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## **Are recent immigrants different? A new profile of immigrants in the OECD based on DIOC 2005/06**

**Sarah Widmaier and Jean-Christophe Dumont**

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**ARE RECENT IMMIGRANTS DIFFERENT?  
A NEW PROFILE OF IMMIGRANTS IN THE OECD (DIOC 2005/06)**

**Sarah Widmaier and Jean-Christophe Dumont**

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## ABSTRACT

Increasing international migration and changing immigrant populations in OECD countries make international comparable data on migrant populations essential. These data should be updated regularly to capture a detailed picture of migrant populations. This document presents the first results of the update of the Database on Immigrants in OECD Countries (DIOC) for the years 2005/06. It describes immigrant and emigrant populations by socio-demographic characteristics and labour market outcomes in the OECD, as well as updated “brain drain” figures.

In 2005/06, 10.8% of the population in the OECD was foreign-born, representing 91 million persons. Latin American and African migrant populations increased by more than 30% between 2000 and 2005/06, slightly more than that of Asian migrants (27%). Labour market outcomes of immigrants vary by region and country of origin, but they improved significantly since 2000. In many OECD countries, low-educated foreign-born fare better on the labour market than their native-born counterparts, but high-educated migrants tend to have lower employment rates and higher unemployment rates than their native-born counterparts.

Migration of high-educated women increased significantly, in 2005/06, a third of recent migrant women held a tertiary diploma being at par with recent immigrant men. OECD countries received more African-born high-educated migrants (460 000) than similarly educated migrants from China (320 000), but less than from India (550 000). Asian migrants tend to be mainly employed in professional occupations, while North African and Latin American migrants are overrepresented in low-skilled and elementary occupations. Sub-Saharan migrants and European migrants are concentrated at both ends of the skill spectrum in both professional and elementary occupations. Overqualification appears to be widespread since on average in the OECD, 30% of immigrants holding a university degree work in intermediate or low-skilled jobs.

Latin America (6%), Europe (4.5%), and Oceania (4.8%) have the highest total emigration rates in 2005/06. The emigration rate of the highly educated increased significantly in upper-middle-income countries from 3.6% in 2000 to 5.2% in 2005/06, but also in low-income countries from 4.2% to 5.4%. Highest emigration rates of the highly educated are registered for Caribbean countries, such as Haiti and Trinidad and Tobago where three out four high educated live in the OECD in 2005/06.

**Keywords:** international migration, database, DIOC, migrant stocks, emigration rates, skills, education, immigrants, emigrant

## RÉSUMÉ

La croissance des migrations internationales et les changements intervenus dans la composition de la population immigrée des pays de l'OCDE rendent indispensables des données internationalement comparables. Ces données devraient être mise à jour régulièrement afin d'obtenir une image précise des populations immigrées. Ce document présente les premiers résultats de la mise à jour de la base de données sur les immigrés dans les pays de l'OCDE (DIOC) pour les années 2005/06. Il décrit les populations émigrées et immigrées selon leurs caractéristiques sociodémographiques et leurs résultats sur les marchés du travail au sein de l'OCDE et présente de nouvelles estimations de la fuite des cerveaux.

En 2005/06, 10.8 % de la population des pays de l'OCDE était née à l'étranger, soit 91 millions de personnes. Les populations immigrées d'Amérique Latine et d'Afrique ont augmenté de 30 % entre 2000 et 2005/06. Cela représente un peu plus que l'augmentation des migrants en provenance de l'Asie (27 %). Les résultats sur le marché de travail varient selon les régions et les pays d'origine, mais ils se sont sensiblement améliorés depuis 2000. Dans de nombreux pays de l'OCDE, les personnes nées à l'étranger peu qualifiées ont de meilleurs résultats sur le marché du travail que leurs homologues autochtones, mais les personnes nées à l'étranger hautement qualifiées ont systématiquement des taux d'emploi inférieurs et des taux de chômage plus élevés que leurs homologues autochtones.

La migration de femmes hautement qualifiées a augmenté de manière significative en 2005/06, un tiers des immigrées arrivées récemment possédant un diplôme de l'enseignement supérieur, la même proportion que leurs homologues masculins. Les pays de l'OCDE ont reçu plus d'immigrés hautement qualifiés nés en Afrique (460 000) que d'immigrés ayant le même niveau nés en Chine (320 000), mais moins que d'Inde (550 000). Les immigrés en provenance d'Asie ont tendance à être employés dans les professions hautement qualifiées, tandis que ceux d'Afrique du Nord et d'Amérique Latine sont surreprésentés dans les professions peu qualifiées et les emplois d'ouvrier. Les immigrés originaires d'Afrique sub-saharienne et d'Europe sont plutôt concentrés aux deux extrémités du spectre des qualifications professionnelles, dans les professions hautement qualifiées et les emplois d'ouvrier. En moyenne dans les pays de l'OCDE, 30 % des migrants hautement qualifiés occupent une profession intermédiaire ou peu qualifiée.

