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PART II

Matching Educational Background and Employment: A Challenge for Immigrants In Host Countries*

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Introduction

The growing migration of skilled workers is one of the salient features of recent international migratory trends in OECD countries, many of which have adopted measures to facilitate their recruitment, including tax incentives (OECD, 2004a). This trend is likely to persist, in light of the current and anticipated demographic changes at work in OECD countries. Even so, the processes of bringing skilled immigrants into the labour market are not always well understood and in some cases may entail particular difficulties.

As has been observed among the native-born population, immigrants (defined here as persons born abroad) with higher education degrees find it easier to enter the host-country labour market than do those with lower levels of education. This is the case overall in OECD countries, but the relative situation of immigrants *vis-à-vis* the native-born varies considerably. The discrepancies in terms of the employment and unemployment rates between the native-born and immigrants tend to increase with the level of education.

Labour market access is not measured solely by the yardstick of the unemployment rate, but is also assessed in terms of the match between qualifications and jobs. From this viewpoint, qualified immigrants encounter special difficulties in all OECD countries. This could be attributable to *i)* unobserved differences in the "value" of degrees or in intrinsic skills; *ii)* problems with the recognition of degrees acquired in the country of origin; *iii)* a lack of human and social capital specific to the host country (*e.g.* proficiency in the language); *iv)* the local labour market situation; and *v)* various forms of discrimination.

This chapter presents a measure of the occupational over-qualification of immigrants, together with some key factors that may explain why that level is higher or lower. It also looks at the differences observed according to immigrants' length of stay, their country of origin, their gender, the place where their diploma was earned, and their linguistic capabilities.

The first part gives an overview of the conditions surrounding immigrants' entry into the labour market in OECD countries. The second part presents the main theoretical approaches to over-qualification. The third part proposes a way of assessing occupational over-qualification, by place of birth and socio-demographic characteristics. The fourth part refines this analysis by attempting to control for certain cognitive and linguistic skills. The conclusion reviews the main results and highlights the policy issues related to addressing the over-qualification of immigrants.

1. Education: A labour market access factor which immigrants do not always benefit from

The immigrant population structure, by level of education, varies from one host country to another. Individuals born abroad tend however to be overrepresented at the highest and lowest levels (see Table II.1). In some OECD countries, nearly 50% of all immigrants between 25 and 64 years of age have not attended upper secondary school. Such is the case in France, for example, as well as in Italy, Portugal and Belgium. In contrast, in settlement countries (Australia, Canada, United States and New Zealand), which select some of their new

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Table II.1. **Education level of foreign- and native-born populations aged 25 to 64 in OECD countries, 2003-2004**

Percentages

	Foreign-born			Native-born		
	Less than upper secondary (ISCED 0/1/2)	Upper secondary and post-secondary non-tertiary (ISCED 3/4)	Tertiary (ISCED 5/6)	Less than upper secondary (ISCED 0/1/2)	Upper secondary and post-secondary non-tertiary (ISCED 3/4)	Tertiary (ISCED 5/6)
Australia	24.1	40.1	**35.7**	32.3	41.5	26.2
Austria	**36.7**	44.7	**18.5**	18.3	63.7	18.0
Belgium	**47.5**	27.1	25.4	35.9	34.6	29.6
Canada	22.1	31.8	**46.1**	22.9	38.3	38.8
Czech Republic	**29.0**	55.4	**15.6**	10.8	77.2	12.0
Denmark	**23.8**	38.3	**37.9**	17.0	51.3	31.7
Finland	**24.3**	**47.9**	27.8	23.4	43.0	33.6
France	**51.1**	27.8	21.1	32.8	43.6	23.7
Germany	**37.4**	43.7	18.9	12.3	62.2	25.5
Greece	38.3	**42.3**	19.4	43.1	37.3	19.6
Hungary	16.4	56.0	**27.6**	25.6	58.7	15.7
Ireland	23.9	30.7	**45.4**	39.2	35.3	25.5
Italy	48.7	**40.0**	**11.3**	52.2	36.7	11.1
Luxembourg	**36.7**	40.5	**22.8**	18.3	65.7	16.0
Netherlands	**43.5**	32.3	24.2	30.6	44.4	25.0
New Zealand	15.9	**46.5**	**37.6**	28.2	39.5	32.2
Norway	**16.9**	46.7	**36.4**	12.8	56.0	31.2
Poland	**27.1**	50.4	**22.5**	16.5	68.3	15.3
Portugal	52.0	**25.8**	**22.2**	78.0	11.2	10.8
Slovak Republic	**21.0**	61.7	**17.3**	13.3	74.6	12.1
Spain	40.9	**29.3**	**29.8**	57.1	17.5	25.4
Sweden	**21.7**	48.7	**29.5**	16.8	55.9	27.3
Switzerland	**29.6**	42.8	27.6	7.2	65.2	27.6
United Kingdom	**22.1**	43.6	**34.3**	15.9	54.8	29.4
United States	**30.1**	34.9	35.0	8.5	51.6	39.9

Notes: Bold figures indicate an overrepresentation of foreign-born at that level of education. Data refer to the population aged 15-64 for Australia. Reference years are 2001 for Canada and New Zealand, 2002 for the Netherlands, 2003 for Australia and 2004 for the United States.
The ISCED variable specifies the level of education according to the International Standard Classification of Education.
Sources: European countries: European Union Labour Force Survey (data provided by Eurostat); United States: Current Population Survey March Supplement; Australia: Survey of Household, Income and Labour Dynamics; Canada and New Zealand: Population censuses.

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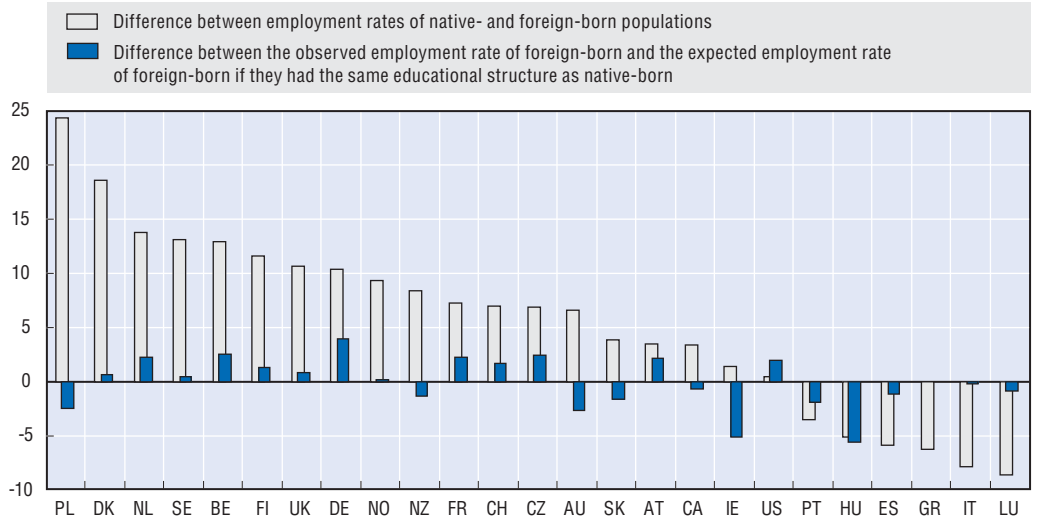
immigrants according to their level of education, as well as in Ireland, the United Kingdom, Norway and Denmark, the proportion of immigrants with low education is significantly smaller, and that of higher-educated immigrants generally exceeds 33%.

With the exception of the countries of southern Europe (Portugal, Spain, Greece), where immigration is a recent phenomenon, and of Luxembourg and Hungary, the employment rate for immigrants is below that for the native-born in all OECD countries. Education differences explain only a limited portion of this differential, except in Austria and the United States. In France, for example, even if the educational level of immigrants were comparable to that of the native-born, over 60% of the employment rate gap would persist (see Chart II.1). In Ireland, where immigrants are relatively well educated, if immigrants had the same educational profile as the native-born, their employment-rate gap with nationals would be significantly higher.

Chart II.1. **Differences in employment rates of native- and foreign-born populations, 2003-2004**

Percentage points



Note: 2001 for Canada and New Zealand, 2002 for the Netherlands, 2003 for Australia and 2004 for the United States.

Sources: European countries: European Union Labour Force Survey (data provided by Eurostat); United States: Current Population Survey March Supplement; Australia: Household, Income and Labour Dynamics; Canada and New Zealand: Population censuses.

Interpretation: In France difference between employment rates of natives and foreign-born is 7.3 percentage points. If the foreign-born had the same educational structure as the natives, their employment rate would be 2.3 points higher. In other words, 5 points, that is to say more than two third of the difference, cannot be explained directly by differences in qualifications.

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The results presented in Annex II.A1. that the immigrant employment rate is often close to or higher than that of the native-born with low education (defined here as people who have not gone to secondary school). That finding does not hold, however, for people, particularly women, with higher levels of education (Dumont and Liebig, 2005). It seems true of immigrants and the native-born alike that a higher level of education facilitates access to the labour market. Yet the fact remains that the gap between the native-born and immigrants persists, and is indeed growing, in nearly all OECD countries. In Denmark, Germany and Finland the gap exceeds 15 percentage points. The outcome in terms of the unemployment rate is similar. These results, taken as a whole, suggest that immigrants face special difficulties in making effective use of their human capital in the labour market.

Among those who hold a job, there is also the question of whether their job reflects their qualifications. Difficulties in accessing the labour market can occur in the case of over-qualification, *i.e.* holding a job that requires lesser qualifications or that pays less than would theoretically be available to people having the same level of education.

