain groups, such as undocumented migrants, short-term migrants and asylum seekers. DIOC is also unable to control the geographic location of education and training received, which may affect its quality, either real or perceived.

1.3. Education

The effect of one-year education on earnings is higher for native-born than foreign-born employees (Chiswick and Miller, 2008). In an early US study, Chiswick (1978) found that native-born Americans received a return of 7.2% for a year of education compared to 5.7% for the foreign-born. Similar findings were reported for Canada (Baker and Benjamin, 1994), Australia (Beggs and Chapman, 1988), and the UK (Shields and Price, 1998) as well as in some other countries including Germany and Israel. Chiswick and Miller themselves suggested three possible explanations:

(a) there may be self-selection in migration which impacts more on the less well educated;
(b) there may be a low degree of international skill transferability;
(c) discrimination may increase with level of education.

In a further paper, Chiswick and Miller (2009) suggested some theoretical explanations for these empirical regularities. These include search and match theory, since immigrants may lack information on the nature of the host country labour market, though this effect should diminish over time. Human capital theory implies that immigrants may have difficulty in transferring their foreign qualifications and work experience to the destination country, though formal education may be more transferable than experience. Advocating that technology progress will take place over time and will be accompanied by a resultant shift in

labour demand, technology change theory implies that the incidence of overeducation among immigrants will be related to the stage of economic development in the countries of origin and destination, with those from less developed countries suffering from a greater degree of overeducation. For example, a mechanical engineering qualification in a less developed country may be of little relevance in a more developed country demanding equivalent-level qualifications of a more electronic nature. Hence, much of this overeducation may be ascribed to the problem of horizontal mismatch. Finally, the screening hypothesis implies that risk averse employers may be uncertain about what foreign qualifications signal precisely, so that there may be considerable overeducation at date of arrival, which should gradually decline over time as the migrants display their true level of productivity. However, with no adequate data it is difficult to obtain evidence.

1.4. Mismatch

What do the empirical results show? First, for the US, Chiswick and Miller (2008) analysed 510 three-digit occupations in the 2000 census. Of the native-born men, 42.9% are correctly matched against 28.09% of the foreign-born, who are more likely to be undereducated. The returns on education for appropriately matched men are approximately the same for native- and foreign-born workers, but returns on overeducation are higher for the native-born (5.6% versus 4.4% for the foreign-born). In contrast, the penalty for undereducation is lower for the foreign-born (-2.1% versus -6.7% for the native-born). Chiswick and Miller suggested the lower pay-off on overeducation for the foreign-born is consistent with less-than-perfect international transferability of skills, while the higher return on undereducation may be due to higher motivation or ability among those foreign-born who possess lower levels of education. Overeducation is also more common among recent labour-market entrants, while undereducation is more common among foreign-born who spent longer in the US. Those who lack English language skills are less likely to be matched.

The last finding mirrors the situation in Australia. Using data from the longitudinal survey of immigrants to Australia covering two periods (1993-95 and 1999-2000), Green et al. (2007) found that overeducation is markedly higher among immigrants from non-English speaking backgrounds, and their returns on overeducation are lower than those from English speaking backgrounds. Further, while being a wage earner in the country of origin generally increases the

likelihood of employment in Australia, for immigrants from non-English speaking backgrounds it increases the likelihood of overeducation. This is suggestive of difficulties in transferring labour-market experience across countries for this group.

Messinis (2007) used the panel element of HILDA, 2001-05 to examine the incidence of both overeducation and overskilling among second generation Greeks and Italians, finding both forms of mismatch to be greater among these groups than the rest of the sample. Parental occupation and education are important predictors of overeducation: the higher one's parent in the occupational status scale, the greater the likelihood that a respondent is overeducated or overskilled. Incidence is also linked to a lack of employer provision for new job skills.

Battu and Sloane (2004) analysed the incidence and wage effects of overeducation among ethnic minorities in the UK, using the fourth national survey of ethnic minorities, 1993-94. They found that the incidence of overeducation is higher among ethnic minorities, and consequences for earnings are more severe. Workers with foreign qualifications are also more likely to be mismatched than those with UK qualifications, while high ethnic concentrations at ward (local) level are associated with a greater degree of mismatch. A striking feature of this study is the finding that outcomes differ substantially among different ethnic minority groups.

Language fluency increases the likelihood of mismatch. The more educated, who are more prone to overeducation, are more likely to be fluent speakers. Lindley (2009) used the labour force survey 1993-2003 to analyse overeducation among UK immigrants and minority ethnic groups. Because the labour force survey codes foreign qualifications into a composite category 'other qualifications', she limited the analysis to those immigrants with UK higher qualifications, differentiating the paper from the above study. She also split the analysis into younger and older age groups. As in the Australian case, she found that most UK immigrant and minority ethnic groups are better educated on average than their white counterparts. Immigrant men are more likely to be overeducated than native men (27.3% versus 22.5%) and less likely to be undereducated. These results are consistent with those of Dex and Lindley (2007), who found that overeducation is higher among black African, Chinese and other non-white groups. As also found by Battu and Sloane there is no evidence that coming from an English-speaking country reduces the likelihood of overeducation. The return on overeducation (again in line with Battu and Sloane) is highest for white males (12.4%), as opposed to 11.6% for non-white immigrants and 10.1% for non-white natives.

There are few similar studies in other European countries: exceptions are Fernandez and Ortega (2006) for Spain, Nielsen (2009) for Denmark, Lianos (2007) for Greece and Dell'Aringa and Pagani (2010) for Italy. The Spanish study suggested that immigrants face a higher incidence of overeducation than natives and this does not diminish in the first five years after arrival, thus exhibiting a degree of persistence. The immigrant/native differential upon arrival is 16 percentage points for men and 23 percentage points for women. Using panel data and a means-based method of estimation, Nielsen found that foreign-educated immigrants are more prone to overeducation than both native Danes and immigrants educated in Denmark, with 39%, 15% and 20% overeducation rates respectively. For Greece, Lianos found that in 1998-2000 40.3% of college graduates were overeducated, but the figure was 66% for immigrant graduates, compared to 37% for Greek graduates. Most immigrants in Greece originate from eastern Europe, especially from Albania. According to Dell'Aringa and Pagani, upon arrival in Italy, immigrants are much more likely to be overeducated than natives and work experience, whether gained in the country of origin or in Italy, has no effect in improving job matches. For natives, overeducation acts as an inducement to search for a new job; it is not for mismatched immigrants. Immigrants are more willing than natives to accept poor working conditions in low quality occupations. This may be symptomatic of local population unwillingness to do such jobs and of immigrants perceiving discrimination.

1.5. Qualifications

Based on the new database on immigrants in OECD countries (DIOC), OECD (2008) provides details on overqualification among the native-born and immigrants in 21 selected OECD countries, circa the year 2000. Education and job qualification levels are grouped into three categories – low, intermediate and high – enabling overqualification rates to be estimated for individuals holding intermediate or higher qualifications who are in jobs that do not require the level of education they possess. The categories are, therefore, very broad. In all but two countries (New Zealand and Slovakia) immigrants are more likely to be overqualified than host country nationals. This is especially the case in southern Europe (e.g. Greece, Spain and Italy) and in some countries of northern Europe (e.g. Denmark and Sweden), where the percentage of immigrants overqualified is at least twice that of the native-born. The percentage of the employed foreign-born overqualified ranges from less than 10% in New Zealand and Slovakia to over 30% in Greece. The OECD observes that, in southern Europe, immigration

is a relatively recent phenomenon and mainly involves workers who seem to be prepared to accept relatively unskilled jobs upon arrival in the host country, though with an expectation of subsequent upward mobility. If this is the case, overqualification should diminish significantly as length of stay increases. In contrast, in Nordic countries the proportion of migrants entering the country as workers is low and most of them are refugees who, though often relatively highly skilled, face extra problems arising from their status and their limited language capabilities. Further, employers may not be very knowledgeable about the value of the foreign qualifications they possess. Some countries seem to be better than others in finding employment for immigrants, but at the cost of high rates of overqualification (e.g. Italy), while some have lower rates of overqualification, but at the cost of higher rates of unemployment (e.g. Belgium).

In general, the EU (2008) suggested that, in terms of employment and unemployment, immigrants have fared better in the new host countries of southern Europe than in the old Member States of northern Europe. It attributes this to several factors: the relatively high shares of migration in northern Europe which are unrelated to employment, but more to humanitarian concerns; the tougher restrictions on access to employment in northern Europe and lower acceptance of undeclared or irregular work; and differences in the welfare state systems, with the less generous systems in southern Europe putting greater pressure on migrants to work there. The European Commission (2008) drew attention to the need to distinguish between mobility within the EU and migration from outside the EU, referred to as third country migrants. The latter are twice as numerous as the former and face unemployment rates which are three times as great, lower employment rates and are often more likely to have lower quality jobs or ones for which they are overqualified.

1.6. Car ownership

Travelling to work is one aspect not discussed so far. Gautier and Zenou (2010) pointed out that many members of ethnic minorities (and presumably immigrants too), cannot afford a car; this can generate differences in labour-market outcomes, even with no discrimination or exogenous differences in distance from residence to work. For the US, empirical evidence shows that most African American workers are, relative to whites, less likely to own a car and forced to use public transport and search for jobs in a smaller area; therefore, their commuting journeys are shorter but commuting time longer (on average, twice as long as by car). Though the authors did not mention overeducation, restricted job

search suggesting no car ownership may result in overeducation. Consistent with the US evidence, Battu and Sloane (2004) noted that no car ownership, shorter distance, and longer duration in commuting to work also applied to their ethnic minority sample. Further, no car ownership also implies lower earnings. According to Green et al. (2007) no car ownership in Australia means lower employment probability.

1.7. Job search methods

Methods of job search may impact on the degree of mismatch. Battu et al. (2011) found that, in the UK, the less assimilated ethnic unemployed are more likely to use their friends and family as the main method of job search, but have less chance succeeding than either whites or more assimilated ethnics who use more formal methods such as employment agencies or job advertisements. According to Frijters et al. (2005) immigrants fare worse whatever method they use. Whether this is the result of discrimination or the failure of immigrants to adopt the culture and identity of the majority of the population remains uncertain.

1.8. Summary

To summarise, immigrants are not a random subset of the population in the country of origin, but a self-selecting group. Their skills may be less than perfectly transferable and they may also face discrimination. Overeducation is higher for migrants and some, though not all, ethnic minority groups. Migrants from countries where language differs from that of the host country may be at a particular disadvantage in some countries. Once migration has taken place, the limited area of job search as a result of lack of car ownership or inefficient methods of job search may reduce effective job seeking and increase the possibility of mismatch.

CHAPTER 2
The European social survey

The European social survey (ESS) is academically driven and designed to chart and explain attitudes and behavioural patterns across Europe. It is a biennial cross-section survey carried out in 2002/03, 2004/05, 2006/07 and 2008/09. Interviewees are aged 15 and over residing in private households, regardless of nationality, citizenship or language. Questions related to skill mismatch are limited, but detailed information on migrants and minorities is available. However, we did not attempt to assess mismatch using ESS data but used the EU labour force survey (LFS). Because of its larger sample size it is more reliable to identify modal qualification levels within occupations. While using this secondary data source to benchmark the mismatched, the actual mismatch classification, and all following empirical modelling, is conducted on individual level data from the ESS.

We focus on migrants and ethnic minorities in EU Member States and Norway and Switzerland wherever possible. Definitions are provided in Box 1. In practice, problems emerged due to the erratic presence of some countries across waves. For example, although the UK (excluding Northern Ireland) is included in the 2004/05 dataset, the highest qualification field is empty and, similarly, the data on employment status appears to be empty for France in 2002/03 and 2004/05. We are able to construct mismatch measures for 15 countries (including Norway and Switzerland) on the basis of estimating the modal values for each two-digit occupation using the EU labour force survey and comparing this with the highest educational attainment of respondents in the ESS. This means we are unable to construct estimates for the EU as a whole. In 2008 we have 46 174 usable observations in the ESS ranging from 1 476 in Finland to 4 395 in Germany.

Box 1. **Definitions**

Migrants

Someone born in a country different from the country of domicile. The migration occurred within the last year or longer ago. This is consistent with the definition of 'foreign–born' rather than 'foreign nationality'. We distinguish between migrants born in the EU, which would reflect more mobility rather than migration (migrant2) and migrants born in a non-EU country (migrant3).

Ethnic minorities

A member of an ethnic minority is someone who answers positively to the question 'Do you belong to a minority ethnic group in the country in which you are resident?' where 'belong' refers to attachment or identification.

Ethnic migrants

Members of ethnic minority groups born in a country different from the country of domicile.