L'Amérique latine (6 %), l'Europe (4.5 %) et l'Océanie (4.8 %) ont les taux d'expatriation les plus élevés en 2005/06. Le taux d'expatriation des hautement qualifiés a augmenté sensiblement dans les pays à revenu moyen-supérieur, de 3.6 % en 2000 à 5.2 % en 2005/06, mais également dans les pays à faible revenu, de 4.2 % à 5.4 %. Les taux d'expatriation des hautement qualifiés sont les plus élevés dans les pays des Caraïbes, comme à Haïti et Trinité et Tobago, où trois quart des personnes hautement qualifiées vivent dans un pays de l'OCDE en 2005/06.

**Mots clés :** migration internationale, base de données, DIOC-E, DIOC, effectif de migrants, taux d'expatriation, qualification, éducation, immigrés, émigrés

**ARE RECENT IMMIGRANTS DIFFERENT?  
A NEW PROFILE OF IMMIGRANTS IN THE OECD (DIOC 2005/06)<sup>1,2</sup>**

## Introduction

1. Between 2000 and 2008, before the financial and economic crisis, migration flows to OECD countries increased significantly by more than 33%. The increase was observed in OECD settlement countries (Australia, Canada, New Zealand and the United States), but even more so in several European countries, notably in southern Europe and Ireland. In the five years prior to 2005/06, OECD countries received more than 16 million new migrants and the migrant population increased by more than 20%.

2. The characteristics of labour demand in destination countries and recent developments in migration policies have contributed to reshape immigrant populations in the OECD area. The update of the Database on Immigrants in OECD countries (DIOC 2005/06)<sup>3</sup> reveals that migration to the OECD tends to be more diversified by country of origin, more highly educated<sup>4</sup>, more concentrated in the most active working ages (25-49) and in some cases more feminized.

3. Countries of origin have been affected differently by recent migration trends. Between 2000 and 2005/06, total emigration rates to the OECD increased in about 50 non-OECD origin countries, decreased significantly in about 20 countries, and remained stable in the 80 other origin countries for which data are available. In the meantime, emigration rates of the highly qualified (i.e. “brain drain”) increased in most countries, despite investments in education and increases of human capital in many developing and emerging countries of origin.

4. DIOC 2005/06 provides a detailed picture of the scope and the main characteristics of migration to the OECD from more than 200 countries of origin. It helps to answer the following specific questions: How did migrant population change from 2000 to 2005/06? Which countries have received most of the high-educated or low-educated migrants? Where do they come from? To which extent do recent migrants differ from previous ones? How are immigrants from different countries of origin faring in the labour market? What is the evidence concerning “brain waste” and “brain drain” and which countries of origin are

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<sup>1</sup> This paper was written by Sarah Widmaier (OECD) and Jean-Christophe Dumont (OECD). The paper benefited from a contribution of Gilles Spielvogel (University Paris 1 Panthéon-Sorbonne) who drafted Annex A.1 of the document and from the statistical support of Maria Carolina Alban (OECD).

<sup>2</sup> This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

<sup>3</sup> Previous versions of this database provide detailed data on migrants’ characteristics around 2000 in OECD countries (DIOC 2000), as well as an extended profile of immigrants which covers about 100 destination countries worldwide (DIOC-E 2000). These data can be accessed and downloaded free of charge from [www.oecd.org/migration/dioc](http://www.oecd.org/migration/dioc) and [www.oecd.org/migration/dioc/extended](http://www.oecd.org/migration/dioc/extended), respectively.

<sup>4</sup> High-educated persons are defined in this document as having completed at least the first stages of tertiary education, which corresponds to ISCED 5 or ISCED 6 according to the International Standard Classification of Education (ISCED 1997). Low-educated persons are defined as having an educational attainment level of primary education or less (ISCED 0, ISCED 1 or ISCED 2).



mostly affected? What are the main characteristics and the possible determinants of recent trends in female migration?