2. Occupational over-qualification: A variety of approaches

Research into the over-qualification phenomenon dates back to the 1970s, at a time when the "universalisation" of access to higher education led some people to fear that a growing imbalance in the supply of and demand for skilled labour would dilute the value of diplomas

Box II.1. **Different approaches to the over-qualification problem**

The "normative" approach uses a presumed correspondence between education and job qualifications (*e.g.* Chevalier, 2003; McGoldrick and Robst, 1996). This is a measure used frequently in the literature, yet its arbitrary nature makes it debatable, especially if the same correspondence is imposed for all countries. Prior analysis may be needed to identify more closely the correspondence between diploma and job. The ISCO occupational classification system devised by the International Labour Office (ILO) can be used to establish linkages between levels of qualification and educational levels as designated by the International Standard Classification of Education ISCED),[1] using this normative approach.

The "statistical" approach consists in observing the "normal" correspondences between education and employment. Such statistical norms can be applied, for example, through contingency table analysis or by assuming that all individuals whose years of schooling exceed the national average by more than one standard deviation are over-qualified (Bauer, 2002; Rubb, 2002; Nauze-Fichet and Tomasini, 2002; McGoldrick and Robst, 1996). In the case of France, Lainé and Okba (2004) have estimated the probability that a young person leaving the education system will hold a low-skilled job, depending on the level and field of the person's diploma and where the person lives. "Over-qualified" persons are those relegated to unskilled jobs when the statistical norm (in this case the estimation from a logistic model) would not predict such employment.

Norms for over-qualifiaction entail being able to compare and classify two individuals against a criterion of labour market success, such as type of job or pay. The job categories used do not always allow such classification, or in some cases they can make it appear to be excessively arbitrary. The hourly wage, when available, constitutes an objective criterion for classifying two individuals working in two very different types of jobs (which cannot necessarily be ranked) or in the same category of employment. In this regard, the study of wage distribution by level of education can provide a criterion of over-qualification. This was the approach taken by Nauze-Fichet and Tomasini (2002), whereby an individual earning lower wages than two-thirds (or any other threshold determined) of people having the next-lowest level of education is deemed over-qualified. Nevertheless, this standard is sensitive to the threshold selected and to the educational categories used.

The statistical and normative approaches are *de facto* quite similar. A statistical approach entails prior stipulation of the relevant categories or standards (in the above examples, it is necessary to define an "unskilled" job or levels of education and qualification for the construction of matrices, etc.). In return, a statistical approach can facilitate the adaptation of standards to new socio-economic realities. The use of ISCO and ISCED classification systems has called into question some of the equivalencies initially set by the ILO (the classification systems themselves have also been changed) and provides an example of this adaptation effort (OECD, 2002).

The third option (the "self-declared" approach) consists in compiling individuals' opinions on whether their jobs match their education, either by means of a direct question, or by asking people about the prerequisites for their employment (*e.g.* Dorn and Sousa-Posa, 2005; Sicherman, 1991; Alba-Ramirez, 1993; Sloane, Battu and Seaman, 1999; McGoldrick and Robst, 1996). This "subjective" approach may be subject to several sources of bias, such as how the question is worded or the impact of external variables.[2]

1. Case studies on the United States generally use the Dictionary of Occupation Titles (DOT) to establish these correspondences.
2. In their study of young people from immigrant backgrounds in France, Lainé and Okba (2004) show that the feeling of over-qualification among young men of North African descent reflects a real discounting of their capabilities on the labour market, but is equally observed independent of their "objective" over-qualification situation. For the authors, there may be other socio-cultural factors at work, including the aspirations and demands specific to that population.

(Freeman, 1976). If this did not in fact happen, it is in part because technical progress helped sustain the demand for skilled labour (Krueger, 1993). In effect, the emergence and spread of new technologies in the 1980s and 1990s had considerable repercussions on the organisation of tasks and the upgrading of jobs in many sectors of the economy, helping thereby to rebalance the match between education levels and available jobs (Acemoglu, 1999; Autor, Levy and Murnane, 2003). These trends have sparked renewed interest in the question of over-qualification since the 1990s (see Groot and van der Brink, 2000 and Rubb, 2003 for a summary analysis).

The literature on over-qualification distinguishes between three types of approaches: "normative", "statistical" and "self-declared" (see Box II.1). Generally speaking, research has focused primarily on the return to investment in education, and has concluded that: *i)* for the same level of education, persons who are over-qualified are paid less than people who are not over-qualified; *ii)* for the same type of employment, persons who are over-qualified for their jobs are paid more than those who have a level of education that corresponds to the job; *iii)* over-qualified persons have greater occupational mobility, which over time allows for a better match between their job and their initial training;[1] *iv)* women are generally more likely to find themselves in jobs that do not reflect their qualifications; and, lastly *v)* over-qualification results at least in part from a lack of human capital acquired beyond initial training (professional experience, job experience, further training) and in some cases from less favourable intrinsic skills. With few exceptions, these studies have not sought to address the specific situation of immigrants. The following section attempts to assess immigrants' over-qualification relative to that of the native-born, on a comparative basis for several OECD countries.

3. An evaluation of immigrants' risk of occupational over-qualification

Over-qualification is examined here with a normative-type measure based on the correspondence between level of education and qualifications for the job held (see Annex II.A2). It has also been analysed from the viewpoint of wages (where the wage distribution by level of education indicates whether a person is over-qualified or not, see Annex II.A3). The results from these two types of measurement point in the same direction.

Education and job qualification levels are grouped into three broad categories: Low, intermediate and high. An over-qualified individual is one who holds a job that requires lesser qualifications than would theoretically be available to him at his education level. Over-qualification rates are calculated for individuals with an intermediate or higher education.

Immigrants are more over-qualified than the native-born

Table II.2 shows the proportions of persons born abroad who are over-qualified, for different OECD countries, and compares them with those obtained for the native-born using data from employment surveys and the population census. These two sources produce comparable results in terms of over-qualification by place of birth, but they occasionally differ in their level because they refer to slightly different periods and population groups. The employment survey data are used to examine over-qualification by gender and length of stay, while census data allow a detailed analysis by country of origin.

According to employment survey data, over-qualification rates vary sharply among countries, ranging from 5% (Czech Republic) to 26% (Spain). In Spain, Ireland, the United

Table II.2. **Over-qualification rates of native- and foreign-born populations in some OECD countries**

Percentages

Sources	Survey Data Population 15-64, 2003-2004				Censuses and Population Registers Population 15+, Circa 2000			
	Total	Native-born (A)	Foreign-born (B)	B/A	Total	Native-born (A)	Foreign-born (B)	B/A
Australia	20.4	19.0	24.6	**1.3**	14.5	12.9	18.9	**1.5**
Austria	11.5	10.3	21.1	**2.0**	10.9	9.9	20.0	**2.0**
Belgium	16.2	15.6	21.6	**1.4**	. .	. .	. .	**. .**
Canada	. .	. .	. .	**. .**	22.1	21.3	25.2	**1.2**
Czech Republic	5.2	5.2	10.0	**1.9**	5.8	5.6	9.6	**1.7**
Denmark	10.9	10.4	18.6	**1.8**	11.9	11.2	24.5	**2.2**
Finland	14.4	14.3	19.2	**1.3**	16.2	16.1	21.6	**1.3**
France	11.6	11.2	15.5	**1.4**	11.0	10.8	13.7	**1.3**
Germany	12.3	11.4	20.3	**1.8**	. .	. .	. .	**. .**
Greece	11.3	9.0	39.3	**4.4**	13.1	10.1	32.4	**3.2**
Hungary	6.4	6.3	9.7	**1.5**	5.1	5.0	7.4	**1.5**
Ireland	16.6	15.7	23.8	**1.5**	17.5	16.9	21.0	**1.2**
Italy	7.0	6.4	23.5	**3.6**	7.3	6.9	15.4	**2.2**
Luxembourg	5.5	3.4	9.1	**2.7**	7.6	5.4	11.7	**2.2**
Netherlands	10.1	9.3	16.8	**1.8**	. .	. .	. .	**. .**
New Zealand	. .	. .	. .	**. .**	18.6	18.9	17.2	**0.9**
Norway	9.2	8.4	20.3	**2.4**	. .	. .	. .	**. .**
Poland	. .	. .	. .	**. .**	7.8	7.8	9.0	**1.2**
Portugal	9.0	7.9	16.8	**2.1**	9.0	8.3	13.6	**1.6**
Slovak Republic	. .	. .	. .	**. .**	26.9	26.9	24.5	**0.9**
Spain	25.5	24.2	42.9	**1.8**	8.1	7.3	19.8	**2.7**
Sweden	7.6	6.5	16.1	**2.5**	8.7	7.6	18.6	**2.4**
Switzerland	10.5	10.0	12.5	**1.3**	7.8	7.2	10.6	**1.5**
United Kingdom	15.5	15.3	17.8	**1.2**	14.4	14.0	18.4	**1.3**
United States (2002)	14.0	13.4	18.1	**1.4**	14.4	14.0	17.3	**1.2**

Sources (left columns): European countries: European Union Labour Force Survey (data provided by Eurostat); 2005 for the Netherlands; Australia: Survey of Household, Income and Labour Dynamics; United States: Current Population Survey March Supplement.
Sources (right columns): Population Censuses and population registers for all countries.

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Kingdom and Belgium, the over-qualification rates are high for immigrants and for the native-born alike. Conversely, in Luxembourg, the Czech Republic, Hungary, and to a lesser extent Switzerland, the over-qualification rate is low for both categories.