CHAPTER 3

Assessing the situation: migrants and ethnic minorities in Europe

This chapter provides a descriptive analysis of skill mismatch and the labour-market situation of the majority population, migrants and ethnic minorities in Europe. We start with a general review of overeducation in various countries and reflect on recent trends. We then look at the migrant and ethnic minority population, distinguishing between those educated abroad and those educated in the host country. Subsequently, we examine overeducation among migrants and ethnic minorities. We also look at employment patterns among these groups in terms of educational attainment, occupation and industry, and compare with the majority population. Finally, we compare migrants and ethnic minorities to the majority population in terms of unemployment, inactivity, undereducation, intergenerational mobility, access to training and perceptions of discrimination. The figures reported in this chapter all come from the European social survey (ESS). Although EU labour force survey data might have been used as a better alternative in some cases, we use ESS throughout for reasons of consistency; also, the ESS is unique in the sense that, next to migrants, it contains detailed information on ethnic minorities. When looking at migrants, this chapter presents the overall situation by distinguishing between the majority population and the minority population consisting of migrants from outside the EU and people from other EU Member States.

3.1. Overeducation

Our education mismatch figures are obtained by combining the ESS data on actual individual qualifications with data from the EU labour force survey for the relevant year, based on the modal education levels within each country for two-digit occupations. Individual responses above the mode indicate overeducation and those below indicate undereducation. Table 1 presents the estimated incidence of overeducation as a share of employees in employment for each country in each year, using weighed data to correct for underrepresentation of some groups in the sample designs in the countries participating in the ESS. Overeducation rates are found to vary widely across the countries within our

sample and, at over 40%, are highest in France and Belgium up to 2006 and lowest in most years, at below 20%, in Finland, Hungary, Norway, Slovenia and Switzerland. Generally speaking, the incidence of overeducation is relatively stable across time. However, there are some notable exceptions. The rate of overeducation fell dramatically between 2006 and 2008 in Belgium, France and Poland, while Norway and Sweden experienced large reported falls in the period 2004 to 2006. The large variation in the rates of overeducation within some countries across time is potentially worrying as, in the absence of a plausible economic explanation, this leads to concerns over the consistency of the country level samples. A large fall in the rate of overeducation implies that the modal educational value of a particular occupation must have risen in the intervening period, perhaps through a large number of workers moving from overeducated to matched status by changing occupations or being promoted by their existing employer. Variations in the educational make-up of an occupation can also arise as a consequence of either changing participation rates and/or large flows of retirees/new-entrants, but we would expect these to be gradual as levels of educational attainment are unlikely to change dramatically in a short period. In France the educational mode increased from ISCED level 2 to ISCED level 3 in occupations 91 (Activities of membership organisations nec), 92 (Recreation, cultural and sporting activities), and 93 (Other service activities). However, as workers in these occupations account for less than 5% of the total employee sample, this is unlikely to explain much of the movement, suggesting that variations in the education make-up of the sampled workforce lie behind the trend. A similar pattern is found in Belgium, where educational requirements increased in only one small occupation between 2006 and 2008.

Table 1. **Overeducation rates by country and year**

	2002	2004	2006	2008
Belgium	0.40	0.39	0.47	0.26
Denmark	0.26	0.24	0.24	0.25
Finland	0.12	0.18	0.18	0.17
France	0.43	0.42	0.47	0.19
Germany	0.19	0.21	0.26	0.30
Hungary	0.14	0.11	0.12	0.13
Netherlands	0.26	0.32	0.29	0.29
Norway	0.18	0.41	0.16	0.18
Poland	0.30	0.26	0.25	0.17
Portugal	0.22	0.28	0.29	0.30
Slovenia	0.10	0.08	0.14	0.17
Spain	0.41	0.24	0.20	0.21
Sweden	0.29	0.30	0.16	0.16
Switzerland	0.16	0.20	0.19	0.17
UK	0.17	n/a	0.25	0.25

NB: all figures refer to nationally weighted data; n/a denotes that a figure is not available.

3.2. Migrants and ethnic minorities

Migrant proportions as a share of employees in employment by country and year are reported in Table 2: similar figures for ethnic minorities are reported in Table 3. Again there are substantial variations in the 2002 migrant share within the sample, ranging from just 1% of employees in employment in Hungary to 19% in Switzerland. According to the data, the migrant share of employment in Poland is consistently below 1%. Relative to the pattern for overeducation, the migrant shares within countries are relatively stable over time. However, there are some exceptions. The migrant share of employees in employment increased steadily in the Netherlands and Spain from 6% in 2002 to 11 and 13% respectively in 2008. The migrant employment share increased from 19 to 27% in Switzerland between 2006 and 2008, while it fell back slightly in France over the same period.

Clear distinction should be made between sources of migrant education. Those educated abroad are more prone to educational mismatch for several reasons including uncertainty about the quality of their credentials and/or lack of transferability of skills acquired due to problems of professional recognition or regulation. While there is no direct question in data relating to where each respondent's highest qualification was obtained, we combine information on the length of time spent in the country with the individual's age to impute this. The employment share of migrants educated abroad is given in Table 4. There are

relatively low levels of variation in this, with the 2002 shares in relation to the working population ranging from 1% (or below) in Denmark, Finland, France, Hungary, Poland and Slovenia to 5% in Switzerland. There is a high degree of variation over time with the share of migrants educated abroad rising rapidly in Spain, Switzerland and the UK. This most likely reflects the large inflows of migrants from the Member States that joined the EU in 2004 and 2007.

Table 2. **Proportion of migrants in terms of employment by country and year**

	2002	2004	2006	2008
Belgium	0.07	0.08	0.08	0.09
Denmark	0.05	0.05	0.07	0.06
Finland	0.03	0.02	0.04	0.03
France	0.09	0.07	0.09	0.07
Germany	0.08	0.09	0.08	0.09
Hungary	0.01	0.03	0.03	0.02
Netherlands	0.06	0.08	0.11	0.11
Norway	0.07	0.07	0.07	0.09
Poland	0.00	0.00	0.01	0.00
Portugal	0.09	0.08	0.08	0.08
Slovenia	0.09	0.09	0.09	0.08
Spain	0.06	0.10	0.11	0.13
Sweden	0.10	0.09	0.10	0.11
Switzerland	0.19	0.20	0.19	0.27
UK	0.09	0.09	0.10	0.10

NB: all figures refer to nationally weighted data.

Table 3. **Proportion of ethnic minorities in terms of employment by country and year**

	2002	2004	2006	2008
Belgium	0.02	0.03	0.02	0.03
Denmark	0.02	0.02	0.03	0.03
Finland	0.01	0.01	0.01	0.01
France	0.04	0.03	0.03	0.05
Germany	0.04	0.04	0.04	0.05
Hungary	0.04	0.02	0.05	0.04
Netherlands	0.04	0.05	0.08	0.08
Norway	0.02	0.03	0.02	0.03
Poland	0.03	0.01	0.01	0.01
Portugal	0.01	0.02	0.04	0.03
Slovenia	0.03	0.02	0.02	0.02
Spain	0.02	0.03	0.04	0.03
Sweden	0.03	0.02	0.02	0.03
Switzerland	0.05	0.07	0.07	0.10
UK	0.07	0.06	0.06	0.07

NB: all figures refer to nationally weighted data.

Table 4. **Employment share of migrants educated abroad by country and year**

	2002	2004	2006	2008
Belgium	0.02	0.02	0.02	0.03
Denmark	0.01	0.01	0.01	0.02
Finland	0.01	0.00	0.01	0.01
France	0.01	0.01	0.02	0.02
Germany	0.02	0.03	0.03	0.03
Hungary	0.00	0.01	0.01	0.01
Netherlands	0.02	0.01	0.03	0.02
Norway	0.03	0.03	0.04	0.05
Poland	0.00	0.00	0.00	0.00
Portugal	0.03	0.03	0.04	0.03
Slovenia	0.01	0.01	0.01	0.01
Spain	0.04	0.07	0.08	0.09
Sweden	0.02	0.02	0.03	0.03
Switzerland	0.05	0.06	0.06	0.10
UK	0.02	0.04	0.04	0.05

NB: all figures refer to nationally weighted data.

3.3. Overeducation among migrants and ethnic minorities

It is clear from the descriptive data that, when compared to the results in Table 1, migrants generally experience higher rates of overeducation than their native counterparts; this is not always the case for ethnic minorities (Table 5). Based on the 2002 distribution, the differential is particularly marked in Belgium, Denmark, Spain, Portugal and the UK. However, in several countries, such as Germany, Hungary, Slovenia and Switzerland, migrant rates of overeducation correspond very closely to those of natives: in Finland it is lower.

The study also attempts to determine the relationship between mismatch and ethnic minority status within Europe. In 2002, the ethnic minority share of the workforce is found to be the highest in the UK (7%) (overtaken in 2008 by Switzerland, 10%, and the Netherlands, 8%) and the lowest (1%) in Portugal and Finland (Table 5). Ethnic minority representation is relatively stable within our sample of countries across the four waves of data. However, the Netherlands saw its share of ethnic minority workers double from 4% in 2002 to 8% in 2004.

Table 5. **Migrant and ethnic minority overeducation rates by country and year**

	2002		2004		2006		2008	
	Migrants	Ethnic	Migrants	Ethnic	Migrants	Ethnic	Migrants	Ethnic
Belgium	0.53	0.47	0.41	0.42	0.56	0.64	0.26	0.32
Denmark	0.37	0.31	0.24	0.27	0.36	0.21	0.27	0.23
Finland	0.09	0.00	0.20	0.40	0.30	0.00	0.20	0.25
France	0.48	0.50	0.42	0.39	0.45	0.45	0.20	0.26
Germany	0.20	0.14	0.15	0.16	0.26	0.21	0.30	0.29
Hungary	0.14	0.14	0.18	0.00	0.29	0.04	0.10	0.05
Netherlands	0.34	0.34	0.39	0.31	0.35	0.36	0.34	0.27
Norway	0.23	0.17	0.54	0.52	0.38	0.36	0.32	0.33
Poland	0.00	0.45	1.00	0.25	0.40	0.00	0.00	0.00
Portugal	0.44	0.50	0.38	0.60	0.60	0.32	0.55	0.43
Slovenia	0.09	0.18	0.04	0.00	0.04	0.00	0.03	0.00
Spain	0.59	0.38	0.30	0.33	0.39	0.47	0.33	0.17
Sweden	0.36	0.41	0.50	0.59	0.31	0.36	0.28	0.19
Switzerland	0.15	0.11	0.23	0.18	0.23	0.13	0.17	0.16
UK	0.30	0.32	n/a	n/a	0.33	0.29	0.29	0.32

NB: all figures refer to nationally weighted data; n/a denotes that a figure is not available.

3.4. Employment patterns

Tables 6, 7 and 8 give the educational, occupational and sectoral distributions of all employees, migrants and ethnic minorities by education and sector within the pooled sample for the most recently available survey of 2008. With respect to education, migrants are relatively more numerous at both extremes of the distribution, with higher proportions at below primary and at second tertiary levels (Table 6). This emphasises the point that migrants tend to be a self-selecting group in terms of the migration decision and are more likely to be found among segments of the population with the most advantaged and disadvantaged employment prospects. Relative to the overall sample, those from ethnic minority backgrounds are more likely to have their highest level of qualifications at primary level or below and are less likely to hold first tertiary qualifications. These education differences are not entirely reflected in the occupational distribution, with migrant workers less dominant in professional/associate professional qualifications despite having higher proportions of graduate qualifications (Table 7). Both migrant and ethnic minority workers are much more likely to be employed within elementary occupations relative to the average. Ethnic minorities are less likely to be employed as legislators, senior officials and managers, but slightly more likely to be employed in professional occupations. This partly fits with the view that there has been polarisation of jobs.

Table 6. **Educational distributions of migrants and ethnic minorities: ESS 2008**

Education Level	All	Migrants	Ethnics
Below primary	0.5	2.0	1.5
Primary	5.8	7.4	8.8
Lower secondary	16.4	17.1	16.6
Upper secondary	35.8	33.5	35.6
Post secondary	5.3	4.2	6.1
First tertiary	34.7	33.3	28.9
Second tertiary	1.5	2.6	2.5
	100.0	100.0	100.0

NB: all figures refer to nationally weighted data; column 1 figures also include migrants and ethnics.

Table 7. **Occupational distributions of migrants and ethnic minorities: ESS 2008**

Occupation	All	Migrants	Ethnics
Legislators, senior officials, managers	8.2	6.3	4.5
Professionals	18.4	16.7	18.6
Technicians and associate professionals	20.1	14.5	16.4
Clerks	11.1	9.3	8.9
Service workers	13.9	17.1	17.0
Skilled agricultural and fishery workers	0.8	0.7	0.2
Craft workers	11.6	11.9	10.8
Plant and machine operatives	7.3	8.3	7.5
Elementary occupations	8.6	15.3	16.1
	100.0	100.0	100.0

NB: all figures refer to nationally weighted data; column 1 figures also include migrants and ethnics.

In terms of industrial distribution of employees, limited evidence supports the view that migrants are subject to considerable sectoral segregation. However, migrants are underrepresented in segments of the economy dominated by the public sector, such as public administration and defence, and education, and somewhat overrepresented in hotels and restaurants and manufacturing (Table 8). Meanwhile ethnic minorities are underrepresented in government dominated sectors and overrepresented within transport and storage, and hotels and restaurants. While those employed in hotels and restaurants tend to be in low-skilled jobs, these are likely to pay more than many high-skilled jobs in the country of origin.