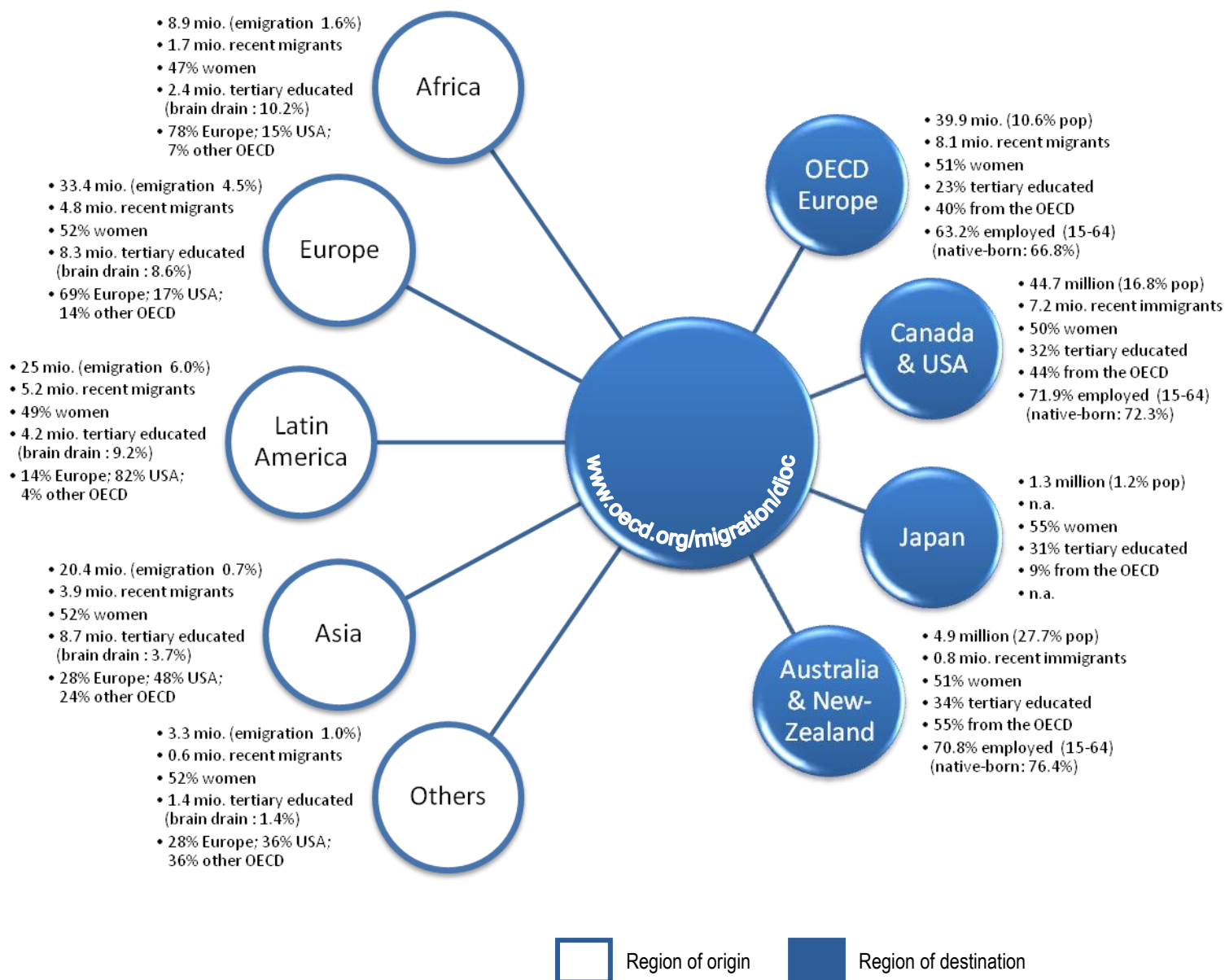
5. All of the above questions will be addressed in the paper, which is divided in three main sections. The first section describes the changes in the size and composition of migrant populations in OECD destination countries between 2000 and 2005/06, as well as the labour market integration of immigrants and their educational attainment levels. The second section takes the perspective of origin countries and looks at total emigration rates, emigration rates by skill level, and the evolution of these rates from 2000 to 2005/06. Section 3 of the paper analyses recent trends in the international migration of women and the gender dimension of the “brain drain”.