In all OECD countries, regardless of the source used (except for New Zealand, with population census data), immigrants are more likely to be over-qualification than persons born in the country. These results are consistent with those of Battu and Sloane (2002) in the United Kingdom on over-qualification among ethnic minorities (particularly Indians) relating primarily to problems with diploma recognition and discrimination. This finding is mirrored in the case of France by Laine and Okba (*op cit.*), for young people of North African origin. Similarly, Buchel and Battu (2003) found that foreigners in Germany were more likely to be over-qualified, *ceteris paribus*, then Germans. On the other hand, Wirz and Atukeren (2005) found no evidence that national origin had any effect in Switzerland.

These results point to a particularly high degree of over-qualification among immigrants compared to the native-born in countries of southern Europe (Italy, Greece and

to a lesser extent Portugal and Spain) and in some countries of northern Europe (Norway and Sweden). In southern Europe, immigration is a recent phenomenon, and consists essentially of workers who are apparently ready to accept unskilled jobs upon arrival, with the hope of subsequent upward professional mobility. One might well surmise that, for material and sociological reasons (with host country over-qualification standards being less of a consideration), immigrants are in fact less reluctant to accept jobs for which they are over-qualified.[2] Legal and regulatory aspects (*e.g.* requirements for work permits, region of settlement, and access to citizenship) can also limit the choice of jobs for new immigrants, at least temporarily. In this case, it could be expected that immigrants' over-qualification would diminish significantly as their stay lengthens (see below).

The situation is different in Norway and Sweden, where the proportion of migrants entering as workers is low and the proportion of refugees is substantial. These refugees are relatively highly skilled but face special problems arising from their status (sudden and fortuitous migration, no official certification of their education level and occupational qualifications, uncertainty as to the end of their stay, psychological complications, etc.), which may be compounded by significant language problems. Moreover, employers often have little or no information or knowledge about the validity of academic or occupational qualifications acquired abroad.

The discrepancies in relative over-qualification rates among countries may also reflect specific features of the labour market. Whereas some countries do a better job of integrating immigrants into employment but leave them at greater risk of being over-qualified (as in Italy, for example), others reveal a lower rate of immigrant over-qualification but have a high rate of immigrant unemployment (as in Belgium).[3] More generally, labour market characteristics, and especially those likely to affect the supply of low-skilled labour (*e.g.* existence of a minimum wage, prevalence of short-term temporary work, the laws governing contracts, the certification process), may be invoked to explain why some countries have a greater incidence of over-qualification. However, as will be demonstrated below, it is individual characteristics that generally explain a preponderant portion of the disadvantage observed for immigrants.

Women, recent immigrants, and those from outside the OECD area are most likely to be over-qualified

The very high over-qualification rates for immigrants in certain countries may be interpreted through the particular circumstances of immigrant women (see Table II.3).[4] This is especially the case in Greece, where the over-qualification rate for female immigrants is 53%, *versus* 9% for native Greek women, and in Italy (where the rates are respectively 27% and 7%). In the majority of cases, the over-qualification rate is higher for female immigrants than for male immigrants, although the United States, the United Kingdom, Portugal, New Zealand, Sweden and Ireland are exceptions. The relative over-qualification of women *vis-à-vis* men is more pronounced among immigrants: This is particularly so in Germany, Austria, Canada and Sweden, countries in which native-born women, by contrast, have lower over-qualification rates than do native-born men.

Given the presumed importance of human and social capital specific to the host country, one might expect, a priori, that the risk of over-qualification would decline with length of stay, in a manner similar to what Chiswick (1978) found regarding wage convergence between immigrants and the native-born in the United States. The results presented in Table II.4 seem in fact to indicate an improvement with length of stay in

Table II.3. **Over-qualification rate of native- and foreign-born populations by gender in some OECD countries, 2003-2004**

Percentages

	Foreign-born		Natives	
	Women	Men	Women	Men
Australia	21.6	17.4	13.7	12.3
Austria	24.8	18.1	9.3	11.1
Belgium	24.6	19.4	17.7	13.8
Canada	27.6	23.2	21.7	20.9
Czech Republic	12.8	7.8	6.6	4.0
Denmark	19.7	17.5	10.5	10.4
Finland	26.2	12.2	18.8	9.7
France	18.8	12.9	14.2	8.6
Germany	23.6	17.9	9.9	12.8
Greece	53.4	28.3	9.0	9.0
Hungary	10.5	9.0	7.3	5.5
Ireland	23.9	23.6	15.6	15.8
Italy	27.4	19.9	7.1	5.9
Luxembourg	14.1	5.6	3.2	3.6
Netherlands	16.6	16.9	9.9	8.7
New Zealand	16.0	18.3	23.3	14.4
Norway	25.1	16.1	10.6	6.3
Poland	9.3	8.8	9.1	6.5
Portugal	16.2	17.5	8.9	6.5
Slovak Republic	27.0	22.2	27.9	26.0
Spain	47.6	38.8	24.4	24.1
Sweden	15.3	16.9	7.2	5.7
Switzerland	13.8	11.4	7.6	12.0
United Kingdom	17.0	18.4	14.9	15.7
United States	17.0	19.0	11.2	15.5

Sources: European countries: European Community Labour Force Survey (data provided by Eurostat); 2005 for the Netherlands; United States: Current Population Survey March Supplement 2002; Australia, Canada, New Zealand, Poland and Slovak Republic: Population censuses, Circa 2001.

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several OECD countries, and especially in Ireland and Norway, where the immigrant over-qualification rate among those settled for more than 10 years is half the rate for those who have been in the country for less than three years.

These results, as well as the over-qualification rates observed in certain economic sectors (hotels and catering, mining and manufacturing, household services) support the idea that newly arrived immigrants are more likely than the native-born to accept unskilled jobs, even arduous and low-paying ones, but that they tend to move on from such work as they stay longer in the host country and become fully integrated into the labour market.

A number of studies have examined the role of the time variable in correcting over-qualification situations for the population as a whole, and especially for new labour market entrants. In a study on Switzerland, Dorn and Sousa-Poza (2005) found that 44% of over-qualified persons were still in that status after one year, 20% after two years and fewer than 10% after four years. In the United States, Rubb (2003) showed that 26% of over-qualified persons are no longer in that situation the following year (see also Sicherman (1991) for the United States and Alba-Ramirez (1993) for Spain). Dolton and Vignoles (2000) showed that in the United Kingdom, 38% of people were over-qualified in their first job, and 30% after six years.

Table II.4. **Over-qualification rate of the foreign-born population according to their duration of stay in some OECD countries, 2003-2004**

Percentages

	≤ 3 years	≤ 5 years	≤ 10 years	≥ 11 years
Austria	28.6	21.8	20.5	20.3
Belgium	16.8	27.4	27.6	20.8
Czech Republic	15.5	19.6	12.6	7.2
Denmark	27.9	29.1	25.5	13.9
Finland	–	–	28.2	15.2
France	21.8	32.0	27.1	13.4
Germany	25.4	30.3	28.3	17.1
Greece	47.4	47.0	44.6	32.4
Hungary	–	–	–	8.9
Ireland	34.0	27.6	17.7	15.3
Italy	33.7	39.5	31.5	25.5
Luxembourg	8.2	8.5	11.1	8.5
Netherlands	42.5	36.7	28.0	13.9
Norway	31.8	35.4	17.1	17.2
Portugal	–	–	–	7.0
Slovak Republic	–	–	–	12.6
Spain	55.8	54.8	47.7	30.2
Sweden	26.2	25.8	23.2	12.7
United Kingdom	20.9	18.3	18.3	16.9
United States	24.7	22.5	21.7	16.3

Sources: European Union Labour Force Survey (data provided by Eurostat); 2005 for the Netherlands; United States: Current Population Survey March Supplement 2002.

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Any analysis of trends in the situation of immigrants over time requires specific precaution, however, recognising that entries and exits from the territory can cause selection bias: Immigrants who have been in the country longest may have greater capacity to enter the labour market than did those who left the country after a short stay (Edin, Lalonde and Aslund, 2000). Moreover, length of stay can potentially conceal cohort effects: Groups may differ by their level of education, their country of origin, the category under which they entered the host country, and the conditions in which they arrived on the labour market.

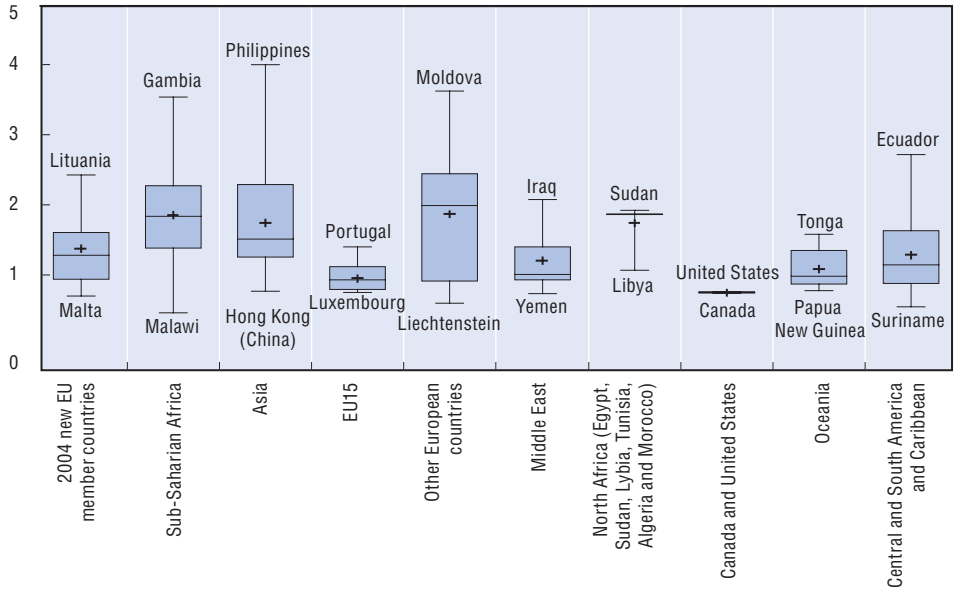
In any case, for all countries with the exception of Ireland and Portugal, immigrants still have a higher rate of over-qualification after 10 years than do the native-born. This gap reaches 10 percentage points in Austria and in Norway. The fact that convergence has not been fully achieved in many countries could suggest, then, that immigrants face difficulties in accumulating human and social capital specific to the host country, or that other, non-observed factors are behind this persistent situation.