Table 8. **Sectoral distributions of migrants and ethnic minorities: ESS 2008**

Sector	All	Migrants	Ethnics
Agriculture and fishing	1.6	1.9	2.0
Manufacturing	17.9	19.4	17.5
Gas and electricity	1.1	0.5	0.4
Construction	7.5	8.8	9.0
Wholesale and retail	11.8	10.9	10.7
Hotels and restaurants	3.4	7.1	6.2
Transport and storage	6.6	5.7	9.2
Financial Intermediation	3.6	3.4	3.4
Real estate and renting	9.9	9.8	9.3
Public administration and defence	7.8	3.9	5.0
Education, health and social work	23.8	20.3	19.3
Other	5.1	8.3	8.2
	100.0	100.0	100.0

NB: all figures refer to nationally weighted data; column 1 figures will also include migrants and ethnics.

3.5. Unemployment, inactivity, undereducation, perceptions of discrimination, intergenerational mobility and access to training

The extent to which migrants and ethnic minorities experience differential rates of unemployment, inactivity, undereducation, intergenerational mobility, access to training and perceptions of discrimination is also investigated. The 2008 country level descriptives for these key labour-market indicators are reported in Table 9.

Table 9. **Labour-market indicators: ESS 2008**

	Unemployment			Inactivity			Undereducated		
	All	Migrants	Ethnic	All	Migrants	Ethnic	All	Migrants	Ethnic
Belgium	0.08	0.14	0.19	0.01	0.09	0.10	0.16	0.20	0.08
Denmark	0.03	0.10	0.15	0.04	0.04	0.07	0.13	0.13	0.18
Finland	0.05	0.13	0.17	0.04	0.06	0.12	0.19	0.04	0.08
France	0.07	0.15	0.16	0.07	0.18	0.11	0.22	0.37	0.35
Germany	0.09	0.13	0.13	0.11	0.14	0.10	0.08	0.18	0.14
Hungary	0.13	0.24	0.33	0.10	0.11	0.28	0.41	0.20	0.55
Netherlands	0.03	0.10	0.12	0.18	0.17	0.16	0.22	0.20	0.25
Norway	0.02	0.06	0.10	0.06	0.08	0.07	0.17	0.16	0.13
Poland	0.07	0.33	0.21	0.11	0.40	0.07	0.34	0.00	0.40
Portugal	0.11	0.12	0.12	0.13	0.08	0.09	0.12	0.08	0.26
Slovenia	0.06	0.14	0.2	0.13	0.24	0.25	0.33	0.59	0.60
Spain	0.09	0.13	0.23	0.18	0.10	0.11	0.27	0.25	0.31
Sweden	0.04	0.06	0.06	0.03	0.05	0.02	0.15	0.12	0.07
Switzerland	0.04	0.08	0.13	0.15	0.14	0.09	0.12	0.23	0.28
UK	0.06	0.07	0.07	0.12	0.14	0.15	0.30	0.22	0.23

	Discrimination			Mobility			Training		
	All	Migrants	Ethnic	All	Migrants	Ethnic	All	Migrants	Ethnic
Belgium	0.06	0.07	0.24	0.55	0.54	0.64	0.52	0.33	0.44
Denmark	0.03	0.17	0.41	0.51	0.50	0.55	0.68	0.50	0.32
Finland	0.05	0.08	0.17	0.63	0.56	0.50	0.70	0.52	0.67
France	0.11	0.20	0.40	0.60	0.60	0.47	0.47	0.27	0.30
Germany	0.05	0.19	0.27	0.30	0.42	0.43	0.48	0.30	0.48
Hungary	0.05	0.10	0.32	0.55	0.70	0.45	0.26	0.30	0.14
Netherlands	0.08	0.26	0.36	0.58	0.52	0.61	0.58	0.50	0.51
Norway	0.05	0.10	0.17	0.51	0.55	0.53	0.62	0.58	0.63
Poland	0.03	0.00	0.20	0.63	0.00	0.80	0.40	1.00	0.00
Portugal	0.03	0.26	0.35	0.64	0.53	0.52	0.18	0.15	0.09
Slovenia	0.03	0.08	0.00	0.62	0.44	0.50	0.56	0.44	0.70
Spain	0.06	0.19	0.34	0.71	0.62	0.69	0.29	0.14	0.11
Sweden	0.08	0.21	0.41	0.58	0.53	0.52	0.71	0.75	0.78
Switzerland	0.05	0.12	0.23	0.40	0.41	0.42	0.63	0.50	0.54
UK	0.14	0.16	0.36	0.44	0.31	0.42	0.53	0.52	0.62

NB: all figures refer to nationally weighted data; column 1, 4 and 7 figures include migrants and ethnics.

3.5.1. Overall population

The incidence of unemployment within the sample populations ranges from 2 to 4% in Denmark, the Netherlands, Norway, Sweden and Switzerland, to 13% in Hungary, while inactivity levels are slightly more variable, ranging from 3 to 6% in Denmark, Finland, Norway and Sweden, to 18% in Spain and Netherlands. The rate of undereducation is particularly high in Hungary, 41%, while it is less than 20% in eight countries: Belgium, Denmark, Finland, Germany, Portugal, Norway, Sweden and Switzerland.

On average, less than 10% of workers feel part of a discriminated group. Variation among countries is low, though the UK and France are slight outliers with 14 and 11% respectively, perhaps reflecting their higher proportion of migrants and ethnic minorities.

Intergenerational mobility, in the context of our study, describes the extent to which individuals manage to attain higher levels of education than their father. In most countries mobility rates exceed 50%, with Spain, Poland, Portugal and Finland reporting the highest incidences of intergenerational progression. In contrast, the figure is only 30% in Germany.

Finally, with respect to the take up of training, measured in terms of whether an individual has improved their level of knowledge or skills in the last 12 months, the incidence is highest in Finland and Sweden (70 and 71% respectively) and lowest in Portugal (18%) and Hungary (26%).

3.5.2. Migrants and ethnic minorities

Comparing migrants and ethnic minorities with the overall distributions, some notable differences become apparent.

Unemployment rates are substantially higher among both migrants and ethnic minority groupings in all countries apart from the UK and Portugal where there is hardly any difference.

Relative to the population average, inactivity rates for migrants are higher in France, Poland, Slovenia, Finland and Sweden, but lower in Spain and Portugal. While for ethnic minorities they are substantially higher than average in Denmark, France, Hungary, Slovenia and Finland; and lower in Poland, Portugal and Switzerland.

No consistent patterns emerge on undereducation. However, it is substantially higher than the population average for migrants in Germany, France, Slovenia and Switzerland; and lower in, Hungary, Poland, Portuga,l Finland and the UK. Similar diversity is found for ethnic minorities, with 10 countries experiencing higher rates for such groups and five lower. The varying incidence of undereducation across countries is interesting in itself as it suggests substantial international differences in the extent to which such individuals progress within organisations. One potential explanation is that the observed variations in cross-country undereducation rates may relate to international differences in the extent to which migrants and ethnic minorities are employed in family-owned businesses. Another explanation could be that within ethnic enclaves, education may be less important in obtaining a job.

Both migrants and ethnic minorities are generally more likely to report discrimination, with ethnic minority rates generally above those for migrants;

however, departure from the average is marked in Denmark, Germany, Spain, France, Netherlands, Portugal and Sweden.

Finally, relative to the previous indicators, intergenerational mobility and skill improvement rates are much more in line with country level population averages, with no consistent trends emerging.

CHAPTER 4

What determines mismatch and labour-market outcomes among migrants and ethnic minorities?

In this chapter we shed light on the issue of what drives mismatch and other labour-market outcomes and what its impacts are for migrants and ethnic minorities. We present regression results for the determinants of overeducation, the determinants of undereducation, unemployment and inactivity, and discrimination, educational mobility and household income.

4.1. Overeducation

To determine the extent to which migrants and ethnic minorities are subject to higher probability of overeducation, we begin by estimating probit models for all countries combined, before constructing country level equations. These are all estimated on a sample pooled over all four ESS between 2002 and 2008 (with appropriate survey controls included in the empirical estimation) to provide sufficient observations. We start with a model containing migrant and ethnic minority dummy variables, before testing the extent to which migrants educated abroad (specification 2) and migrant members of ethnic minority groups (specification 3) are subject to differential rates of overeducation. In each case we distinguish between mobility within the EU (migrant2) and migration from outside the EU (migrant3). We then go on to assess the impact of parental migration status (specification 4) and the period of time spent in the country (specification 5). Our models also contain variables for gender, age, language use, educational attainment, work organisation, supervisory status, trade union membership, previous unemployment, hours worked, firm size, sector (two-digit NACE) and year. They include country level aggregates related to the overall incidence of perceived discrimination, negative migration beliefs, high skill intensity, skill improvement, religious attachment and long-term domicile, with all additional unobserved influences accounted for by country level fixed effects.

Table 10 reports the marginal effect results from the overeducation probit models for the pooled sample.

With regards to migrant status, marginal effects are insignificant for those born in the EU (migrant2); the driver is in relation to those born outside the EU (migrant3). The sample size for the former is small (less than 1% of the total sample). Migrants from outside the EU are disproportionately affected by overeducation. Models behave according to expectations, with overeducation positively linked to male status and educational attainment, and negatively related to age, work autonomy, recent skill accumulation and the number of hours worked. Overeducation is high in countries with low average rate of training, low proportion of skilled (educated) workers, high percentage of long-term domiciled employees, high level of discrimination and with a general belief that migration is harmful to the economy. After accounting for such country-level effects, relative to our base case of Germany, overeducation is found to be higher in Belgium, Denmark, Finland, Netherlands, Norway, Poland, Spain and Sweden and lower in Hungary, Slovenia and the UK. Compared to 2002, the likelihood of overeducation is higher in 2004 and lower in 2008.

The model indicates that, relative to their native counterparts, migrant employees have a 5% increased probability of being overeducated. However, migrants' source of education should be considered, as qualification obtained abroad may not be fully transferable and/or be of actual or perceived reduced quality. Some migrants may also possess lower work-related skills, and so any increased overeducation probability will merely reflect this. When the variable for educated abroad is included in the equation, the marginal probability of migrant overeducation falls from 5 to 3%, with the level of statistical significance also reduced somewhat (specification 2). Migrants educated abroad have an estimated 6% increased probability of overeducation relative to their native counterparts.

We find no evidence of increased overeducation among individuals from ethnic minority backgrounds, irrespective of their migrant status (specification 3). When controls for parental migration and educational status are added to the model (specification 4) none of the additional variables are significant and the migrant control becomes statistically insignificant. The most likely explanation is that both migrant and parental migrant status are highly correlated, as many families will migrate together, thus ensuring that both sets of influences obscure each other within the model. A similar effect is observed in specification 5, where the educated abroad effect becomes insignificant when the years spent in the country is included in the model. Consequently, we view specifications 1, 2 and 3 as the most reliable estimates of the relationship between overeducation and migrant/ethnic minority status.