### Main findings

- In 2005/06, there were of 91 million foreign-born in the 25 OECD countries for which data are available. On average, **10.8% of the total population in the OECD was foreign-born** in 2005/06, compared with 9.5% in 2000. 16.5 million of the 91 million were recent immigrants (defined as those foreign-born with a residence of less than five years).
- In 2005/06, almost **51% of migrants in the OECD were women**, a figure, similar to the proportion in 2000.
- In general, immigrants tend to be underrepresented in younger age groups (15-24) and among the elderly (65+), but they are overrepresented among the prime-age working population. Immigrants aged 25 to 49 account for more than half of the increase in migrant population in the OECD between 2000 and 2005/06.
- **The 15 most important countries of origin account for more than half of overall recent migration**, but smaller countries of origin also make an important contribution, illustrating the diversity of migration sources to the OECD.
- Latin American and African migrant populations increased by more than 30% between 2000 and 2005/06, slightly more than that of Asian migrants (27%). In absolute terms, **the largest increase in migrant population was observed for Latin American countries (+5.9 million)**, while the population of Asian migrants increased by +4.4 million.
- **Intra-OECD movements remain important.** In 2005/06, almost 38 million migrants, or 43% of total migrant population in the OECD, came from another OECD country.
- From 2000 to 2005/06, the **labour market outcomes of immigrants improved** both in terms of employment-to-population ratios and of unemployment rates. On average in 2005/06, about 68% of the foreign-born aged 15 to 64 were employed, and 9% of migrant workers were unemployed (respectively 69% and 7% for natives).
- Labour market outcomes of immigrants vary significantly by region and country of origin. They tend to be less favourable for African migrants, but above average for OECD migrants.
- In many OECD countries, **low-educated foreign-born fare better on the labour market than their native-born counterparts, but high-educated migrants have almost systematically lower employment rates** and higher unemployment rates than their native-born counterparts do.
- Asian migrants tend to be mainly employed in professional occupations, while North African and Latin American migrants, as well as the Turkish-born, are overrepresented in low-skilled and elementary occupations. Sub-Saharan migrants and European migrants are concentrated at both ends of the skill spectrum in both professional and elementary occupations.

- **Overqualification of immigrants is an issue of increasing concern.** On average in the OECD, 30% of immigrants holding a university degree work in intermediate or low-skilled jobs. This figure increased by more than four percentage points compared to 2000 and the gap with the natives widened. Overqualification is particularly widespread among high-educated migrants originating from low-income countries (36%, excluding India) and lower-middle-income countries (38% excluding China).
- In 2005/06, about **26 million immigrants holding a university degree were living in the OECD** (25 countries). However, low-educated migrants still dominate with more than 32 million persons (31 million in 2000).
- In 2005/06, **a third of all recent immigrants to the OECD were tertiary educated** (5.2 million persons). Between 2000 and 2005/06, the United States and European OECD countries (16 countries included) received, respectively, 1.9 million and 2.2 million high-educated migrants. In the 5 years prior to 2005/06, OECD countries received more African-born high-educated migrants (460 000) than similarly educated migrants from China (320 000), but less than from India (550 000).
- Latin America (6%), Europe (4.5%), and Oceania (4.8%) have the highest total emigration rates, while Asia and North America have only 1% of their populations living abroad and Africa 1.6%. The highest emigration rates are recorded for countries with smaller populations, notably small island states.
- In 2005/06, about one out of ten high-educated persons born in Africa or in Latin America were living in the OECD, compared with one out of 30 from Asia.
- **The emigration rate of the highly educated increased significantly in upper-middle-income countries** from 3.6% in 2000 to 5.2% in 2005/06, **but also in low-income countries** from 4.2% to 5.4%.
- North Africa is the only region where a decline in the emigration rate of the highly educated is observed since 2000 (-1.2 percentage point). This is due to the rapid improvement in the share of persons holding tertiary degrees in that region. Large improvements in human capital are also observed in other regions of origin (notably in the Caribbean), but in these increases were more than offset by increases in high-skilled migration to the OECD (i.e. increased “brain drain”).
- **Migration of high-educated women is increasing significantly.** In 2005/06, 33% of recent migrant women held a tertiary diploma compared with 31.5% for men (corresponding figures for all migrants are respectively 27.9% for women and 28.4% for men).
- In total, 3.9 million more migrant women with a tertiary degree were living in the OECD in 2005/06 than in 2000 (of whom 1.7 million originated from least developed countries, including 730 000 from India). The emigration rate of high-educated women coming from low-income countries (excluding India) increased to 9.4% in 2005/06 compared with 7.5% in 2000.
- On average, **58% of migrant women are employed, which is 3 percentage points less than for native-born women.** Furthermore, whatever their skill level and for all countries of origin, migrant women have lower employment rates than their male counterparts. However, **migrant women tend to be more integrated in the labour market of OECD countries than women in their countries of origin are.**
- Similar to their male counterparts, high-educated migrant women face particular difficulties in accessing the labour market but also in finding jobs corresponding to their formal qualifications. The highest gaps between the employment rate of native-born and foreign-born high-educated women are registered in Denmark, Germany, Austria, France, Switzerland and Finland (at least 16 percentage points difference).