Finally, a breakdown of immigration by geographic origin shows that individuals originally from outside the OECD area are on average at greater risk of over-qualification than other immigrants. For the OECD as a whole, some 15% of immigrants from an OECD country with an intermediate or higher education will be over-qualified, while the figure is close to 20% for people from outside the OECD area. Moreover, the change in over-qualification rates is much more limited for people from OECD countries than for those from non-member countries. This reflects in part a certain homogeneity in the education systems in OECD countries and the characteristics of migration between those countries.

A more detailed analysis reveals the variety of situations by region of origin. Chart II.2 shows, in the form of a "box plot" (see Box II.2), the distribution of average ratios

of over-qualification for each country of birth within a given region. For example, among the new member countries of the European Union (EU), Lithuania appears as the country of origin for which the average ratio of the immigrant over-qualification rate to that for the native-born is highest (2.7). This tendency provides a more general illustration of the situation of immigrants from the former Soviet republics. The regional average for the new EU members is 1.7.

Chart II.2. **Dispersion in the over-qualification rates of the foreign-born by main regions of origin relative to those observed for the native-born, Circa 2000**



Sources: Censuses and population registers.

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Box II.2. **The "Box and Whiskers Plot"**

A "box and whiskers plot" is a graphic representation of several distribution parameters for a variable (here the average ratio of over-qualification rates between immigrants and the native-born). It should be read as indicated opposite.

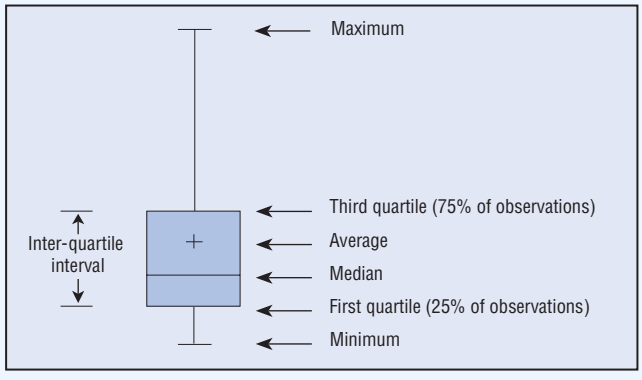

Chart II.2 confirms, first, that people originating from the EU15, from Canada or from the United States, are on average no more over-qualified than persons born in the country in which they reside. On the other hand, it shows that immigrants from sub-Saharan Africa and European countries from outside the EU, and Asia as well, are particularly exposed to over-qualification. However, there are huge differences within these regions, by country of origin. According to the average figures for the OECD, people born in the Philippines are the most likely (4.3 times more likely) to be over-qualified compared to the native-born. Among immigrants from the Middle East, persons born in Iraq are especially exposed (on average, 2.3 times the rate for the native-born).

Detailed results by place of birth (see Table II.5) highlight the fact that certain groups of educated immigrants are particularly exposed to over-qualification compared with the average over-qualification rate for total immigrants in the given receiving country. This is especially pronounced for people born in Colombia, the Philippines, the former Soviet republics, and to a lesser extent the former Yugoslavia. On the other hand, some groups of migrants, such as those from Argentina and South Africa, despite the diversity of migration patterns, seem relatively unaffected by the problem wherever they go. Finally, Moroccans and Indians show the greatest differences in their profiles by host country.

A number of factors mentioned above can shed some light on this situation. For instance, immigrants from regions or countries that produce a greater proportion of

Table II.5. **Over-qualification rate of immigrants by country of birth and destination country, Circa 2000**

Percentages (in blue zone) and ratio (relative to the average over-qualification rate of immigrants in the given destination country)

	Destination country						
Country of birth	Australia	Canada	France	Spain	Sweden	United Kingdom	United States
Argentina	20.6	21.6	10.9	11.8	14.9	17.2	13.4
	1.1	*0.9*	*0.8*	*0.6*	*0.8*	*0.9*	*0.8*
China	31.5	24.5	19.7	16.3	19.3	25.3	13.4
	1.7	*1.0*	*1.4*	*0.8*	*1.0*	*1.4*	*0.8*
Colombia	44.9	30.8	24.6	33.3	24.6	35.1	21.3
	2.4	*1.2*	*1.8*	*1.7*	*1.3*	*1.9*	*1.2*
Former USSR	24.7	31.7	19.4	38.9	27.6	27.4	24.4
	1.3	*1.3*	*1.4*	*2.0*	*1.5*	*1.5*	*1.4*
Former Yugoslavia	26.3	26.4	17.8	18.3	25.5	23.5	21.2
	1.4	*1.0*	*1.3*	*0.9*	*1.4*	*1.3*	*1.2*
India	27.7	33.2	24.9	12.2	18.2	21.9	13.9
	1.5	*1.3*	*1.8*	*0.6*	*1.0*	*1.2*	*0.8*
Morocco	16.3*	21.1	14.3	18.3	32.5	24.6	20.7
	0.9	*0.8*	*1.0*	*0.9*	*1.7*	*1.3*	*1.2*
Philippines	43.3	45.0	46.6	37.9	48.9	27.7	24.8
	2.3	*1.8*	*3.4*	*1.9*	*2.6*	*1.5*	*1.4*
South Africa	12.4	16.4	11.7	9.0*	15.5*	14.3	13.6
	0.7	*0.6*	*0.9*	*0.5*	*0.8*	*0.8*	*0.8*
Turkey	22.3	21.3	14.8	9.6*	19.9	27.4	15.7
	1.2	*0.8*	*1.1*	*0.5*	*1.1*	*1.5*	*0.9*
Native-born	**12.9**	**21.3**	**10.8**	**7.3**	**7.6**	**14.0**	**14.0**
Foreign-born	**18.9**	**25.2**	**13.7**	**19.8**	**18.7**	**18.4**	**17.3**

* Population between 300 and 500 observations.

Sources: Population censuses and population registers.

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refugees may have higher over-qualification rates because they have entered the labour market under less favourable conditions. Another factor may have to do with the quality of educational systems in the country of origin, or the transferability of diplomas. Questions of the recognition and capitalisation of diplomas, or levels of study, no doubt play an important role in explaining the relative over-qualification of immigrants. Those questions may relate to information asymmetry (employers may question the curricula of a diploma earned in a foreign country), or the conditions under which knowledge can be transferred (inadequate mastery of the host country language can make it difficult to put to use the skills acquired in the country of origin, the certification process may be complex, certain jobs may be closed to foreigners), and in some cases the immigrant's knowledge may not be readily applicable in another country (law, customs, etc.).

Beyond the issue of diploma recognition, it can also be surmised that discrimination exists. It may be due to: *i)* a lack of information (especially on another country's education system and its diplomas); *ii)* a preference for hiring certain nationalities; or even *iii)* institutional frameworks, through restrictions on foreigners' access to certain occupations, particularly in the public sector.

A more thorough explanation of the determinants requires information on some generally unobserved aspects of skills, such as the place where the diploma was obtained, cognitive skills, or proficiency in the host country language. These aspects can be investigated for some OECD countries through an international literacy survey.

4. Interpretation of over-qualification by levels of literacy

The International Adult Literacy Survey, IALS (see Box II.3) uses tests of written, graphic and quantitative comprehension to classify people by the level of their cognitive and linguistic skills. Data on individual employment and training are also included in this survey, thereby enabling the estimation of occupational over-qualification indicators based on a definition comparable to that used in the previous section. Moreover, the survey provides relevant information on where the diploma was obtained (based on the highest diploma earned before immigrating and the highest diploma held at the time of the survey) and on the mother tongue which is used as a proxy to linguistic proficiency.

Bearing in mind sample size and other constraints on data availability, the estimates in this section are confined to Australia and to a pooled sample of European countries of the OECD (Germany, Ireland, the Netherlands, Sweden, the United Kingdom, Belgium, Italy, Finland, Portugal, Denmark, Norway and Switzerland).

Calculation of over-qualification rates by level of quantitative literacy (Chart II.3), which is presumably less directly affected by proficiency in the host country language, reveals a clear association between literacy and effective use of skills. In other words, people with the lowest literacy scores are those with the highest occupational over-qualification rates. This association is very strong in Australia, but has been validated only for the native-born in Europe. It tends however to be more pronounced if the sample is restricted to people with higher education. The other indicators of literacy included in the IALS survey produce similar results. Consequently, by controlling for cognitive skills as measured in the IALS, one can explain a portion of over-qualification and perhaps the effect specifically associated with the "immigrant" variable.