Table 10. **Overeducation equations: all countries**

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
migrant2	0.04	0.01	0.04	0.01	0.09
	(0.033)	(0.031)	(0.033)	(0.033)	(0.125)
migrant3	0.05***	0.03**	0.05***	0.03	0.11
	(0.013)	(0.014)	(0.014)	(0.017)	(0.122)
migrantabroad		0.06***		0.06***	0.05
		(0.022)		(0.022)	(0.036)
ethnic	0.02	0.02		0.02	0.02
	(0.015)	(0.015)		(0.016)	(0.016)
ethnicmigrant			0.02		
			(0.021)		
nnatspeak	0.00	-0.00	0.00	-0.00	-0.00
	(0.019)	(0.018)	(0.019)	(0.018)	(0.018)
male	0.01**	0.01**	0.01**	0.01**	0.01**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
age	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
postsec	0.80***	0.80***	0.80***	0.80***	0.80***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
tertiary	0.64***	0.64***	0.64***	0.64***	0.64***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
impskills	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
fixedterm	0.03	0.03	0.03	0.03	0.03
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
supervise	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
workorg	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
workpolicy	-0.01*	-0.01	-0.01*	-0.01	-0.01
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
hoursworked	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
unemp3month	0.01*	0.01*	0.01*	0.01*	0.01*
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
unemp12month	0.01	0.01	0.01	0.01	0.01
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
tradeunion	0.01**	0.01**	0.01**	0.01**	0.01**
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
firmsizeless10	0.04***	0.04***	0.04***	0.04***	0.04***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
firmsize10to24	0.00	0.00	0.00	0.00	0.00
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
firmsize25to99	-0.00	-0.00	-0.00	-0.01	-0.00
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
firmsize100to499	0.00	0.00	0.00	0.00	0.00
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
fathmigrant				0.00	0.00
				(0.013)	(0.013)
mothmigrant				-0.00	-0.00
				(0.013)	(0.013)
fathgrad				-0.01	-0.01
				(0.008)	(0.008)
mothgrad				-0.00	-0.00
				(0.009)	(0.009)
incountry12m					-0.08
					(0.081)
incountry1to5y					-0.05
					(0.080)
incountry6to10y					-0.06
					(0.076)
incountry11to20y					-0.06
					(0.073)
incountry20plus					-0.06
					(0.073)
avtrain	-0.38***	-0.38***	-0.38***	-0.38***	-0.38***
	(0.103)	(0.103)	(0.103)	(0.103)	(0.103)
avhighskill	-0.44***	-0.43***	-0.44***	-0.43***	-0.43***
	(0.107)	(0.107)	(0.107)	(0.107)	(0.107)
avdiscrim	1.09***	1.10***	1.09***	1.10***	1.10***
	(0.357)	(0.356)	(0.357)	(0.356)	(0.357)
avmigbad	0.38***	0.38***	0.38***	0.38***	0.38***
	(0.114)	(0.114)	(0.114)	(0.114)	(0.114)
av20plusyears	1.92***	1.93***	1.92***	1.94***	1.94***
	(0.471)	(0.471)	(0.471)	(0.471)	(0.471)
avrelig	0.05	0.05	0.05	0.05	0.05
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
belgium	0.18***	0.18***	0.18***	0.18***	0.18***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
denmark	0.18***	0.18***	0.18***	0.18***	0.18***
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
finland	0.11***	0.11***	0.11***	0.10***	0.10***
	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)
france	-0.02	-0.02	-0.02	-0.02	-0.02
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
hungary	-0.10***	-0.10***	-0.10***	-0.10***	-0.10***
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
netherlands	0.22***	0.22***	0.22***	0.21***	0.21***
	(0.039)	(0.039)	(0.040)	(0.039)	(0.039)
norway	0.08***	0.08***	0.08***	0.08***	0.08***
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
poland	0.11***	0.11***	0.11***	0.11***	0.11***
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
portugal	0.07*	0.07*	0.07*	0.07*	0.07*
	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
slovenia	-0.10***	-0.10***	-0.10***	-0.10***	-0.10***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
spain	0.06**	0.06**	0.06**	0.06**	0.06**
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
sweden	0.13***	0.13***	0.13***	0.13***	0.13***
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
switzerland	-0.04	-0.04	-0.04	-0.04	-0.04
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
uk	-0.13***	-0.13***	-0.13***	-0.13***	-0.13***
	(0.026)	(0.026)	(0.026)	(0.025)	(0.025)
year04	0.03**	0.02**	0.03**	0.02**	0.02**
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
year06	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
year08	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Observations	46 174	46 174	46 174	46 174	46 174

NB: Dependent variable is overeducated; coefficients refer to marginal effects; robust standard errors in parentheses; additional controls included for two digit sector of employment not reported; */**/*** denotes statistical significance at the 90%/95%/99% confidence levels respectively.

Next, we consider country specific effects. Table 11 examines the impact of overall migrant and ethnic minority status on the probability of overeducation (specification 1), while Table 12 assesses the sensitivity of the models to the inclusion of the education location controls (specification 2). Migrants from outside the EU (migrant3) are found to have higher overeducation probabilities in Belgium (10%), Denmark (9%), France (10%), Netherlands (10%), Norway (6%), Portugal (23%), Spain (12%) and Sweden (8%) (Table 11). There are insignificant effects in Germany, Finland, Hungary, Slovenia, Switzerland and the UK, which may reflect differences in the characteristics of the migrants. Spain and France are exceptions, as the marginal effects are significant also for individuals moving with the EU (migrant2) at 17 and 27% respectively, while in Hungary the effect is significant but negative.

Table 11. **Overeducation equations by country: specification 1**

	BE	DK	FI	FR	DE	HU	NL	NO	PT	SI	ES	SE	CH	UK
migrant2	-0.01	0.04		0.26	-0.00	-0.06***	-0.03	0.05	-0.13		0.18*	0.07	0.02	0.04
	(0.102)	(0.128)		(0.195)	(0.000)	(0.007)	(0.090)	(0.067)	(0.101)		(0.098)	(0.050)	(0.033)	(0.066)
migrant3	0.11***	0.10**	0.04	0.09**	0.00	0.03	0.11**	0.04	0.21***	-0.01	0.13***	0.09***	0.02	0.05
	(0.042)	(0.047)	(0.085)	(0.042)	(0.000)	(0.049)	(0.048)	(0.031)	(0.043)	(0.015)	(0.035)	(0.028)	(0.016)	(0.031)
ethnic	0.07	0.01	-0.06	0.09*	0.00	-0.04***	-0.02	0.06	0.12*	-0.02*	0.04	-0.03	-0.01	0.05
	(0.062)	(0.062)	(0.124)	(0.051)	(0.000)	(0.015)	(0.049)	(0.049)	(0.073)	(0.013)	(0.050)	(0.018)	(0.021)	(0.033)
nnatspeak	-0.18**	-0.09**	0.03	0.03	0.00	-0.02	-0.04	0.05	0.40***	0.08	-0.03	-0.05***	0.02	-0.05*
	(0.087)	(0.039)	(0.162)	(0.045)	(0.000)	(0.068)	(0.077)	(0.044)	(0.101)	(0.087)	(0.043)	(0.016)	(0.036)	(0.028)
male	0.07***	0.03	-0.05*	-0.04**	-0.00	0.00	0.07***	0.04***	0.12***	-0.00	0.02	0.01	0.01	0.02
	(0.023)	(0.019)	(0.031)	(0.016)	(0.000)	(0.011)	(0.021)	(0.013)	(0.023)	(0.008)	(0.020)	(0.010)	(0.013)	(0.016)
age	-0.00***	0.00***	0.00	-0.00***	-0.00	0.00	-0.00***	-0.00	-0.01***	-0.00***	-0.00***	-0.00**	-0.00	-0.00*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)
postsec	0.71***	0.67***		0.92***	1.00***	0.87***	0.56***	0.87***		0.75***	0.58***		0.78***	0.89***
	(0.013)	(0.024)		(0.012)	(0.000)	(0.042)	(0.029)	(0.018)		(0.043)	(0.048)		(0.024)	(0.015)
tertiary	0.58***	0.36***		0.91***	0.97***	0.42***	0.31***	0.52***	-0.01	0.45***	0.30***	0.63***	0.45***	0.50***
	(0.022)	(0.026)		(0.011)	(0.007)	(0.034)	(0.025)	(0.019)	(0.031)	(0.038)	(0.027)	(0.017)	(0.026)	(0.024)
impskills	-0.05**	-0.04*	-0.10**	-0.01	-0.00	-0.02	0.01	-0.03**	0.08***	-0.01	-0.00	-0.05***	-0.03**	-0.02
	(0.023)	(0.021)	(0.039)	(0.016)	(0.000)	(0.012)	(0.020)	(0.014)	(0.028)	(0.010)	(0.020)	(0.014)	(0.014)	(0.016)
fixedterm	0.04	-0.05	0.07		-0.00	0.01	-0.01	0.04	0.07	0.02	0.02	0.00	0.06	0.02
	(0.063)	(0.038)	(0.078)		(0.000)	(0.027)	(0.052)	(0.039)	(0.071)	(0.028)	(0.046)	(0.023)	(0.063)	(0.042)
supervise	-0.06***	-0.02	-0.14***	-0.09***	0.00	-0.01	0.02	-0.02	-0.01	0.00	-0.02	-0.00	-0.02	-0.06***
	(0.022)	(0.017)	(0.030)	(0.015)	(0.000)	(0.014)	(0.019)	(0.012)	(0.028)	(0.009)	(0.022)	(0.010)	(0.012)	(0.015)

	BE	DK	FI	FR	DE	HU	NL	NO	PT	SI	ES	SE	CH	UK
workorg	-0.06**	-0.05**	-0.11***	-0.00	-0.00	-0.03**	0.01	-0.02	-0.06**	-0.02**	-0.00	-0.01	-0.02*	-0.06***
	(0.025)	(0.022)	(0.036)	(0.020)	(0.000)	(0.015)	(0.023)	(0.015)	(0.026)	(0.008)	(0.022)	(0.013)	(0.013)	(0.016)
workpolicy	-0.02	-0.04*	-0.04	-0.01	-0.00	0.04	-0.06**	-0.02	0.05	-0.01	0.01	-0.01	-0.02	-0.02
	(0.034)	(0.021)	(0.038)	(0.021)	(0.000)	(0.033)	(0.026)	(0.014)	(0.040)	(0.010)	(0.031)	(0.012)	(0.014)	(0.020)
hoursworked	0.00	0.00	0.00	-0.00	-0.00	0.00	-0.00	0.00	-0.00	-0.00*	-0.00	-0.00	0.00	-0.00
	(0.001)	(0.001)	(0.002)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)
unemp3month	0.07**	0.06***	0.06*	0.04**	0.00	0.04**	0.04	0.04**	0.02	-0.00	0.00	0.00	-0.00	0.02
	(0.027)	(0.022)	(0.034)	(0.019)	(0.000)	(0.016)	(0.029)	(0.017)	(0.026)	(0.010)	(0.019)	(0.012)	(0.016)	(0.019)
unemp12month	-0.06*	0.01	-0.02	0.08**	-0.00	-0.02	-0.00	0.03	-0.04	0.04	-0.00	0.08**	0.02	0.08**
	(0.036)	(0.033)	(0.052)	(0.036)	(0.000)	(0.018)	(0.042)	(0.039)	(0.039)	(0.026)	(0.028)	(0.036)	(0.035)	(0.043)
tradeunion	0.05**	-0.03	-0.01	-0.00	0.00	-0.03**	0.04*	0.02	0.00	-0.02**	0.03	-0.02	-0.01	-0.01
	(0.022)	(0.026)	(0.034)	(0.023)	(0.000)	(0.012)	(0.021)	(0.012)	(0.030)	(0.009)	(0.027)	(0.013)	(0.013)	(0.017)
firmsizeless10	0.08**	0.03	0.15***	0.08***	0.00	-0.04***	0.09**	0.03	0.03	0.01	-0.03	0.01	0.03	0.05*
	(0.037)	(0.034)	(0.057)	(0.030)	(0.000)	(0.013)	(0.037)	(0.024)	(0.036)	(0.014)	(0.034)	(0.018)	(0.022)	(0.028)
firmsize10to24	-0.01	-0.00	0.03	0.02	0.00	-0.05***	0.01	0.03	0.05	0.01	-0.02	-0.02	0.04*	-0.02
	(0.035)	(0.029)	(0.053)	(0.032)	(0.000)	(0.012)	(0.034)	(0.023)	(0.039)	(0.014)	(0.034)	(0.015)	(0.025)	(0.022)
firmsize25to99	-0.02	0.00	-0.03	0.04*	-0.00	-0.02*	0.06**	0.00	0.04	-0.02	-0.01	-0.00	0.04	-0.04**
	(0.031)	(0.028)	(0.049)	(0.027)	(0.000)	(0.014)	(0.031)	(0.019)	(0.039)	(0.010)	(0.035)	(0.015)	(0.023)	(0.018)
firmsize100to499	-0.03	0.02	-0.03	0.02	-0.00	0.02	0.01	0.03	0.00	0.00	0.02	-0.02	0.02	-0.04**
	(0.032)	(0.030)	(0.049)	(0.024)	(0.000)	(0.021)	(0.031)	(0.022)	(0.043)	(0.011)	(0.041)	(0.014)	(0.023)	(0.018)
Observations	2 918	2 914	1 476	3 494	4 395	2 336	3 264	3 781	2 850	1 855	3 096	3 963	3 382	2 891

NB: Dependent variable is overeducated; coefficients refer to marginal effects; robust standard errors in parentheses; additional controls included for two-digit sector of employment and survey wave not reported; */**/*** denotes statistical significance at the 90%/95%/99% confidence levels respectively.