**Chart 1: Main characteristics of migrant populations aged 15 and over in OECD countries by region of origin and destination, 2005/06**



Notes: Weighted averages for both regions of origin and destination. Recent immigrants refer to immigrants with less than 5 years of residence in the destination countries in 2005/06.

Source: Database on Immigrants in OECD Countries, DIOC 2005/06; www.oecd.org/migration/dioc

## 1. International migration patterns to the OECD

### 1.1 Main changes of migrant populations

*Migration to the OECD is increasing...*

6. Overall, the migrant population in the OECD<sup>5</sup> (25 countries) increased by about 16.9 million (+23%)<sup>6</sup> between 2000 and 2005/06 (Table 1 and see Chart 1 for an overview of characteristics of migrant populations by regions of origin and destination). This represents a rapid increase that, if sustained, would lead to a doubling of the foreign-born population in the OECD in just two decades. Immigration increased in all OECD countries, but mainly in southern European countries and in Ireland. Between 2000 and 2005/06, the number of immigrants in Spain doubled, whereas the share of foreign-born among total population increased by 46% in Ireland, around 40% in Finland and 37% in Italy (Chart 2).

7. In 2005/06, in the 25 OECD countries for which data are available, there were 91 million foreign-born, representing 10.8% of the population aged 15 and over (+1.3 percentage point compared with 2000). This figure ranges from a low of 0.4% in Mexico to a high of 39.5% in Luxembourg (see Chart 2). Further information on immigrant populations by destination countries is shown in Table A.3 in the Annex.

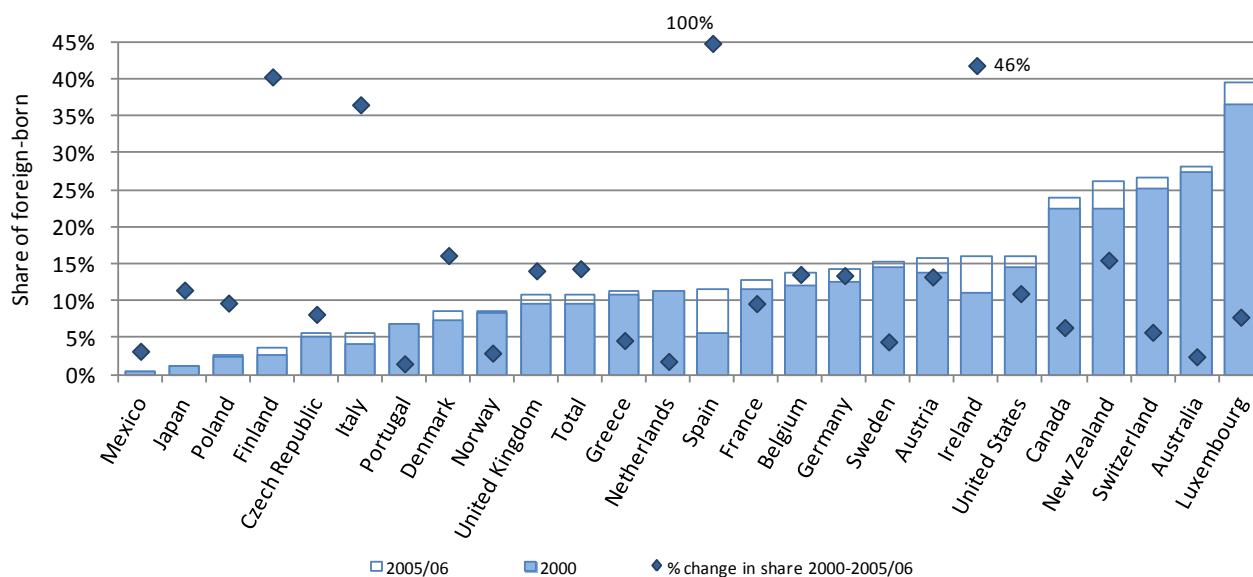
8. Recent immigrants (defined as the foreign-born with a residency of less than five years) make up a fourth of all immigrants in the OECD, but almost 70% of the immigrant population in Spain, 50% in Ireland and around one third in New Zealand and Finland. In Germany, the Netherlands and France, the share of recent immigrants is the lowest (below 15%), reflecting the lower migration flows in these countries over the period covered compared with previous periods (see Table A.4 for further details on immigrant populations in OECD countries by duration of stay).