To this end, a logit model has been estimated, where the probability of being over-qualified, explained by individual characteristics, is the dependent variable. It includes the

Box II.3. **International Adult Literacy Survey, IALS**

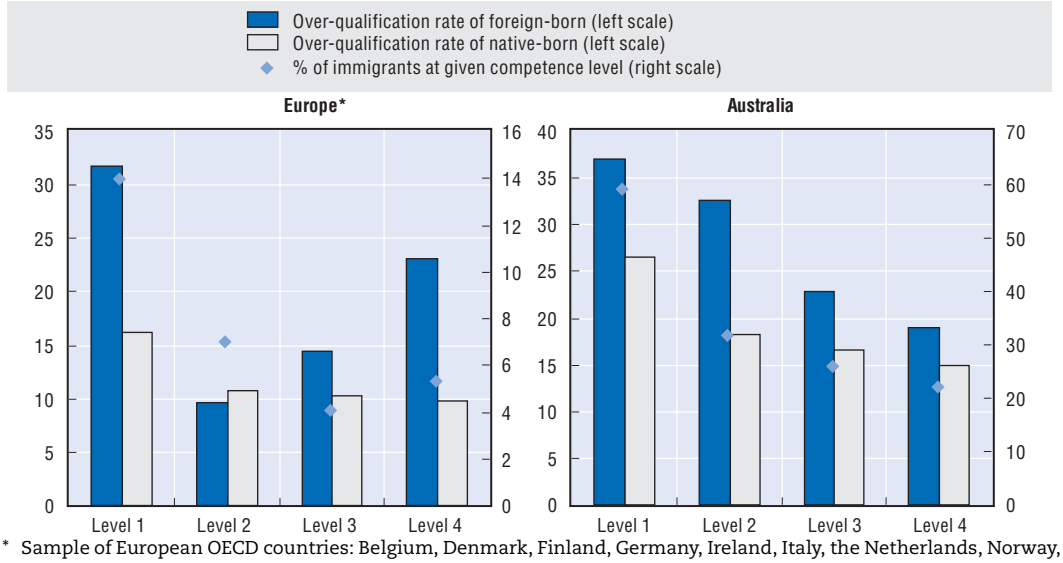
The objective of the International Adult Literacy Survey is to measure literacy, defined as "the ability to understand and employ printed information in daily activities, at home, at work and in the community, to achieve one's goals and to develop one's knowledge and potential". It considers three categories of literacy: Prose literacy, document literacy and quantitative literacy.

In each category, tasks are assigned (understanding of prose text, interpreting a document, etc.) and rated according to difficulty on a scale from 0 to 500. The individual's score is calculated at the point where his probability of success in the task is 80%.

The 1994, survey was conducted in English- and French-speaking Canada, in France, Germany, Ireland, the Netherlands, Poland, Sweden, French- and German-speaking Switzerland, and the United States. In 1996, Australia, Belgium, Great Britain, New Zealand and Northern Ireland were added, followed in 1998 by Chile, the Czech Republic, Denmark, Finland, Hungary, Italy, Norway, Slovenia and Italian-speaking Switzerland, bringing the number of countries participating in the survey in 1998 to 21 in total.

Chart II.3. **Over-qualification rate by level of quantitative literacy and country of birth in Europe and in Australia, Circa 1995**

Percentages



* Sample of European OECD countries: Belgium, Denmark, Finland, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom.

Sources: Europe: International Adult Literacy Survey (IALS) 1994, 1996 or 1998 according to the country (*cf.* Box II.3); Australia: Survey of aspects of Literacy, 1996.

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main socio-demographic variables available (gender, age, level of education) and also indicators of literacy, as well as the other variables mentioned above, namely mother tongue and origin of diploma.[5] The main results are presented in Tables II.6 and II.7.

When gender, age and education level are the only factors taken into account (model 1), people born abroad remain significantly more over-qualified than the native-born. In Australia, for example, a person born abroad would be about 1.8 times more likely to be over-qualified than a native-born. Moreover, young people, and women in Europe, tend to

Table II.6. **Logistic model of the probability of over-qualification (Australia)**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	–2.582 ***	–3.308 ***	–3.221 ***	–3.292 ***	–3.414 ***	–3.4119 ***	–3.1053 ***	–3.1634 ***
Birth status								
Native-born	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Foreign-born	0.589 ***	0.394 ***	0.346 ***	0.377 ***	0.351 ***	0.0146	–0.1063	–0.0987
	1.8	*1.5*	*1.4*	*1.5*	*1.4*	*1.0*	*0.9*	*0.9*
Gender								
Men	0.168	0.264 **	0.109	0.198 **	0.208 **	0.2205 **	0.2306 **	0.3391 **
	1.2	*1.3*	*1.1*	*1.2*	*1.2*	*1.2*	*1.3*	*1.4*
Women	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Age								
15-24	0.691 ***	0.691 ***	0.739 ***	0.753 ***	0.718 ***	0.7573 ***	0.7575 ***	0.749 ***
	2.0	*2.0*	*2.1*	*2.1*	*2.0*	*2.1*	*2.1*	*2.1*
25-44	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
45-64	–0.073	–0.088	–0.089	–0.099	–0.091	–0.1246	–0.1033	–0.1241
	0.9	*0.9*	*0.9*	*0.9*	*0.9*	*0.9*	*0.9*	*0.9*
Educational level								
Intermediate	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
High	1.383 ***	1.691 ***	1.691 ***	1.682 ***	1.735 ***	1.7468 ***	1.7327 ***	1.6816 ***
	4.0	*5.4*	*5.4*	*5.4*	*5.7*	*5.7*	*5.7*	*5.4*
Quantitative literacy proficiency (QUANT)								
Weak		1.613 ***			0.963 ***	1.0803 **	1.1038 ***	0.7455
		5.0			*2.6*	*2.9*	*3.0*	*2.1*
Average		1.047 ***			0.561 **	0.6215 ***	0.6243 ***	0.6194 **
		2.9			*1.8*	*1.9*	*1.9*	*1.9*
Average-high		0.523 ***			0.224	0.245	0.2407	0.2558
		1.7			*1.3*	*1.3*	*1.3*	*1.3*
High		ref.			ref.	ref.	ref.	ref.
Prose literacy proficiency (PROSE)								
Weak			1.490 ***		0.426	0.3178	0.198	0.1056
			4.4		*1.5*	*1.4*	*1.2*	*1.1*
Average			0.944 ***		0.355	0.3039	0.2471	0.2607
			2.6		*1.4*	*1.4*	*1.3*	*1.3*
Average-high			0.568 ***		0.291 **	0.2643	0.2439	0.335 **
			1.8		*1.3*	*1.3*	*1.3*	*1.4*
High			ref.		ref.	ref.	ref.	ref.
Document literacy proficiency (DOC)								
Weak				1.588 ***	0.415	0.2858	0.2684	0.447
				4.9	*1.5*	*1.3*	*1.3*	*1.6*
Average				1.026 ***	0.283	0.2489	0.2592	0.279
				2.8	*1.3*	*1.3*	*1.3*	*1.3*
Average-high				0.542 ***	0.165	0.1485	0.1477	0.1264
				1.7	*1.2*	*1.2*	*1.2*	*1.1*
High				ref.	ref.	ref.	ref.	ref.
"Origin of diploma"								
Country of origin						0.6436 ***	0.6329 ***	0.689 ***
						1.9	*1.9*	*2.0*
Receiving country						ref.	ref.	ref.
Mother tongue								
Receiving country language							–0.2995 **	–0.4133 ***
							0.7	*0.7*
Different from receiving country language							ref.	ref.
Area of residence								
Urban								–0.1124
								0.9
Rural								ref.

Table II.6. **Logistic model of the probability of over-qualification (Australia)** *(Cont.)*

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Size of enterprise								
< 20 persons								ref.
Between 20 and 200 persons								0.3979 ***
								1.5
Between 200 and 500 persons								–0.1235
								0.9
> 500 persons								0.3722
								1.451
Number of observations	3 638	3 638	3 638	3 638	3 638	3 638	3 638	3 076
% of concordant pairs	66	70.4	70.0	70.4	71.2	71.3	71.3	71.4

Note: *** corresponds to a threshold of 1% and ** to a threshold of 5%. Ref. stands for the category of reference. Figures in italic refer to odds ratios.
Source: Survey of aspects of Literacy, 1996.

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be more over-qualified then older people, or men. These initial results are consistent with those presented earlier.

It is also apparent that having a higher education degree does not specifically protect a person from over-qualification and indeed tends to increase the risk of mismatch between education and job (the risk is at least four times higher in Australia and in the European countries considered).[6] The impact holding a tertiary degree on the relative over-qualification of immigrants *versus* the native-born is *a priori* indeterminate. This would not be the case if the differential observed for immigrants were partially ascribed to differences in the quality of the education system or, more generally, to the transferability of foreign diplomas.[7]

Each literacy variable (models 2 to 5) has a significant effect on both over-qualification, and the "immigrant" variable. If introduced separately, all the literacy variables affect over-qualification significantly, in the sense that, the weaker the indicator the higher the probability of over-qualification. These variables, are however, correlated among themselves and, if introduced simultaneously, the quantitative skills indicator is stronger in Australia, whereas in Europe the prose literacy indicator seems to have a greater impact. It is likely that troubles in reading reflect difficulties in mastering the language of the host country in Europe. This outcome suggests that, beyond the level of education, there are other factors relating to intrinsic skills that affect performance on the labour market. This is consistent with some of the studies on over-qualification previously mentioned (Chevallier, 2003; Bauer, 2002).

It is also noteworthy that, when one controls for the literacy level, the effect associated with the "immigrant" variable diminishes. Even if no causal relationship can be deduced, this result implies that some of the aspects of human capital, which are not included in the level of education, may affect over-qualification. Yet in Australia, as in Europe, the "immigrant" variable remains very significant and exerts a major influence (odds ratio of about 1.5). Ferrer, Green and Riddell (2004) arrive at similar but more pronounced results for Canada, using the Ontario Immigrant Literacy Survey (OILS). They show that immigrants' literacy scores are on average lower than those of native-born workers, and that this explains about two-thirds of the earnings gap.