Table 12. **Overeducation equations by country: specification 2**

	BE	DK	FI	FR	DE	HU	NL	NO	PT	SI	ES	SE	CH	UK
migrant2	-0.02	-0.03		0.28	-0.00	-0.06***	-0.04	-0.00	-0.14		0.13	0.06	0.05	-0.02
	(0.104)	(0.102)		(0.197)	(0.000)	(0.007)	(0.091)	(0.057)	(0.095)		(0.104)	(0.050)	(0.042)	(0.052)
migrant3	0.10**	0.07	-0.00	0.10**	0.00	0.00	0.10**	0.01	0.13***	-0.01	0.08	0.09***	0.04**	0.01
	(0.048)	(0.049)	(0.087)	(0.047)	(0.000)	(0.048)	(0.050)	(0.030)	(0.051)	(0.016)	(0.054)	(0.031)	(0.019)	(0.029)
migrantabroad	0.02	0.17*	0.20	-0.03	-0.00	0.16	0.02	0.10	0.21***	-0.01	0.06	0.01	-0.05***	0.13*
	(0.072)	(0.102)	(0.194)	(0.052)	(0.000)	(0.152)	(0.071)	(0.062)	(0.082)	(0.030)	(0.059)	(0.029)	(0.015)	(0.067)
ethnic	0.07	-0.00	-0.07	0.08*	0.00	-0.04***	-0.02	0.06	0.09	-0.02*	0.04	-0.03	-0.01	0.04
	(0.062)	(0.061)	(0.126)	(0.051)	(0.000)	(0.015)	(0.049)	(0.049)	(0.071)	(0.013)	(0.050)	(0.018)	(0.021)	(0.033)
nnatspeak	-0.18**	-0.10***	-0.00	0.03	0.00	-0.02	-0.05	0.03	0.38***	0.09	-0.04	-0.05***	0.03	-0.07***
	(0.086)	(0.037)	(0.166)	(0.044)	(0.000)	(0.069)	(0.079)	(0.042)	(0.106)	(0.091)	(0.043)	(0.015)	(0.038)	(0.025)
male	0.07***	0.03	-0.05*	-0.04**	-0.00	0.00	0.07***	0.04***	0.12***	-0.00	0.02	0.01	0.01	0.02
	(0.023)	(0.019)	(0.031)	(0.016)	(0.000)	(0.011)	(0.021)	(0.013)	(0.023)	(0.008)	(0.020)	(0.010)	(0.013)	(0.016)
age	-0.00***	0.00***	0.00	-0.00***	-0.00	0.00	-0.00***	-0.00	-0.01***	-0.00***	-0.00***	-0.00**	-0.00	-0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)
postsec	0.71***	0.67***		0.92***	1.00***	0.87***	0.56***	0.87***		0.75***	0.58***		0.79***	0.89***
	(0.013)	(0.024)		(0.012)	(0.000)	(0.042)	(0.029)	(0.018)		(0.043)	(0.048)		(0.024)	(0.015)
tertiary	0.58***	0.36***		0.91***	0.97***	0.42***	0.31***	0.52***	-0.01	0.45***	0.30***	0.63***	0.46***	0.50***
	(0.022)	(0.026)		(0.011)	(0.008)	(0.034)	(0.025)	(0.019)	(0.031)	(0.038)	(0.027)	(0.017)	(0.026)	(0.024)
impskills	-0.05**	-0.04*	-0.10**	-0.01	-0.00	-0.02	0.01	-0.03**	0.08***	-0.01	-0.00	-0.05***	-0.03**	-0.02
	(0.023)	(0.021)	(0.039)	(0.016)	(0.000)	(0.012)	(0.020)	(0.014)	(0.028)	(0.010)	(0.020)	(0.014)	(0.014)	(0.016)
fixedterm	0.04	-0.05	0.06		-0.00	0.01	-0.01	0.04	0.06	0.02	0.01	0.00	0.06	0.01
	(0.063)	(0.038)	(0.077)		(0.000)	(0.027)	(0.052)	(0.039)	(0.071)	(0.028)	(0.046)	(0.023)	(0.063)	(0.041)
supervise	-0.06***	-0.02	-0.14***	-0.09***	0.00	-0.01	0.02	-0.02	-0.00	0.00	-0.02	-0.00	-0.02	-0.06***
	(0.022)	(0.017)	(0.030)	(0.015)	(0.000)	(0.014)	(0.019)	(0.012)	(0.028)	(0.009)	(0.022)	(0.010)	(0.012)	(0.015)

	BE	DK	FI	FR	DE	HU	NL	NO	PT	SI	ES	SE	CH	UK
workorg	-0.06**	-0.05**	-0.11***	-0.00	-0.00	-0.03**	0.01	-0.02	-0.06**	-0.02**	-0.00	-0.01	-0.02*	-0.06***
	(0.025)	(0.022)	(0.036)	(0.020)	(0.000)	(0.015)	(0.023)	(0.015)	(0.026)	(0.008)	(0.022)	(0.013)	(0.013)	(0.016)
workpolicy	-0.02	-0.04*	-0.04	-0.01	-0.00	0.04	-0.06**	-0.01	0.05	-0.01	0.01	-0.02	-0.02	-0.02
	(0.034)	(0.021)	(0.038)	(0.021)	(0.000)	(0.033)	(0.026)	(0.014)	(0.040)	(0.010)	(0.031)	(0.012)	(0.014)	(0.020)
hoursworked	0.00	0.00	0.00	-0.00	-0.00	0.00	-0.00	0.00	-0.00	-0.00*	-0.00	-0.00	0.00	-0.00
	(0.001)	(0.001)	(0.002)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)
unemp3month	0.07**	0.06***	0.06*	0.04**	0.00	0.04**	0.04	0.04**	0.01	-0.00	0.00	0.00	-0.00	0.02
	(0.027)	(0.022)	(0.034)	(0.019)	(0.000)	(0.016)	(0.029)	(0.017)	(0.026)	(0.010)	(0.019)	(0.012)	(0.016)	(0.019)
unemp12month	-0.06*	0.01	-0.02	0.08**	-0.00	-0.02	-0.00	0.03	-0.03	0.04	-0.00	0.08**	0.01	0.09**
	(0.036)	(0.033)	(0.052)	(0.036)	(0.000)	(0.018)	(0.042)	(0.038)	(0.039)	(0.026)	(0.028)	(0.036)	(0.034)	(0.043)
tradeunion	0.05**	-0.04	-0.01	-0.00	0.00	-0.03**	0.04*	0.02	0.01	-0.02**	0.03	-0.02	-0.01	-0.00
	(0.022)	(0.026)	(0.035)	(0.023)	(0.000)	(0.012)	(0.021)	(0.012)	(0.030)	(0.009)	(0.027)	(0.013)	(0.013)	(0.017)
firmsizeless10	0.08**	0.03	0.15***	0.08***	0.00	-0.04***	0.09**	0.03	0.03	0.01	-0.03	0.01	0.03	0.04
	(0.037)	(0.034)	(0.057)	(0.030)	(0.000)	(0.013)	(0.037)	(0.023)	(0.036)	(0.014)	(0.034)	(0.018)	(0.022)	(0.028)
firmsize10to24	-0.01	-0.01	0.03	0.02	0.00	-0.05***	0.01	0.03	0.05	0.01	-0.02	-0.02	0.04*	-0.03
	(0.035)	(0.029)	(0.053)	(0.032)	(0.000)	(0.012)	(0.034)	(0.023)	(0.039)	(0.014)	(0.034)	(0.015)	(0.024)	(0.021)
firmsize25to99	-0.02	0.00	-0.03	0.04	-0.00	-0.02*	0.06**	0.00	0.04	-0.02	-0.01	-0.00	0.04	-0.04**
	(0.031)	(0.028)	(0.048)	(0.027)	(0.000)	(0.014)	(0.031)	(0.018)	(0.039)	(0.010)	(0.035)	(0.015)	(0.023)	(0.018)
firmsize100to499	-0.03	0.03	-0.03	0.02	-0.00	0.02	0.01	0.03	0.00	0.00	0.02	-0.02	0.02	-0.04**
	(0.032)	(0.030)	(0.049)	(0.024)	(0.000)	(0.021)	(0.031)	(0.022)	(0.043)	(0.011)	(0.041)	(0.014)	(0.023)	(0.017)
Observations	2 918	2 914	1 476	3 494	4 395	2 336	3 264	3 781	2 850	1 855	3 096	3 963	3 382	2 891

NB: Dependent variable is overeducated; coefficients refer to marginal effects; robust standard errors in parentheses; additional controls included for two digit sector of employment and survey wave not reported; */**/*** denotes statistical significance at the 90%/95%/99% confidence levels respectively.

When controls for education location are included in the model (Table 12), the estimated effects for Belgium, France, the Netherlands and Sweden remain relatively stable: the marginal effects fall and become insignificant in Denmark, Norway and Spain. In Switzerland, the marginal effect for non-EU migrants (migrant3) becomes positive and significant by virtue of a negative probability of overeducation for migrants educated abroad: in Portugal the very large migrant effect of 23% falls to 14% for locally educated migrants when account is taken of the fact that those educated abroad are 22% more likely to be overeducated relative to natives. For ethnic minorities, the situation is patchy and inconsistent, with workers from ethnic minorities experiencing high overeducation probability in France (9%), while they are less likely to be overeducated in Hungary (-4%).

The effect of being a non-native speaker (nnatspeak) is similarly inconsistent across countries, with non-native speakers in Belgium (-18%), Denmark (-10%), the UK (-7%) and Sweden (-5%) being significantly less likely to be overeducated while in Portugal (38%) they are significantly more likely to be overeducated.

4.2. Undereducation

The results from the undereducation models estimated on the pooled sample are reported in Table 13. The likelihood of undereducation falls with educational attainment and a previous history of unemployment. Trade-union membership is also negatively correlated with undereducation. The probability of being undereducated is higher among workers with organisational responsibility and those employed in medium size enterprises. With respect to migration and ethnic minority status, within the base model (specification 1) nothing suggests migrants are more prone to undereducation. However, specification 2 reveals that while domestically educated migrants are more likely to be undereducated, non-EU migrants (migrant3) educated abroad have a lower probability of undereducation. Specifications 1, 2 and 3 suggest that, for ethnic minorities, the probability of undereducation is positive, at between 3 and 6%, with ethnic minority workers who are also migrants somewhat more likely to be undereducated. The migrant variable becomes insignificant in specification 3, indicating that there is no increased probability of undereducation among native-born migrants. While the ethnic minority variables remains positive and stable, despite the inclusion of controls for parental background effects and time spent in the country, the migrant effects become somewhat unstable and are difficult to interpret in any sensible fashion (specifications 4 and 5). With respect to the country level effects, undereducation is negatively related to a higher incidence of training,

discrimination and negative attitudes to migration, and positively related to a higher proportion of both long-term domicile and religious affiliation.

Table 13. **Undereducation equations: pooled employee sample**

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
migrant2	-0.01	0.00	-0.01	-0.01	0.28**
	(0.026)	(0.028)	(0.025)	(0.028)	(0.144)
migrant3	0.02	0.03**	0.01	0.01	0.32**
	(0.011)	(0.013)	(0.012)	(0.015)	(0.135)
migrantabroad		-0.03*		-0.03*	-0.04
		(0.016)		(0.016)	(0.028)
ethnic	0.03**	0.03**		0.03**	0.03**
	(0.015)	(0.015)		(0.015)	(0.015)
ethnicmigrant			0.05**		
			(0.023)		
nnatspeak	0.01	0.02	0.01	0.01	0.01
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
male	0.02***	0.02***	0.02***	0.02***	0.02***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
age	0.00***	0.00***	0.00***	0.00***	0.00***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
postsec	-0.12***	-0.12***	-0.12***	-0.12***	-0.12***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
tertiary	-0.39***	-0.39***	-0.39***	-0.39***	-0.39***
	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)
impskills	0.01	0.01	0.01	0.01	0.01
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
fixedterm	0.01	0.01	0.01	0.01	0.01
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
supervise	0.02***	0.02***	0.02***	0.02***	0.02***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
workorg	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
workpolicy	0.03***	0.03***	0.03***	0.03***	0.03***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
hoursworked	0.00**	0.00**	0.00**	0.00**	0.00**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
unemp3month	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
unemp12month	0.01	0.01	0.01	0.01	0.01
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
tradeunion	-0.03***	-0.03***	-0.03***	-0.03***	-0.03***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
firmsizeless10	0.01	0.01	0.01	0.01	0.01
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
firmsize10to24	0.01	0.01	0.01	0.01	0.01
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
firmsize25to99	0.02**	0.02**	0.02**	0.02**	0.02**
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
firmsize100to499	0.01	0.01	0.01	0.01	0.01
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
fathmigrant				0.02	0.02
				(0.013)	(0.013)
mothmigrant				-0.00	-0.00
				(0.013)	(0.013)
fathgrad				-0.01	-0.01
				(0.010)	(0.010)
mothgrad				-0.00	-0.00
				(0.013)	(0.013)
incountry12m					-0.14***
					(0.013)
incountry1to5y					-0.13***
					(0.026)
incountry6to10y					-0.12***
					(0.029)
incountry11to20y					-0.13***
					(0.022)
incountry20plus					-0.13***
					(0.026)
avtrain	-0.61***	-0.61***	-0.61***	-0.61***	-0.61***
	(0.092)	(0.092)	(0.092)	(0.092)	(0.092)
avhighskill	-0.40***	-0.40***	-0.40***	-0.39***	-0.39***
	(0.111)	(0.111)	(0.111)	(0.111)	(0.111)
avdiscrim	-2.09***	-2.09***	-2.10***	-2.08***	-2.08***
	(0.305)	(0.305)	(0.305)	(0.305)	(0.305)
Avmigbad	-0.32***	-0.32***	-0.32***	-0.32***	-0.32***
	(0.106)	(0.106)	(0.106)	(0.106)	(0.106)
av20plusyears	4.03***	4.02***	4.03***	4.03***	4.02***
	(0.409)	(0.409)	(0.409)	(0.409)	(0.409)
avrelig	0.19***	0.19***	0.19***	0.19***	0.19***
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
belgium	0.26***	0.26***	0.26***	0.26***	0.26***
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
denmark	0.33***	0.33***	0.33***	0.33***	0.33***
	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)
finland	0.68***	0.68***	0.68***	0.69***	0.68***
	(0.029)	(0.029)	(0.029)	(0.028)	(0.029)
france	0.44***	0.43***	0.44***	0.43***	0.43***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
hungary	0.47***	0.47***	0.47***	0.47***	0.47***
	(0.046)	(0.046)	(0.045)	(0.046)	(0.046)
netherlands	0.39***	0.39***	0.39***	0.39***	0.39***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)
norway	0.32***	0.32***	0.32***	0.32***	0.32***
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
poland	0.30***	0.30***	0.30***	0.30***	0.30***
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
portugal	-0.15***	-0.15***	-0.15***	-0.15***	-0.15***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
slovenia	0.24***	0.24***	0.24***	0.24***	0.24***
	(0.043)	(0.043)	(0.044)	(0.043)	(0.043)
spain	0.12***	0.12***	0.12***	0.12***	0.12***
	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)
sweden	0.61***	0.61***	0.61***	0.60***	0.60***
	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)
switzerland	-0.09***	-0.09***	-0.09***	-0.09***	-0.09***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
uk	0.76***	0.76***	0.76***	0.76***	0.76***
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Observations	46 174	46 174	46 174	46 174	46 174

NB: Dependent variable is undereducated; coefficients refer to marginal effects; robust standard errors in parentheses; additional controls included for two digit sector of employment and survey wave not reported; */**/*** denotes statistical significance at the 90%/95%/99% confidence levels respectively.