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<sup>5</sup> DIOC 2005/06 covers 27 OECD destination countries, but at the time this document was prepared data on two countries (Chile and Israel) were not yet available. Therefore, only 25 OECD countries are taken into account in the analyses of this paper. For comparability reasons, only these 25 countries are kept in DIOC 2000 for all analyses conducted in this document (see Box 1 for more detail on methodological issues of DIOC 2005/06, Annex A.1 for comparability issues between DIOC 2000 and DIOC 2005/06 and Table A.2 for information on data sources and variables included in the database).

<sup>6</sup> This figure includes an increase of 2.2 million foreign-born in Germany between 2000 and 2005/06, of which at least 1 million are due to a decrease in the number of people with “unknown place of birth”.

**Chart 2: Share of immigrants in OECD countries, share of immigrants and growth rate, population aged 15 and over, 2000 and 2005/06**



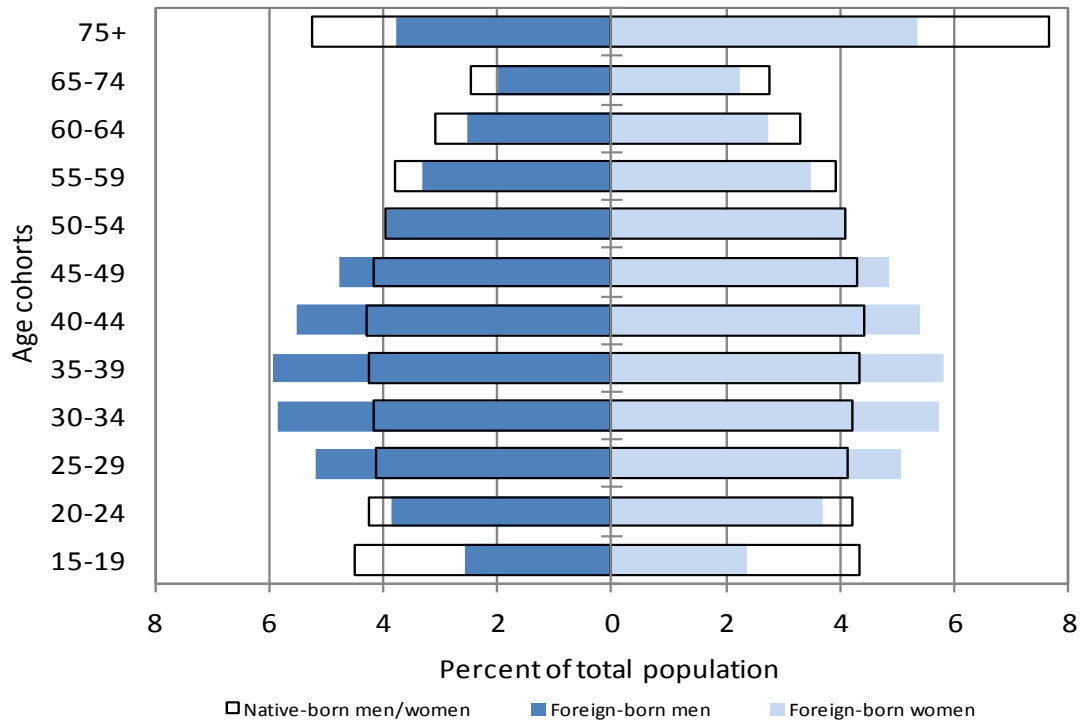
Source: DIOC 2000 and DIOC 2005/06

9. On average in OECD countries, 75% of all immigrants aged 15 and over are aged between 15 and 64, compared with 68% of their native-born counterparts (Chart 3). In general, immigrants tend to be underrepresented in younger age groups (15-24) and among people aged 65 and over, but they are overrepresented among the prime-age working population. More than half of the total increase in the migrant population between 2000 and 2005/06 is attributable to migrants aged 25 to 49. These are the age groups where employment rates are the highest.