Table II.7. **Logistic model of the probability of over-qualification (Europe)**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	–2.831 ***	–3.177 ***	–3.201 ***	–3.185 ***	–3.248***	–3.2414 ***	–3.3476 ***	–3.682 ***
Birth status								
Native-born	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Foreign-born	0.518 ***	0.380 ***	0.325 ***	0.404 ***	0.336***	–0.0324	0.0149	0.2642
	1.7	*1.5*	*1.4*	*1.5*	*1.4*	*1.0*	*1.0*	*1.3*
Gender								
Men	–0.212 ***	–0.163 ***	–0.246 ***	–0.179 ***	–0.219***	–0.2226 ***	–0.2245 ***	–0.3688 ***
	0.8	*0.9*	*0.8*	*0.8*	*0.8*	*0.8*	*0.8*	*0.7*
Women	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Age								
15-24	0.974 ***	0.967 ***	0.993 ***	0.990 ***	0.984***	0.9815 ***	0.9837 ***	0.8659 ***
	2.6	*2.6*	*2.7*	*2.7*	*2.7*	*2.7*	*2.7*	*2.4*
25-44	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
45-64	–0.378 ***	–0.414 ***	–0.455 ***	–0.429 ***	–0.454***	–0.4587 ***	–0.4604 ***	–0.4362 ***
	0.7	*0.7*	*0.6*	*0.7*	*0.6*	*0.6*	*0.6*	*0.6*
Educational level								
Intermediate	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
High	1.488 ***	1.633 ***	1.656 ***	1.624 ***	1.660***	1.6614 ***	1.6639 ***	1.7691 ***
	4.4	*5.1*	*5.2*	*5.1*	*5.3*	*5.3*	*5.3*	*5.9*
Quantitative literacy proficiency (QUANT)								
Weak		1.165 ***			0.721***	0.7069 ***	0.7086 ***	0.4611 **
		3.2			*2.1*	*2.0*	*2.0*	*1.6*
Average		0.465 ***			0.213*	0.209	0.2077	0.0764
		1.6			*1.2*	*1.2*	*1.2*	*1.1*
Average-high		0.220 ***			0.046	0.032	0.034	–0.0751
		1.2			*1.0*	*1.0*	*1.0*	*0.9*
High		ref.			ref.	ref.	ref.	ref.
Prose literacy proficiency (PROSE)								
Weak			1.326 ***		1.054***	1.0475 ***	1.0359 ***	1.0355 ***
			3.8		*2.9*	*2.9*	*2.8*	*2.8*
Average			0.426 ***		0.232*	0.2243 *	0.2231 *	0.316 **
			1.5		*1.3*	*1.3*	*1.3*	*1.4*
Average-high			0.289 ***		0.191**	0.1888 **	0.1828 **	0.1464
			1.3		*1.2*	*1.2*	*1.2*	*1.2*
High			ref.		ref.	ref.	ref.	ref.
Document literacy proficiency (DOC)								
Weak				0.868 ***	–0.411**	–0.4085 **	–0.3918 *	–0.1616
				2.4	*0.7*	*0.7*	*0.7*	*0.9*
Average				0.516 ***	0.076	0.0848	0.0924	0.14
				1.7	*1.1*	*1.1*	*1.1*	*1.2*
Average-high				0.258 ***	0.101	0.1098	0.1138	0.112
				1.3	*1.1*	*1.1*	*1.1*	*1.1*
High				ref.	ref.	ref.	ref.	ref.
"Origin of diploma"								
Country of origin						0.6447 ***	0.669 ***	0.4939 **
						1.9	*2.0*	*1.6*
Receiving country						ref.	ref.	ref.
Mother tongue								
Receiving country language							0.1043	0.1697
							1.1	*1.2*
Different from receiving country language							ref.	ref.
Area of residence								
Urban								0.1384 **
								1.1
Rural								ref.

Table II.7. **Logistic model of the probability of over-qualification (Europe)** *(Cont.)*

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Size of enterprise								
< 20 persons								ref.
Between 20 and 200 persons								0.3845 ***
								1.5
Between 200 and 500 persons								0.5563 ***
								1.7
> 500 persons								0.2625 **
								1.3
Number of observations	15 107	15 107	15 107	15 107	15 107	15 080	15 039	11 626
% of concordant pairs	67.3	71.0	71.4	71.2	72.4	72.3	72.3	73.6

Note: Sample of European OECD countries: Belgium, Denmark, Finland, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom. *** corresponds to a threshold of 1% and ** to a threshold of 5%. Ref. stands for the category of reference. Figures in italic refer to odds ratios.
Source: International Adult Literacy Survey (IALS) 1994, 1996 or 1998 according to the country.

StatLink http://dx.doi.org/10.1787/021886686304

When the "origin of diploma" variable is introduced (model 6) the results change considerably. This variable is significant in all regressions and alters the effect associated with the "immigrant" variable. The "immigrant" variable is in fact no longer significant, in Australia and in the European countries considered, if one controls for diplomas obtained in the host country. This finding is even more important when one considers that nearly half of immigrants had obtained their diploma in the host country at the time of the survey. This supports the argument that diploma value and intrinsic skills can explain the relatively higher degree of over-qualification among immigrants.

In the case of Canada this argument has been used to explain the fact that immigrants from countries with lower-quality education systems (as measured by international testing results, see Hanushek and Kimko, 2000) have lower returns to education (Sweetman, 2004). Using census data from 1986, 1991 and 1996, the author shows that "a move from the 25th to the 75th percentile of the school quality index is associated with, on average for both sexes, a 10% increase in annual earnings for those with 16 years of school". In another study on Canada, Alboim, Finnie and Meng (2005) show that the effect of the "immigrant" variable in the wage equation disappears when they control for the origin of diploma and for literacy. The gap in the returns to education by origin is in part explained by the level of skills.[8]

However, caution must be used in interpreting the role of the "diploma origin" variable, for it is possible that this betrays labour market selection mechanisms operating, for example, through institutional barriers to diploma recognition, or discriminatory behaviour. This question cannot be entirely dismissed, as the indicators of literacy, which are supposed to measure skills, have a clear effect, but remain supplementary to the origin of the diploma. It is possible, however, that the literacy indicators taken from the IALS are insufficient to explain the unobserved heterogeneity of skills among the most highly qualified, since they aim to identify basic comprehension difficulties.

When the variables explaining the language proficiency indicator are added (model 7), this becomes significant in Australia, with the expected sign (people whose mother tongue is English are less over-qualified). Yet it is not in itself sufficient to cancel the effect of the "immigrant" variable, and it does not change the outcomes obtained with the "diploma

origin" variable. Proficiency in the host country language, *ceteris paribus*, thus allows people to capitalise more readily on their skills in the labour market. It may be however, that part of the effect associated with this variable is ascribed to the region of origin, to the extent that, in Australia, a significant portion of English speakers come from OECD member countries (the United Kingdom and New Zealand in particular). The "odds ratio" associated with having a mother tongue different from the host-country language (1.4 times more chance of being over-qualified) is however weaker than that associated with poor or average quantitative literacy (3 and 1.9, respectively). In the European countries considered, the mother-tongue effect is not significant, probably because of the importance of the prose literacy variable.

Finally, if variables relating to labour market conditions are added, in particular firm size (internal labour market size) and urban/rural location (external labour market size), the model's explanatory power increases, although it does not change the previous conclusions. Persons employed in very small firms are more likely to be over-qualified, as are those who live in rural areas where employment opportunities and occupational mobility are limited.

Conclusion

Regardless of the definition used and the country in question, immigrants are more likely than the native-born to hold jobs for which they are over-qualified. Foreign-born women would seem to be at an even greater disadvantage. What is the exact significance of this lesser match between education and employment? Recent literature on over-qualification has shown that much, if not most, of this disadvantage in employment can be explained by intrinsic differences in abilities or human capital not involving education. "Literacy" skills as measured in the IALS may in fact explain a portion (about one-third) of immigrants' relative over-qualification. But these variables are not sufficient, *ceteris paribus*, to explain the entire gap observed between immigrants and the native-born.

The analyses presented in this chapter underline the crucial importance of the place of education. This variable may translate differences in terms of the content and quality of schooling (at a given level of education), but it may also serve to distort employers' interpretation of education levels, given the lack of information available to them. The role of the diploma-origin variable should thus be considered with caution, recognising that it may also reflect differences in terms of social capital or "soft skills".

One might expect that a longer stay in the country would facilitate labour market integration and allow immigrants to capitalise on their qualifications. The fact that a longer period of residence is not always a sufficient condition for closing the over-qualification gap between immigrants and the native-born raises other questions. In any event, deeper analysis, using longitudinal data, is required in order to explain this finding.

More generally, the analysis needs to be sharpened so as to factor in differences between types of diplomas and national particularities, and to get a better grasp on the effects attributable to different waves of migration. One could also further explore the role of over-qualification in the intergenerational transfer of human capital amongst immigrants, *i.e.* the effect of parents' occupational over-qualification in motivating children to pursue higher education.

In any case, the fact that in all of the countries considered, at least 25%, and on average nearly 50%, of skilled immigrants between 15 and 64 years of age are inactive, unemployed

or relegated to jobs for which they are over-qualified, poses the question of whether the best use is being made of their skills. This issue is even more relevant, with the aging of populations in OECD countries, particularly in Europe, where the demands for skilled labour are likely to grow. Generally speaking, it is important to find ways to capitalise more effectively on the human resources of skilled immigrants already settled in the host country, and those of new arrivals, whether selected or not.[9] Several OECD countries have already introduced policies in this direction, and their impact should be systematically evaluated.

From this viewpoint, various measures, that could be included in bilateral and multilateral agreements,[10] to grant better recognition to diplomas and qualifications and to give employers access to information on education acquired abroad (such as via Internet platforms, on-the-job skills evaluation, etc.) are very useful. More generally, policies that promote lifelong training (for example refresher programmes, language courses) and occupational mobility (for example reducing the number of regulated professions and jobs closed to foreigners) or anti-discrimination should be part of the range of tools made available to foster labour market integration of immigrants at their level of skills.