4.3. Unemployment

Factors impacting on the estimated probability of being unemployed are reported in Table 14. The model is again estimated on the pooled sample. The sample differs from those reported previously, as it consists of unemployed respondents and those who are employed (whether in employment or self employment). Sector dummies or firm level controls are not included in the specification. Unemployment is lower among males, older workers and respondents who have higher levels of schooling and recent skill accumulation. Migrants from outside the EU (migrant3) are found to be 3% more likely to be unemployed than natives, with this effect broadly consistent irrespective of education location (Table 14, specifications 1 and 2). Individuals belonging to ethnic minority groupings are 5% more likely to experience unemployment, with the models suggesting that the penalty is slightly lower for ethnic minority workers who are also migrants. As with previous models, the migrant-related effects dissipate as additional controls enter (specifications 4 and 5), while the ethnic minority effect remains consistent throughout. In terms of country level effects, unemployment is lower in countries with a higher incidence of training and a highly skilled workforce and higher in countries with heightened negative perceptions of migration and a higher incidence of discrimination.

Table 14. **Unemployment equations: pooled sample**

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
migrant2	0.03	0.01	0.03	-0.01	-0.02
	(0.020)	(0.019)	(0.020)	(0.017)	(0.052)
migrant3	0.02***	0.01*	0.03***	-0.01	-0.02
	(0.007)	(0.008)	(0.008)	(0.008)	(0.052)
migrantabroad		0.03**		0.02*	0.02
		(0.012)		(0.012)	(0.021)
ethnic	0.04***	0.04***		0.04***	0.04***
	(0.009)	(0.009)		(0.009)	(0.009)
ethnicmigrant			0.03*		
			(0.013)		
nnatspeak	0.01	0.01	0.01	0.01	0.01
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
male	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
age	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
postsec	-0.04***	-0.04***	-0.04***	-0.03***	-0.03***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
tertiary	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
impskills	-0.05***	-0.05***	-0.05***	-0.05***	-0.05***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
fathmigrant				0.02**	0.02**
				(0.009)	(0.009)
mothmigrant				0.01*	0.01*
				(0.009)	(0.009)
fathgrad				-0.01*	-0.01*
				(0.005)	(0.005)
mothgrad				0.00	0.00
				(0.007)	(0.007)
incountry12m					0.13
					(0.133)
incountry1to5y					0.01
					(0.069)
incountry6to10y					0.01
					(0.070)
incountry11to20y					0.00
					(0.064)
incountry20plus					0.01
					(0.069)
avtrain	-0.19***	-0.19***	-0.20***	-0.19***	-0.19***
	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)
avhighskill	-0.16*	-0.16*	-0.17*	-0.16*	-0.16*
	(0.087)	(0.087)	(0.087)	(0.086)	(0.086)
avdiscrim	0.40**	0.40**	0.39**	0.41**	0.40**

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
	(0.192)	(0.192)	(0.192)	(0.192)	(0.192)
avmigbad	0.19***	0.19***	0.19***	0.19***	0.19***
	(0.050)	(0.050)	(0.050)	(0.049)	(0.049)
av20plusyears	-0.17	-0.17	-0.17	-0.16	-0.16
	(0.379)	(0.379)	(0.380)	(0.379)	(0.379)
avrelig	0.04**	0.04**	0.05**	0.04**	0.04**
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
belgium	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.011)	(0.011)	(0.011)	(0.010)	(0.010)
denmark	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
finland	0.03	0.03	0.03	0.03	0.03
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
france	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
hungary	-0.07***	-0.07***	-0.07***	-0.07***	-0.07***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
netherlands	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
norway	-0.03***	-0.03***	-0.03***	-0.03***	-0.03***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
poland	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
portugal	-0.07***	-0.07***	-0.07***	-0.07***	-0.07***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
slovenia	-0.02	-0.02	-0.02	-0.02	-0.02
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
spain	-0.07***	-0.07***	-0.07***	-0.07***	-0.07***
	(0.008)	(0.007)	(0.007)	(0.008)	(0.008)
sweden	0.01	0.01	0.01	0.00	0.00
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
switzerland	-0.04**	-0.04**	-0.04**	-0.04**	-0.04**
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
uk	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Observations	62 817	62 817	62 817	62 817	62 817

NB: Dependent variable is unemp; coefficients refer to marginal effects; robust standard errors in parentheses; additional controls included for survey wave not reported; */**/*** denotes statistical significance at the 90%/95%/99% confidence levels respectively.

4.4. Inactivity

The results from the economic inactivity equations are reported in Table 15. The likelihood of economic inactivity is higher for females, older workers and individuals with lower levels of schooling and skill accumulation. Non-EU

migrants (migrant3) are 1% more likely to be inactive relative to native born, with the rate slightly higher at 2% for migrants educated abroad. Individuals from ethnic minority backgrounds are 4% more likely to be inactive irrespective of their migration status. Regarding country level effects, inactivity rates are higher in countries with a larger proportion of religiously affiliated and lower levels of discrimination.

Table 15. **Inactivity equations: pooled sample**

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
migrant2	0.02	0.02	0.02	0.02	0.10
	(0.020)	(0.019)	(0.020)	(0.021)	(0.085)
migrant3	0.01*	0.00	0.01	0.01	0.08
	(0.006)	(0.007)	(0.007)	(0.009)	(0.071)
migrantabroad		0.02		0.02	-0.03**
		(0.011)		(0.011)	(0.011)
ethnic	0.04***	0.04***		0.04***	0.04***
	(0.009)	(0.009)		(0.010)	(0.009)
ethnicmigrant			0.04***		
			(0.014)		
nnatspeak	0.03***	0.03***	0.03***	0.03***	0.03**
	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)
male	-0.23***	-0.23***	-0.23***	-0.23***	-0.23***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
age	0.00***	0.00***	0.00***	0.00***	0.00***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
postsec	-0.03***	-0.03***	-0.03***	-0.03***	-0.03***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
tertiary	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
impskills	-0.11***	-0.11***	-0.11***	-0.11***	-0.11***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
fathmigrant				0.00	0.00
				(0.008)	(0.008)
mothmigrant				-0.01	-0.01
				(0.008)	(0.008)
fathgrad				-0.00	-0.00
				(0.005)	(0.005)
mothgrad				0.03***	0.02***
				(0.008)	(0.008)
incountry12m					0.16
					(0.118)
incountry1to5y					-0.01
					(0.045)
incountry6to10y					-0.01
					(0.043)
incountry11to20y					-0.04

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
					(0.030)
incountry20plus					-0.05*
					(0.025)
avtrain	-0.06	-0.06	-0.07	-0.06	-0.06
	(0.072)	(0.072)	(0.073)	(0.072)	(0.072)
avhighskill	0.00	0.00	0.00	0.01	0.01
	(0.074)	(0.074)	(0.074)	(0.074)	(0.074)
avdiscrim	-0.32*	-0.32*	-0.32*	-0.32*	-0.32*
	(0.172)	(0.172)	(0.172)	(0.172)	(0.172)
avmigbad	-0.03	-0.03	-0.03	-0.03	-0.02
	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)
av20plusyears	0.04	0.04	0.04	0.03	0.04
	(0.317)	(0.317)	(0.318)	(0.317)	(0.317)
avrelig	0.14***	0.14***	0.14***	0.14***	0.14***
	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)
belgium	0.04***	0.04***	0.04***	0.03***	0.03**
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
denmark	-0.05***	-0.05***	-0.05***	-0.05***	-0.05***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
finland	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
france	-0.02	-0.02	-0.02	-0.02	-0.02
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
hungary	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
netherlands	0.11***	0.11***	0.11***	0.11***	0.11***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
norway	-0.02	-0.02	-0.02	-0.02*	-0.02*
	(0.011)	(0.011)	(0.011)	(0.010)	(0.010)
poland	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
portugal	-0.07***	-0.07***	-0.07***	-0.07***	-0.07***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
slovenia	0.00	0.00	0.00	0.00	0.00
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
spain	-0.03**	-0.03**	-0.03**	-0.03**	-0.03**
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
sweden	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***
	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)
switzerland	0.01	0.01	0.01	0.01	0.01
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
uk	0.05*	0.05*	0.05*	0.05*	0.04*
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Observations	68 006	68 006	68 006	68 006	68 006

NB: Dependent variable is inact; coefficients refer to marginal effects; robust standard errors in parentheses; additional controls included for survey wave not reported; */**/*** denotes statistical significance at the 90%/95%/99% confidence levels respectively.

4.5. Discrimination

Some individuals and groups believe that they are subject to discrimination. The results from Table 16 reveal that perceptions of discrimination are positively related to being employed on a fixed-term contract, trade union membership, history of unemployment, recent skill acquisition, and negatively related to age. Educational attainment has little impact. While non-EU migrants (migrant3) are 5% more likely to feel discriminated against, the magnitude of the effect, at 23%, is much more substantial for respondents belonging to ethnic minorities. The models suggest that feelings of discrimination are restricted to migrants educated domestically, as the coefficient for migrants educated abroad is not statistically significant. The marginal discrimination effect for ethnic migrants is slightly lower than the overall average, suggesting that native ethnics have the highest incidence of perceived discrimination. There is no evidence to support the view that overeducated migrants and ethnic minorities are more likely to feel discriminated against (specification 4). Ceteris paribus, perceptions of discrimination are highest in the UK and lowest in Portugal. There is weak evidence to suggest that discrimination is higher in countries where a larger proportion of the workforce is religiously affiliated.

Table 16. **Discrimination equations: pooled employee sample**

	(1) spec1	(2) spec2	(3) spec3	(4) spec1a	(5) spec4	(6) spec5
overeducated	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
migrant2	0.02	0.01	0.02	0.01	-0.02	0.05
	(0.018)	(0.018)	(0.018)	(0.018)	(0.012)	(0.108)
migrant3	0.05***	0.05***	0.06***	0.05***	0.00	0.09
	(0.008)	(0.009)	(0.009)	(0.010)	(0.008)	(0.125)
migrantabroad		0.02			0.01	-0.01
		(0.010)			(0.009)	(0.011)
ethnic	0.23***	0.23***		0.24***	0.20***	0.20***
	(0.017)	(0.017)		(0.020)	(0.016)	(0.016)
ethnicmigrant			0.18***			
			(0.022)			
migrantovered				0.01		
				(0.012)		
ethnicovered				-0.02*		
				(0.009)		
nnatspeak	-0.00	-0.00	0.00	-0.00	-0.01	-0.01
	(0.009)	(0.009)	(0.010)	(0.009)	(0.008)	(0.008)
male	0.00	0.00	0.00	0.00	0.00	0.00

	(1) spec1	(2) spec2	(3) spec3	(4) spec1a	(5) spec4	(6) spec5
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
age	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
postsec	0.01	0.01	0.01	0.01	0.01	0.01
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
tertiary	0.01	0.01	0.00	0.01	0.00	0.00
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
impskills	0.01**	0.01**	0.01**	0.01**	0.01**	0.01**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
fixedterm	0.04***	0.03***	0.03***	0.04***	0.03***	0.03***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)	(0.011)
supervise	0.00	0.00	0.00	0.00	0.00	0.00
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
workorg	0.00	0.00	0.00	0.00	0.00	0.00
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
workpolicy	0.00	0.00	0.00	0.00	0.00	0.00
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
hoursworked	0.00	0.00	0.00	0.00	0.00	0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
unemp3month	0.02***	0.02***	0.02***	0.02***	0.02***	0.02***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
unemp12month	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
tradeunion	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
firmsizeless10	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
firmsize10to24	-0.01**	-0.01**	-0.01**	-0.01**	-0.01*	-0.01*
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
firmsize25to99	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)
firmsize100to499	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**
	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)
fathmigrant					0.03***	0.03***
					(0.008)	(0.008)
mothmigrant					0.03***	0.03***
					(0.008)	(0.008)
fathgrad					0.01	0.01
					(0.005)	(0.005)
mothgrad					0.01	0.01
					(0.006)	(0.006)
incountry12m						-0.03
						(0.042)
incountry1to5y						-0.02
						(0.044)
incountry6to10y						-0.03
						(0.038)
incountry11to20y						-0.04*