10. Nonetheless, immigrant populations are also ageing in some countries. In Poland, migrants aged 65 and above accounted for 62% of all migrants in 2005/06 (57% in 2000). This age group accounts for 20% of all migrants in the Czech Republic, France, Australia and Austria. Increases in the share of older migrants are also recorded in Sweden, Switzerland, Australia and the United States.

11. In contrast, young immigrants (persons aged 15-24 years) are overrepresented in several OECD countries, notably in Mexico where they represent 26% of all migrants. This could be due to “return migration” from the United States of Mexican descendants. Finland, Japan and Ireland also recorded relatively high percentages of young migrants, close to 19%.

**Chart 3: Age structure of the population aged 15 and over in OECD countries by gender and place of birth, 2005/06**



Source: DIOC 2005/06

Table 1: Main characteristics of the foreign-born population aged 15 and over, by country of residence 2005/06 and 2000

Country of residence		2005/06									2000								
		Total Population 15+ (thousands)	Foreign-born population 15+ (thousands)				Characteristics of the foreign-born				Total Population 15+ (thousands)	Foreign-born population 15+ (thousands)				Characteristics of the foreign-born			
			Total	From OECD countries	Unknown place of birth	Share of foreign-born (%)	Women (%)	Young persons aged 15-24 (%)	Older persons aged 65+ (%)	Duration of stay 0-5 years (%)		Total	From OECD countries	Unknown place of birth	Share of foreign-born (%)	Women (%)	Young persons aged 15-24 (%)	Older persons aged 65+ (%)	Duration of stay 0-5 years (%)
AUS	Australia	15,918	4,127	2,298	1208	28.1	51.2	10.1	20.0	15.5	14,857	3,860	2,280	745	27.4	50.6	10.0	18.7	13.6
AUT	Austria	6,984	1,095	539	-	15.7	53.3	12.9	12.7	18.6	6,679	924	484	1	13.8	52.1	11.7	15.1	8.7
BEL	Belgium	8,627	1,177	714	3	13.7	52.5	9.5	16.9	17.5	8,492	1,019	680	1	12.0	51.9	10.0	16.4	18.6
CAN	Canada	25,664	6,125	2,444	-	23.9	52.1	10.3	20.0	15.2	23,901	5,355	2,426	-	22.4	51.9	10.0	19.4	14.8
CHE	Switzerland	6,183	1,642	1,070	3	26.6	52.1	10.5	14.2	23.7	6,043	1,454	921	251	25.1	52.2	11.9	12.1	23.1
CZE	Czech Republic	9,026	508	308	-	5.6	51.3	8.6	22.4	...	8,572	437	338	172	5.2	54.5	6.2	27.9	9.4
DEU	Germany	71,431	10,076	4,550	229	14.2	50.3	12.4	12.0	10.2	68,114	7,832	3,283	5272	12.5	49.7	11.7	12.3	3.6
DNK	Denmark	4,433	380	183	-	8.6	51.5	17.3	8.5	27.3	4,359	319	163	23	7.4	51.4	17.7	8.1	23.1
ESP	Spain	37,140	4,255	926	-	11.5	50.8	16.1	5.5	67.8	34,848	1,915	633	3	5.5	49.7	16.8	8.1	40.4
FIN	Finland	4,365	162	69	4	3.7	50.4	19.4	6.2	30.9	4,245	112	52	4	2.7	50.4	23.5	6.7	12.6
FRA	France	50,128	6,410	2,346	-	12.8	51.1	8.6	20.0	13.5	48,068	5,600	2,242	-	11.7	50.5	7.9	20.3	8.1
GBR	United Kingdom	49,418	5,329	1,613	11	10.8	51.4	13.8	12.8	29.7	47,684	4,503	1,756	-	9.4	53.3	13.4	15.6	17.0
GRC	Greece	9,517	1,075	177	-	11.3	51.7	17.7	6.0	19.3	9,273	1,000	284	1	10.8	49.9	20.4	11.0	53.8
IRL	Ireland	3,312	529	383	-	16.0	47.9	18.8	5.3	50.6	3,035	333	268	-	11.0	50.4	15.6	7.0	41.0
ITA	Italy	49,788	2,813	856	1	5.6	53.7	13.1	7.1	27.1	48,893	2,021	821	-	4.1	54.4	14.0	9.7	37.8
JPN	Japan	109,764	1,292	77	117	1.2	55.3	18.4	7.1	...	108,225	1,142	67	15	1.1	53.2	17.9	6.7	...
LUX	Luxembourg	372	147	129	-	39.5	50.3	9.3	10.1	18.3	356	130	111	2	36.6	50.6	11.2	10.0	40.7
MEX	Mexico	72,534	289	194	-	0.4	48.2	26.4	14.2	...	62,843	241	162	174	0.4	49.5	26.4	15.3	...
NLD	Netherlands	13,118	1,486	512	82	11.4	51.6	11.7	9.1	11.1	12,733	1,420	411	40	11.2	51.4	12.5	10.5	9.7
NOR	Norway	3,696	318	146	-	8.6	51.3	16.3	7.0	29.7	3,667	306	145	-	8.3	51.1	16.5	7.2	30.2
NZL	New Zealand	3,160	784	387	152	26.1	51.8	16.3	16.1	32.0	2,890	624	343	120	22.5	51.9	14.5	17.5	23.5
POL	Poland	31,959	841	195	-	2.6	59.3	2.5	61.9	5.0	31,288	738	149	516	2.4	59.9	1.6	56.8	...
PRT	Portugal	8,879	608	146	-	6.8	52.4	15.6	5.6	21.6	8,700	586	151	-	6.7	50.9	19.5	6.6	13.4
SWE	Sweden	7,557	1,093	550	-	14.5	52.1	12.5	16.1*	21.9	6,464	934	481	-	14.4	51.4	14.1	9.1*	17.3
USA	United States	240,126	38,564	16,692	-	16.1	50.0	12.6	12.5	16.5	217,165	31,390	14,930	-	14.5	50.4	14.9	11.5	20.1
<b>Total</b>		843,098.4	91,124	37,881	1809	10.8	50.9	12.4	13.7	19.2	791,392	74,197	33,582	7341	9.5	51.0	13.2	13.8	17.4