Notes

1. In part, this reflects the problems that young people encounter upon first entering the labour market (see Quintini and Martin, 2006) and raises the question of the transition between education and employment. In this context, it may be asked whether the problems encountered by new entrants on the labour market simply reflect the necessary "period of adjustment" in the process of matching jobs and people, or whether they reflect a mismatch between education and the labour market, or perhaps even the fact that employers' recruitment criteria and practices do not focus exclusively on education credentials; see for example Giret, Lopez and Rose (2005) for an in-depth discussion of these issues as they apply to France.
2. This finding is even more compelling in countries where the native-born are highly reluctant to accept jobs beneath their qualifications, and would rather go unemployed (see for instance, Iribarne, 1990, in the case of France).
3. There is no obvious correlation, for the countries examined, between over-qualification rates and participation rates, employment rates or unemployment rates.
4. Controlling for age does not affect over-qualification ratios. While older immigrants have longer average periods of residence (and should therefore be less exposed to over-qualification, see below), in countries where the immigrant over-qualification rate declines with age (Belgium, Spain, France, Ireland, Norway, Portugal and the United Kingdom) this finding applies equally to the native-born.
5. If a portion of people susceptible to over-qualification are assumed to prefer inactivity (while perhaps pursuing studies or supplementary training), or extend their job search in order to find a position better suited to their skills, a selection bias may potentially affect the estimation of a logit model. It could then be argued that this bias affects immigrants and the native-born differently, particularly if the native-born are more averse to accepting a job beneath their qualifications. To take account of this effect, the model has been estimated in two stages, using the marital status variable as an instrument. The results are not significantly changed, but the quality of the instrumentation was disappointing. Further analysis is therefore needed in order to control this potential bias properly.
6. This finding emerges as well from Labour Force Survey data (except for Luxembourg). To some extent, this is due to the definition of over-qualification, in that people with higher education may be over-qualified by one or two levels, while those with only a secondary school diploma would be over-qualified only if they are employed in an elementary occupation (see Annex II.A1). Of course, elementary occupations constitute a very small proportion of total employment in most OECD countries.
7. In this case one might expect that, *ceteris paribus*, having a higher education degree would make immigrants more likely to be over-qualified. The data however contradict this assertion: The cross-

variable "immigrant-higher education degree" is not significant in Australia, and has the reverse sign of that expected for European countries.

8. A number of studies on Canada (Hum and Simpson, 1999; Li, 2001; Reitz, 2000) as well as on the United States (Bratsberg and Ragan, 2002) and Israel (Frieberg, 2000) have analysed the impact of the country where the diploma was obtained on incomes. Overall, these studies confirm that the impact is important and significant. See Alboim, Finnie and Meng (2005) for a summary.

9. See Reitz (2005) or Alboim, Finnie and Meng (2005) for a discussion of policy implications in the Canadian case.

10. UNESCO has established six regional conventions on recognition of academic qualifications (Africa, Arab countries, Asia and Pacific, Latin America and Caribbean, and two European conventions) and an interregional convention (for the Mediterranean). The UNESCO conventions are intended to promote recognition of qualifications for academic purposes, but they sometimes have a role, both *de facto* and *de jure*, of recognising degrees for a vocational purpose (*e.g.* obtaining a job). In this context, there are also agreements on diploma and qualifications recognition within the European Union (*http://europa.eu/scadplus/leg/fr/s19005.htm*) and between Australia and New Zealand (Trans-Tasman Mutual Recognition Arrangement).

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ANNEX II.A1

Employment and Unemployment Rates of Native- and Foreign-born Populations by Level of Education, 2003-2004

Table II.A1.1. **Employment and unemployment rates of native- and foreign-born populations by level of education, 2003-2004**

Percentages

	Natives						Foreign-born					
	Employment rate			Unemployment rate			Employment rate			Unemployment rate		
	Low (ISCED 0/1/2)	Medium (ISCED 3/4)	High (ISCED 5/6)	Low (ISCED 0/1/2)	Medium (ISCED 3/4)	High (ISCED 5/6)	Low (ISCED 0/1/2)	Medium (ISCED 3/4)	High (ISCED 5/6)	Low (ISCED 0/1/2)	Medium (ISCED 3/4)	High (ISCED 5/6)
Australia	55.5	78.0	84.0	11.7	4.8	1.6	48.2	64.8	78.7	8.0	5.5	4.2
Austria	43.6	73.1	84.1	8.6	3.8	2.2	54.3	68.5	77.5	12.7	9.4	5.1
Belgium	41.9	66.3	83.9	10.0	6.8	3.0	33.9	53.5	73.7	22.6	16.1	9.6
Canada	54.8	76.2	84.4	11.8	7.7	4.6	55.9	70.5	77.9	8.6	7.7	6.9
Czech Republic	22.9	72.0	85.6	24.0	7.2	2.2	36.9	62.4	86.4	27.1	10.1	1.3
Denmark	59.7	79.7	87.1	7.7	4.3	3.9	46.2	59.7	69.2	15.0	13.2	11.4
Finland	47.7	72.3	85.0	18.7	10.3	4.3	39.1	64.1	69.5	31.5	18.8	15.3
France	47.1	70.6	78.7	12.2	7.9	5.8	47.8	62.1	70.8	18.4	14.4	11.8
Germany	40.2	69.1	84.5	15.6	10.4	4.4	45.1	62.4	68.1	20.3	14.7	12.5
Greece	49.2	59.5	82.1	8.7	12.4	7.0	64.4	64.4	68.7	9.0	12.1	13.2
Hungary	27.9	66.2	82.3	12.5	5.4	1.8	25.8	66.5	82.2	7.0	4.1	2.1
Ireland	48.0	71.5	86.5	7.3	3.7	2.2	44.4	63.8	76.5	10.5	6.4	4.3
Italy	45.6	65.9	81.4	10.2	7.7	5.4	59.5	67.4	78.8	9.6	8.3	5.3
Luxembourg	33.7	61.9	82.8	6.0	2.9	1.9	63.9	64.7	78.4	4.2	6.9	5.9
Netherlands	63.9	80.9	88.1	3.3	1.8	1.5	50.7	69.9	78.3	6.5	7.3	3.3
New Zealand	63.8	76.0	88.2	10.9	6.9	3.3	55.6	62.6	79.5	11.9	9.3	6.1
Norway	52.6	77.9	87.5	8.0	3.6	2.9	43.9	67.9	79.8	15.0	8.9	5.6
Poland	22.8	56.4	80.6	30.4	20.4	7.4	11.0	24.6	51.6	15.4	29.3	3.0
Portugal	66.5	62.3	87.6	6.7	6.4	4.6	67.5	70.0	83.6	11.2	7.5	7.5
Slovak Republic	14.3	66.6	84.3	49.8	16.4	5.2	31.1	53.4	85.0	43.6	23.8	5.7
Spain	53.4	60.2	79.5	12.6	11.1	7.9	61.2	68.9	73.2	15.3	13.0	11.9
Sweden	57.7	80.4	87.4	8.0	5.3	2.9	45.9	66.8	76.0	18.3	11.6	8.8
Switzerland	57.1	80.4	92.4	4.8	3.1	1.9	63.4	74.1	81.9	10.4	8.2	5.7
United Kingdom	52.5	77.5	88.1	8.8	4.7	2.3	39.3	66.9	81.8	12.2	7.9	4.2
United States	35.9	71.0	83.0	15.5	6.7	3.2	58.6	70.0	77.6	9.1	5.7	4.3

Note: 2001 for Canada and New Zealand, 2002 for the Netherlands, 2003 for Australia and 2004 for the United States.
Sources: European countries: European Union Labour Force Survey (data provided by Eurostat); United States: Current Population Survey March Supplement; Australia: Survey of Household, Income and Labour Dynamics; Canada and New Zealand: Population censuses.

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ANNEX II.A2

Measuring Competencies by Educational Level and Job Classification

The analysis presented in this document is based on a correspondence between the level of education and job classification, which makes it possible to formulate a standard for "over-qualification". Underlying this approach is the fact that the ISCO classification system provided by the International Labour Office can be used to distinguish "levels of qualification" that can be linked to the educational levels presumably needed to hold the corresponding jobs (OECD, 2002), and thus to the ISCED categorisation of UNESCO.

As the first step, Table II.A2.1 condenses the ISCO classification into three categories of jobs demanding low, intermediate and high skills. The same is done with the ISCED classification in Table II.A2.2. These categories are used to define an over-qualified individual as one who has "skilled or highly skilled" education level and holds an "intermediate" or "unskilled" job, or one who has an "intermediate" level of education and holds an "unskilled" job. A person who is "under-qualified" can be defined as one who has a lower level of education than that which would correspond to the skills classification of the job he holds.

There are limitations to this approach, which stem first from the categories themselves. The attempt to achieve uniformity through the ISCO and ISCED classification systems can mask certain particularities associated with specific countries or periods of time: The content of diplomas of an apparently similar level in two different countries may differ, and within any given country, the value of a diploma may vary over time. Reporting bias can also affect the findings, and perhaps even more so in respect to the qualifications for a job, which are more readily subject to "over-estimation". The matching of categories of educational levels and categories of qualifications (especially when they are highly aggregated), as noted in ILO recommendations (OECD, 2002), is arbitrary. The exact prerequisites for any given job are not examined (and may vary from one country to another). The existence of widely divergent standards for measuring the correspondence between education and job qualifications attests to the fact that the correspondence cannot be definitively pinned down. Lastly, in many cases the supply of skills as measured by education is not exhaustive: It corresponds to educational attainment at the time individuals complete their schooling, and excludes skills acquired outside the classroom (*e.g.* ongoing training, etc.).