	(1) spec1	(2) spec2	(3) spec3	(4) spec1a	(5) spec4	(6) spec5
						(0.024)
incountry20plus						-0.04
						(0.027)
avtrain	0.00	0.00	0.00	0.00	0.00	0.00
	(0.060)	(0.060)	(0.061)	(0.060)	(0.059)	(0.059)
avhighskill	-0.02	-0.02	-0.03	-0.02	-0.02	-0.01
	(0.070)	(0.070)	(0.072)	(0.070)	(0.070)	(0.070)
avmigbad	0.04	0.04	0.03	0.04	0.04	0.04
	(0.068)	(0.068)	(0.070)	(0.068)	(0.068)	(0.068)
av20plusyears	0.25	0.25	0.25	0.24	0.22	0.22
	(0.252)	(0.252)	(0.258)	(0.252)	(0.251)	(0.251)
avrelig	0.05*	0.05*	0.05*	0.05*	0.04*	0.05*
	(0.026)	(0.026)	(0.027)	(0.026)	(0.026)	(0.026)
belgium	0.02	0.02	0.02	0.02	0.02	0.02
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
denmark	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.013)
finland	0.02	0.02	0.02	0.02	0.03	0.02
	(0.021)	(0.021)	(0.021)	(0.021)	(0.022)	(0.022)
france	0.06***	0.06***	0.07***	0.06***	0.06***	0.06***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
hungary	0.01	0.01	0.02	0.01	0.01	0.01
	(0.020)	(0.020)	(0.023)	(0.020)	(0.021)	(0.021)
netherlands	0.04**	0.04**	0.04**	0.04**	0.05**	0.05**
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
norway	0.02	0.02	0.01	0.02	0.02	0.02
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
poland	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)	(0.014)
portugal	-0.02**	-0.02**	-0.03**	-0.02**	-0.02	-0.02*
	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.013)
slovenia	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
	(0.012)	(0.012)	(0.013)	(0.012)	(0.013)	(0.013)
spain	0.02	0.02	0.01	0.02	0.02	0.02
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
sweden	0.04*	0.04*	0.04	0.04*	0.04	0.04*
	(0.026)	(0.026)	(0.025)	(0.025)	(0.025)	(0.026)
switzerland	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
uk	0.11***	0.11***	0.12***	0.11***	0.11***	0.11***
	(0.027)	(0.027)	(0.028)	(0.027)	(0.028)	(0.028)
Observations	46 155	46 155	46 155	46 155	46 155	46 155

NB: Dependent variable is discrim; coefficients refer to marginal effects; robust standard errors in parentheses; additional controls included for two digit sector of employment and survey wave not reported; */**/*** denotes statistical significance at the 90%/95%/99% confidence levels respectively; spec1a refers to an alternative formulation of specification 1.

4.6. Intergenerational mobility

The incidence of intergenerational mobility is proxied by respondents achieving higher level of education than their father (Table 17). Overeducated workers are more likely to have achieved educational mobility, which may be suggestive of a lack of professional and social networks being a potentially important factor in explaining overeducation. As expected, intergenerational mobility is linked to high levels of educational attainment, but perhaps it is also more common among older workers, probably due to cohort effects. There is little in any of the models to support the view that migrants, irrespective of their education history, are more likely to achieve educational advancement. Individuals belonging to ethnic minority groupings are between 4 and 6% more likely to achieve an improved educational standing relative to non-ethnics. At country level, intergenerational mobility is highest in countries with a heightened negative perception of migration, perhaps reflecting the need for more education to overcome prejudice.

Table 17. **Educational mobility equations: pooled employee sample**

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
overeducated	0.11***	0.11***	0.11***	0.16***	0.16***
	(0.009)	(0.009)	(0.009)	(0.012)	(0.012)
migrant1	0.02	0.03	0.01	-0.00	-0.07
	(0.037)	(0.038)	(0.037)	(0.049)	(0.185)
migrant2	-0.02	-0.01	-0.03	-0.02	-0.09
	(0.015)	(0.018)	(0.016)	(0.026)	(0.179)
migrantabroad		-0.02		-0.01	0.01
		(0.026)		(0.031)	(0.052)
ethnic	0.05**	0.05**		0.02	0.02
	(0.019)	(0.019)		(0.023)	(0.023)
ethnicmigrant			0.07**		
			(0.028)		
nnatspeak	-0.04	-0.03	-0.04	-0.02	-0.02
	(0.025)	(0.025)	(0.025)	(0.028)	(0.028)
male	-0.00	-0.00	-0.00	0.01	0.01
	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)
age	0.00***	0.00***	0.00***	0.00***	0.00***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
postsec	0.28***	0.28***	0.28***	0.33***	0.33***
	(0.012)	(0.012)	(0.012)	(0.013)	(0.013)
tertiary	0.31***	0.31***	0.31***	0.58***	0.58***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
impskills	0.01	0.01	0.01	0.02***	0.02***
	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)
fixedterm	-0.04*	-0.04*	-0.04*	-0.01	-0.01
	(0.020)	(0.020)	(0.020)	(0.023)	(0.023)

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
supervise	-0.00	-0.00	-0.00	0.02**	0.02**
	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)
workorg	0.01	0.01	0.01	0.01	0.01
	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)
workpolicy	0.01	0.01	0.01	0.02	0.02
	(0.011)	(0.011)	(0.011)	(0.014)	(0.014)
hoursworked	0.00*	0.00*	0.00*	0.00***	0.00***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
unemp3month	-0.01	-0.01	-0.01	-0.00	-0.00
	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)
unemp12month	0.01	0.01	0.01	0.00	0.00
	(0.013)	(0.013)	(0.013)	(0.014)	(0.014)
tradeunion	0.03***	0.03***	0.03***	0.02**	0.02**
	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)
firmsizeless10	0.00	0.00	0.00	-0.03*	-0.03*
	(0.012)	(0.012)	(0.012)	(0.014)	(0.014)
firmsize10to24	0.01	0.01	0.01	-0.02	-0.02
	(0.012)	(0.012)	(0.012)	(0.014)	(0.014)
firmsize25to99	0.01	0.01	0.01	-0.00	-0.00
	(0.011)	(0.011)	(0.011)	(0.013)	(0.013)
firmsize100to499	0.01	0.01	0.01	0.01	0.01
	(0.012)	(0.012)	(0.012)	(0.014)	(0.014)
fathmigrant				0.04*	0.04*
				(0.021)	(0.021)
mothmigrant				0.03	0.03
				(0.021)	(0.021)
fathgrad				-0.67***	-0.67***
				(0.005)	(0.005)
mothgrad				-0.04**	-0.04**
				(0.018)	(0.018)
incountry12m					0.22
					(0.187)
incountry1to5y					0.04
					(0.185)
incountry6to10y					0.02
					(0.185)
incountry11to20y					0.10
					(0.177)
incountry20plus					0.06
					(0.181)
avtrain	0.04	0.04	0.04	0.08	0.09
	(0.135)	(0.135)	(0.135)	(0.154)	(0.154)
avhighskill	-0.02	-0.02	-0.02	0.24	0.24
	(0.147)	(0.147)	(0.147)	(0.163)	(0.163)
avdiscrim	0.21	0.21	0.20	0.65	0.64
	(0.471)	(0.471)	(0.471)	(0.537)	(0.537)
avmigbad	0.38**	0.38**	0.38**	0.37**	0.37**
	(0.156)	(0.156)	(0.156)	(0.177)	(0.178)

	(1) spec1	(2) spec2	(3) spec3	(4) spec4	(5) spec5
av20plusyears	-0.57	-0.57	-0.57	-0.12	-0.11
	(0.585)	(0.585)	(0.585)	(0.671)	(0.671)
avrelig	-0.05	-0.05	-0.05	-0.18***	-0.18***
	(0.048)	(0.048)	(0.048)	(0.057)	(0.056)
belgium	0.24***	0.24***	0.24***	0.22***	0.22***
	(0.019)	(0.019)	(0.019)	(0.023)	(0.023)
denmark	0.20***	0.20***	0.20***	0.21***	0.21***
	(0.032)	(0.032)	(0.032)	(0.036)	(0.036)
finland	0.35***	0.35***	0.35***	0.39***	0.39***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
france	0.32***	0.32***	0.32***	0.28***	0.28***
	(0.026)	(0.026)	(0.026)	(0.033)	(0.033)
hungary	0.26***	0.26***	0.26***	0.30***	0.30***
	(0.031)	(0.031)	(0.031)	(0.032)	(0.032)
netherlands	0.31***	0.31***	0.31***	0.28***	0.28***
	(0.024)	(0.024)	(0.024)	(0.030)	(0.030)
norway	0.25***	0.25***	0.25***	0.30***	0.31***
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
poland	0.41***	0.41***	0.41***	0.45***	0.45***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
portugal	0.40***	0.40***	0.40***	0.44***	0.44***
	(0.019)	(0.019)	(0.019)	(0.018)	(0.018)
slovenia	0.35***	0.35***	0.35***	0.33***	0.33***
	(0.022)	(0.022)	(0.022)	(0.027)	(0.027)
spain	0.45***	0.45***	0.45***	0.49***	0.50***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
sweden	0.31***	0.31***	0.31***	0.30***	0.30***
	(0.027)	(0.027)	(0.027)	(0.033)	(0.033)
switzerland	0.22***	0.22***	0.22***	0.18***	0.18***
	(0.032)	(0.032)	(0.032)	(0.039)	(0.039)
uk	0.09	0.09	0.09*	-0.05	-0.05
	(0.055)	(0.055)	(0.055)	(0.066)	(0.066)
Observations	46 174	46 174	46 174	46 174	46 174

NB: Dependent variable is educatmob; coefficients refer to marginal effects; robust standard errors in parentheses; additional controls included for two digit sector of employment and survey wave not reported; */**/*** denotes statistical significance at the 90%/95%/99% confidence levels respectively.

4.7. Risk of being in a lower income household

Finally, we assess the extent to which migrants and/or ethnic minorities who are mismatched are likely to be located in lower income households. Data on household income was collected in a series of bands in the first three waves, before moving to a distributional quantile based approach in the fourth wave. For the purposes of consistency, we exclude wave four from the analyses and

estimate the factors influencing household income using interval regression techniques. We find that overeducated workers tend to be located in lower income households, which is expected given the wage penalty generally observed with the phenomenon (Table 18). The results also suggest that both non-EU migrants (migrant3) and ethnic minorities are likely to belong to poorer households; this is particularly the case for both migrants educated abroad and migrants belonging to ethnic minorities. However, no evidence supports the view that overeducated workers, who are also migrants or belong to ethnic minorities, are more heavily concentrated in poorer households. In fact, results suggest that mismatched migrants and ethnic minorities are likely to be located in higher income households relative to their matched counterparts (specification 2). The remaining covariates in the model all conform to prior expectations. With respect to country level influences, household incomes tended to be higher in countries with a higher incidence of skill acquisition and a negative view of migration.

Table 18. **Household income equations: pooled employee sample**

	(1) spec1	(2) spec1a	(3) spec2	(4) spec3	(5) spec4	(6) spec5
overeducated	-0.07***	-0.07***	-0.07***	-0.08***	-0.07***	-0.07***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
migrant3	-0.09***	-0.08***	-0.07***	-0.07***	-0.04	-0.15
	(0.022)	(0.027)	(0.025)	(0.024)	(0.030)	(0.119)
migrantabroad			-0.08*		-0.08*	0.02
			(0.044)		(0.045)	(0.079)
ethnic	-0.06**	-0.06	-0.06**		-0.05*	-0.05
	(0.032)	(0.037)	(0.032)		(0.032)	(0.032)
migrantovered		-0.03				
		(0.045)				
ethnicovered		-0.02				
		(0.071)				
ethnicmigrant				-0.15***		
				(0.048)		
nnatspeak	-0.07	-0.07	-0.06	-0.06	-0.06	-0.06
	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)
male	0.02	0.02	0.02	0.02	0.02	0.02
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
age	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
postsec	0.17***	0.17***	0.17***	0.17***	0.16***	0.16***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
tertiary	0.30***	0.30***	0.30***	0.30***	0.29***	0.29***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)
impskills	0.09***	0.09***	0.09***	0.09***	0.09***	0.09***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
fixedterm	-0.07**	-0.07**	-0.07**	-0.07**	-0.07**	-0.07**
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)

	(1) spec1	(2) spec1a	(3) spec2	(4) spec3	(5) spec4	(6) spec5
supervise	0.11***	0.11***	0.11***	0.11***	0.11***	0.11***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
workorg	0.05***	0.05***	0.05***	0.05***	0.05***	0.05***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
workpolicy	0.04**	0.04**	0.04**	0.04**	0.04**	0.04**
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
hoursworked	0.00	0.00	0.00	0.00	0.00	0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
unemp3month	-0.10***	-0.10***	-0.09***	-0.10***	-0.09***	-0.10***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
unemp12month	-0.14***	-0.14***	-0.14***	-0.14***	-0.14***	-0.14***
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
tradeunion	0.01	0.01	0.01	0.01	0.01	0.01
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
firmsizeless10	-0.14***	-0.14***	-0.14***	-0.14***	-0.14***	-0.14***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
firmsize10to24	-0.10***	-0.10***	-0.10***	-0.10***	-0.09***	-0.09***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
firmsize25to99	-0.07***	-0.07***	-0.07***	-0.07***	-0.07***	-0.07***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
firmsize100to499	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
fathmigrant					-0.00	-0.00
					(0.024)	(0.024)
mothmigrant					-0.03	-0.03
					(0.025)	(0.026)
fathgrad					0.07***	0.07***
					(0.016)	(0.016)
mothgrad					0.04*	0.04*
					(0.021)	(0.021)
incountry12m						0.05
						(0.286)
incountry1to5y						-0.02
						(0.137)
incountry6to10y						0.01
						(0.127)
incountry11to20y						0.03
						(0.123)
incountry20plus						0.14
						(0.120)
avtrain	1.33***	1.33***	1.34***	1.34***	1.34***	1.35***
	(0.263)	(0.263)	(0.263)	(0.263)	(0.263)	(0.262)
avhighskill	0.01	0.01	0.01	0.02	-0.02	-0.01
	(0.200)	(0.201)	(0.200)	(0.200)	(0.201)	(0.201)
avdiscrim	0.42	0.41	0.42	0.47	0.41	0.42
	(0.637)	(0.637)	(0.637)	(0.638)	(0.636)	(0.635)
avmigbad	-0.89***	-0.89***	-0.89***	-0.89***	-0.88***	-0.88***
	(0.227)	(0.227)	(0.227)	(0.227)	(0.226)	(0.226)

	(1) spec1	(2) spec1a	(3) spec2	(4) spec3	(5) spec4	(6) spec5
av20plusyears	0.58	0.58	0.57	0.60	0.57	0.52
	(0.898)	(0.898)	(0.898)	(0.898)	(0.896)	(0.897)
avrelig	0.00	0.00	0.00	-0.00	0.01	0.01
	(0.052)	(0.052)	(0.052)	(0.052)	(0.052)	(0.052)
belgium	-0.10***	-0.10***	-0.10***	-0.10***	-0.10**	-0.10**
	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)
denmark	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)
finland	-0.28***	-0.27***	-0.28***	-0.28***	-0.28***	-0.28***
	(0.071)	(0.071)	(0.071)	(0.071)	(0.071)	(0.071)
france	-0.06	-0.06	-0.06	-0.07	-0.05	-0.05
	(0.047)	(0.047)	(0.047)	(0.047)	(0.047)	(0.047)
netherlands	-0.23***	-0.23***	-0.23***	-0.24***	-0.22***	-0.22***
	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)
norway	0.11*	0.11*	0.11*	0.11*	0.11*	0.11*
	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)
poland	-1.27***	-1.27***	-1.27***	-1.27***	-1.26***	-1.27***
	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)
portugal	-0.22***	-0.22***	-0.21***	-0.21***	-0.21***	-0.21***
	(0.071)	(0.071)	(0.071)	(0.071)	(0.071)	(0.071)
slovenia	-0.74***	-0.74***	-0.74***	-0.74***	-0.73***	-0.73***
	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)
spain	-0.15***	-0.15***	-0.15***	-0.15***	-0.14***	-0.14***
	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)
sweden	-0.32***	-0.31***	-0.32***	-0.32***	-0.31***	-0.31***
	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)
switzerland	0.18***	0.18***	0.18***	0.18**	0.19***	0.19***
	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)
uk	0.05	0.06	0.05	0.05	0.06	0.06
	(0.092)	(0.092)	(0.092)	(0.092)	(0.092)	(0.092)
Constant	9.81***	9.81***	9.82***	9.80***	9.79***	9.79***
	(0.193)	(0.193)	(0.192)	(0.196)	(0.190)	(0.190)
Observations	28 543	28 543	28 543	28 543	28 543	28 543

NB: Dependent variable is hhincome; robust standard errors in parentheses; additional controls included for two digit sector of employment and survey wave not reported; */**/*** denotes statistical significance at the 90%/95%/99% confidence levels respectively; spec1a refers to an alternative formulation of specification 1.

CHAPTER 5
Main findings and implications for policy strategy

This report uses data from the European social survey (ESS) to provide evidence of the extent to which individuals from migrant and ethnic minority backgrounds are more likely to experience negative labour-market outcomes such as overeducation, unemployment, inactivity, low intergenerational mobility, feelings of discrimination and lower household income. These effects are largely felt by migrants from outside the EU rather than those moving within the EU.

With respect to the five questions posed earlier, we can summarise the results as suggesting that:

Q1 in most, but not all, countries unemployment and inactivity rates are higher for migrants and ethnic minorities relative to the indigenous population. Similarly, both migrant and ethnic minority workers are more likely to be found in elementary occupations, but there is little evidence to suggest industrial/sectoral segregation;

Q2 migrants from outside the EU are disproportionately affected by overeducation; there is no evidence that ethnic minorities are. Migrant employees have a 5% increased probability of being overeducated relative to their native counterparts; for migrants educated abroad it is 6%. In terms of undereducation, migrants are not disproportionately affected but ethnic minorities are. Overeducation is higher in countries with low rates of training and a lower proportion of skilled workers. Similarly, undereducation is lower where incidence of training is higher. These forms of mismatch are greater for migrants educated abroad. With the data used, it is not possible to look at the degree of mismatch among migrants and ethnic minorities in terms of skills or competences. This is an issue future research can address;

Q3 overeducation is higher, and undereducation lower, where respondents perceive high degree of discrimination against their group. Ethnic minorities are much more likely to feel discriminated against than migrants. Labour-market characteristics and country settings also seem to impact on this. Unemployment is actually higher in countries with higher levels of perceived discrimination;

Q4 There is little evidence to suggest that migrants are any different to the majority population in terms of intergenerational mobility, but ethnic minorities are more likely to experience educational advancement than non-ethnics and intergenerational mobility is higher in countries with a higher negative perception of immigration;

Q5 there are some differences in the answers to the above questions when ethnic origin is considered. Weak evidence suggests that discrimination is higher in countries where a larger proportion of the workforce has a religious affiliation.

5.1. Policy concerns

EU policy can contribute to making better use of migrants skills; this can alleviate current and future skill shortages. This study finds that, broadly speaking, migrants and ethnic minorities are particularly susceptible to unemployment, inactivity and job mismatch and some of these phenomena are associated with perceived discrimination and negative views on migration. There is a clear role for governments to stress the positive effects of migration and to counter discrimination; this should make it easier for these groups to gain employment. However, there may also be a need for special assistance in finding jobs, involving both training and assistance in building up networks and possibly temporary employment to gain experience. This suggests that there is an important role for public employment services in preparing both groups so that they are more competitive in applying for jobs.

Transferability to the host country of skills and qualifications acquired in the country of origin is a central issue. While considerable progress has been made on recognising the different qualifications of EU Member States, progress in non-EU qualifications is more patchy. Common standards should be established and Member States could be encouraged to follow best practice.

On the employer side, giving workers more job autonomy is associated with a lower probability of overeducation. This may be eased by giving both migrants and members of ethnic minorities greater training opportunities, perhaps including language training.

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Variable definitions

Variable	Variable description
discrim	Dummy variable denoting that the respondent is a member of a discriminated group in country of interview.
educatmob	Dummy variable denoting that the respondent has a higher level of educational attainment than his/her father.
hhincome	Indicator variable denoting that the total net income of the respondent's household in Euros. Income bands are defined as <1800, 1800-3599, 3600-5999, 6000-89999, 90000-120000 and >120000. Upper and lower income ranges are assumed bounded between 500 and 160000 respectively.
inact	Dummy variable denoting that the respondent was economically inactive over the last seven days.
overeducated	Dummy variable denoting that the respondent's education level (ISCED) is above the modal level in his/her occupation (Level 1 ISCO).
undereducated	Dummy variable denoting that the respondent's education level (ISCED) is below the modal level in his/her occupation (Level 1 ISCO).
unemp	Dummy variable denoting that the respondent was unemployed over the last seven days.
age	Age of respondent in years.
avdiscrim	Proportion of workers in country belonging to a discriminated group.
avhighskill	Proportion of workers in country employed in SOC groups 1-3.
avmigbad	Proportion of workers in country viewing immigration negatively.
avrelig	Proportion of workers in country affiliated to a religion
avtrain	Proportion of workers in country improving skills in last year.
av20plusyears	Proportion of workers domiciled in country for more than 20 years.
education	Set of dummy variables denoting the respondent's highest educational qualification level or training completed. noqual: no education primary: primary education (ISCED 1); lowsec: lower secondary education (ISCED 2); upsec: upper secondary education (ISCED 3); postsec: post-secondary (non-tertiary) education (ISCED 4); tertiary: tertiary education (ISCED 5-6).
ethnic	Dummy variable denoting that the respondent is a member of an ethnic minority in country of interview.
ethnicmigrant	Dummy variable denoting that the respondent is a member of an ethnic minority in country of interview and was not born in that country.
ethnicovered	Dummy variable denoting that the respondent is a member of an ethnic minority in country of interview and has an education level above the average for his/her occupation.
fathgrad	Dummy variable denoting that the respondent's father was a graduate (tertiary level education).
fathmigrant	Dummy variable denoting that the respondent's father was born outside of the country of interview.

firmsize	Set of dummy variables denoting the size of establishment the respondent works in. firmsizeless10: between 1 and 9 employees inclusive; firmsize10to24: between 10 and 24 employees; firmsize25to99 : between 25 and 99 employees inclusive; firmsize100to499: between 100 and 499 employees inclusive; firmsize500plus: 500 or more employees.
fixedterm	Dummy variable denoting that the respondent has a limited duration employment contract.
hoursworked	Number of hours usually worked by the respondent in their main job per week (including overtime).
impskills	Dummy variable denoting that the respondent has improved skills in previous 12 months.
incountry	Set of dummy variables denoting the length of residence of respondent in the country of interview. incountry12m: less than 12 months; incountry1to5y: between 1 and 5 years inclusive; incountry6to10y: between 6 and 10 years inclusive; incountry11to20y: between 11 and 20 years inclusive; incountry20plus: more than 20 years.
male	Dummy variable denoting that the respondent is male.
migrant	Set of dummy variables denoting country of birth of the respondent. migrant1: born in country of interview; migrant2: born in an EU Member State different than the country of interview; migrant3: born in a non-EU Member State different than the country of interview.
migrantabroad	Dummy variable denoting that the respondent was neither born nor educated (gained highest educational qualification) in country of interview
migrantovered	Dummy variable denoting that the respondent was not born in country of interview and has an education level above the average for his/her occupation.
mothgrad	Dummy variable denoting that the respondent's mother was a graduate (tertiary level education).
mothmigrant	Dummy variable denoting that the respondent's mother was born outside of the country of interview.
nnatspeak	Dummy variable denoting that the respondent does not speak an official language of the country of interview at home for the majority of the time.
supervise	Dummy variable denoting that the respondent has responsibility for supervising others at work.
tradeunion	Dummy variable denoting that the respondent is a member of a trade union (or similar orgainsation).
unemp3month	Dummy variable denoting that the respondent has at some time been unemployed and seeking work for a period of more than three months.
unemp12month	Dummy variable denoting that the respondent has at some time been unemployed and seeking work for a period of more than twelve months.
workorg	Dummy variable denoting that the respondent has influence over the organisation of daily work.
workpolicy	Dummy variable denoting that the respondent has influence over organisational policy.
year	Set of dummy variables denoting survey year. year02: 2002 (wave 1); year04: 2004 (wave2); year06: 2006 (wave 3); year08: 2008 (wave 4).

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Migrants, minorities, mismatch?

Skill mismatch among migrants and ethnic minorities in Europe

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Migrants, minorities, mismatch?

Skill mismatch among migrants and ethnic minorities in Europe

This report aims to increase our understanding of mismatch, and its impacts, among migrants and ethnic minorities in Europe. It reviews relevant international literature on the topic and looks at various aspects of labour-market performance of these groups. The focus is an empirical investigation of skill mismatch based on the European social survey. Important findings are, first, that migrants from outside the EU are disproportionately affected by overeducation, while ethnic minorities are affected by undereducation. Second, overeducation is higher in countries with low rates of training and a lower proportion of skilled workers while undereducation is lower where the incidence of training is higher. Finally, both forms of mismatch are greater for migrants educated abroad. Policy responses are needed: a focus on migrants from non-EU countries; an attempt to put migration in a more positive light than is often the case; developing and better implementing common standards for recognising qualifications obtained abroad; improving job access for both groups by supporting their competitiveness to apply for jobs; and encouraging employers to give people with a migrant background more job and training opportunities. Such policies could contribute to making better use of migrants' skills and alleviating current and future skill shortages in Europe.

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Europe 123, 570 01 Thessaloniki (Pylea), GREECE
Postal address: PO Box 22427, 551 02 Thessaloniki, GREECE
Tel. +30 2310490111, Fax +30 2310490020
E-mail: info@cedefop.europa.eu

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