There is every reason to believe, then, that to calculate an over-qualification rate from a simple correspondence between education and job classification runs the risk of multiple

biases. Observing gross rates of over-qualification is certainly not the best approach here. A comparison between over-qualification rates among immigrants and the native-born faces an asymmetric bias from the implicit comparison of two different education systems. Lastly, the comparison of relative degrees of over-qualification requires the assumption that these biases work in the same direction for all countries. The results of this approach to over-qualification must in all cases be interpreted with caution.

Table II.A2.1. **Conversion of ISCO-88 9 categories to 3 categories**

ISCO-88 ↓ Recoding of jobs →	Low-skilled	Intermediate	High-skilled
(0: Armed Forces)			
1: Legislators, senior officials and managers			X
2: Professionals			X
3: Technician and associate professionals			X
4: Clerks		X	
5: Service workers and shop and market sales workers		X	
6: Skilled agricultural and fishery workers		X	
7: Craft and related trades workers		X	
8: Plant and machinery operators and assemblers		X	
9: Elementary occupations	X		

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Table II.A2.2. **Conversion from ISCED 7 categories to 3 categories**

Level of studies ↓ Recoding of level of studies →	Low-skilled	Intermediate	Skills or highly skilled
Pre-primary education or preschool (starting at age 2 or 3)	X		
Primary education (starting at age 5, 6 or 7 and running for four to six years)	X		
Lower secondary education (running 2 to 6 years, with an average of three)	X		
Upper secondary education (running for 2 and 5 years)		X	
Post-secondary non-tertiary education		X	
The first stage of tertiary education (university)			X
Second stage of tertiary education (university)			X

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Table II.A2.3. **Correspondence between ISCED education level and ISCO employment level**

		ISCO employment level		
		Low-skilled	Intermediate	Skilled or highly skilled
ISCED education level	Low-skilled		Under-qualified	Under-qualified
	Intermediate	Over-qualified		Under-qualified
	Skilled or highly skilled	Over-qualified	Over-qualified	

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ANNEX II.A3

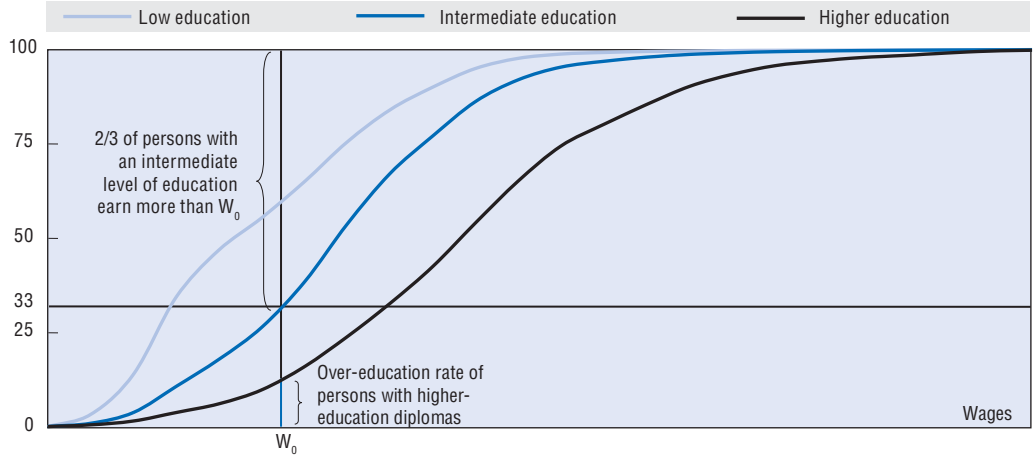
Over-qualification Defined by Wages

Over-qualification as defined in main text of this chapter is based on a presumed correspondence between level of education and the qualifications required to carry out the job. This approach has the dual drawbacks of being both subjective and rigid (in the sense that to escape over-qualification one would have to change jobs). Another option for measuring over-qualification is to relate it to wages. Insofar as investment in education – all else being equal – should enhance the productivity of work and thus raise the expected level of wages, it can be considered that individuals, who are paid patently less than the wages corresponding to their level of education, are not valued at their true level of competency. In this connection, "an individual will be considered over-qualified in terms of wage levels if more than a certain percentage of the persons holding a diploma of the next-lowest category earn more than that individual". Here, this measure of over-qualification proposed in the case of France (Nauze-Fichet and Tomasini, 2002) has been extended to a sample of OECD countries. Wage-measured over-qualification rates are calculated at the threshold of the first third; a person is thus over-qualified if two-thirds of the individuals at the level of education immediately lower are better paid (see Chart II.A3.1 below).[1]

Graphical representation of wage-measured over-qualification

Over-qualification rates can be read directly from charts representing cumulative wage curves. The chart below, for example, represents wage profiles in Germany for the

Chart II.A3.1. **Overeducation rates for individuals with higher education in Germany, 2003-2004**



population as a whole. The continuous horizontal line represents the 33.3% cut-off. The abscissa of the intersection of the two straight lines represents the wages earned by more than two-thirds of all individuals with an intermediate education. The intersection of the vertical straight line and the wage curve for persons with higher-education diplomas defines the over-qualification rate for that group, *i.e.* the percentage of higher-education graduates paid less than two-thirds of what those with an intermediate education are paid.

For reasons of statistical availability, the sample of countries is restricted to Belgium, Canada, France, Germany, Greece, Italy, Portugal, Switzerland and the United States. These countries feature highly divergent migration and labour market profiles. This diversity is reflected in widely differing situations with regard to over-qualification. By definition, the study is limited to salaried employees, and to enhance the uniformity of the populations studied, it covers only people who are working full-time.

Wage-measured over-qualification rates calculated in this way are disparate, ranging from 4.5% in Switzerland to 31.7% in Greece (see Table II.A3.1). Given the discrepancy between the two methods, these rates are not very comparable to those calculated with the method used in the chapter. Nevertheless, as in the chapter, immigrants are more over-qualified than the native-born in nearly all countries studied. The over-qualification rate is

Table II.A3.1. **Wage-based over-qualification rate of native- and foreign-born by level of education in some OECD countries, 2003-2004**

	Level of education	Foreign-born	Over-qualification rate foreign-born/native-born
Belgium	Total	**23.5**	**1.2**
	Intermediate (ISCED 3/4)	28.9	1.1
	High (ISCED 5/6)	18.3	1.7
Canada (2003)	Total	**21.4**	**1.1**
	Intermediate (ISCED 3/4)	20.2	1.0
	High (ISCED 5/6)	23.6	1.8
France	Total	**19.8**	**1.0**
	Intermediate (ISCED 3/4)	23.0	0.9
	High (ISCED 5/6)	15.0	1.2
Germany	Total	**10.5**	**1.2**
	Intermediate (ISCED 3/4)	5.6	0.9
	High (ISCED 5/6)	23.3	1.5
Greece	Total	**59.3**	**2.0**
	Intermediate (ISCED 3/4)	62.7	1.6
	High (ISCED 5/6)	51.0	3.6
Italy	Total	**34.9**	**1.7**
	Intermediate (ISCED 3/4)	37.8	1.7
	High (ISCED 5/6)	23.8	1.8
Portugal	Total	**16.5**	**1.8**
	Intermediate (ISCED 3/4)	15.9	1.2
	High (ISCED 5/6)	17.3	3.9
Switzerland	Total	**6.7**	**1.8**
	Intermediate (ISCED 3/4)	2.0	0.7
	High (ISCED 5/6)	14.7	2.3
United States	Total	**13.0**	**1.3**
	Intermediate (ISCED 3/4)	13.4	1.3
	High (ISCED 5/6)	12.7	1.4

Source: European countries: European Union Labour Force Survey (data provided by Eurostat); United States: Current Population Survey March Supplement; Canada: Survey of Labour and Income Dynamics.

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relatively high in southern Europe, especially in Greece and Portugal and to a lesser extent in Canada. In France and the United States, immigrant over-qualification remains fairly low. Regardless of the method used, Germany stands in an intermediate position, although wage-measured over-qualification is close to that of France and the United States. The only significant change concerns Switzerland, where occupational over-qualification is low, but wage-measured over-qualification is high. Overall, inter-country differences with respect to the relative over-qualification of immigrants are confirmed.[2]

There is a notable divergence, however, in the fact that the ratio of the wage-measured over-qualification rate for immigrants to that for the native-born in all countries is greater at higher levels than at intermediate levels of education. In Portugal, for example, although amongst persons with a secondary-school education over-qualification rates for the two populations are similar, the chances that a higher-education graduate will be over-qualified are almost four times as great for an immigrant as for a native.

The general literature on over-qualification shows that the occupational over-qualified tend to earn more than people doing the same jobs who are not over-qualified. The above findings would therefore suggest that the wage premium for the occupational over-qualified is greater for higher-education graduates than for those with an intermediate level of education, and that the premium is also higher for the native-born than for immigrants. This is what is suggested by the findings of Battu and Sloane (2002) who show, in the case of the United Kingdom, that white people are paid a higher premium for over-qualification.

Notes

1. Calculations are based on monthly wages net of social security contributions in the case of France, Belgium, Greece, Italy and Portugal, but on gross pay with regard to Germany, the United States and Switzerland. The first and last percentiles of wages are eliminated for all countries.
2. Two supplementary verifications were performed. On the one hand, an analysis taking account of age structures (and thus eliminating the age structure effect within the different levels of qualifications) produced similar results. On the other hand, a logistic regression on the probability of being over-qualified as measured by wages, taking gender, occupational experience, level of education, country of origin, and size of firm as explanatory variables, supported several of the main findings of the study (women are more over-qualified than men, and immigrants are more over-qualified than the native-born).