Note: "-" not significant; "..." not available; \* for Sweden, only persons aged 15-74 are included.

Source: DIOC 2000 and 2005/06

**Box 1: The Database of Immigrants in OECD Countries (DIOC) 2005/06***Data sources and methodology*

The Database on Immigrants in OECD Countries (DIOC) 2005/06 is an update of DIOC 2000. Data are based on population register and census data around 2005/06, except for 14 OECD countries where only labour force survey data were available<sup>7</sup>. Labour force survey data were averaged over a three-year period to improve the reliability of population estimates. DIOC 2005/06 contains information on over 200 origin countries, by educational attainment level, age, sex, labour force status and occupation for 25 OECD destination countries (see Table A.2 in the Annex, which provides information on the variables and sources in DIOC 2005/06). For other OECD countries, no adequate data were available to update the database for 2005/06, but the 2010 round of population censuses will include this information for the year 2010.

The main issue in terms of comparability between DIOC 2000 and DIOC 2005/06 derives from the fact that for 12 out of 25 countries, hosting about 19% of migrants in the OECD, the data source differs between 2000 and 2005/06<sup>8</sup>. As mentioned in Annex A.1, comparisons between labour force survey and census data around 2000 show some discrepancies in estimates of the foreign-born population. The number of migrants tends to be underestimated in the former data source compared with the latter. The gap is particularly large in some southern European countries, where migration is relatively recent and increased rapidly in the early 2000s. Since 2000, however, the reliability and coverage of labour force surveys for immigrants have greatly improved.

To address this potential underestimation problem, data on the total foreign-born population based on labour force surveys were adjusted to the more precise OECD estimates of the stocks of foreign-born persons for the year 2005/06 (International Migration Outlook 2010).

*Special cases for adjustments*

For three countries, further adjustments had to be made (additional technical information is included in the metadata). The 2005 Japanese Census did not survey educational attainment. Missing data were therefore imputed by sex and country of nationality from the 2000 Census, based on different sets of hypotheses for nationals and foreigners in order to account for population ageing and new migration flows. It is assumed that foreigners aged 15-44 in 2005 have the same educational distribution as migrants of the same age group in 2000. For foreigners aged 45 and above, the educational distribution of persons aged five years younger in 2000 was applied. For nationals aged 15-29, the educational attainment distribution is assumed to be the same as in 2000. For nationals aged 30 and above, the educational distribution of persons aged five years younger in 2000 was applied.

Where the migrant population is small, as for example in a number of central and eastern European countries, national labour force surveys tend to underestimate the foreign-born population, and the distribution of migrants by country of birth might not be accurate. In the case of the Czech Republic, register data are available to estimate the total number of foreigners, but these data contain limited information on individual characteristics. Data from the labour force survey are therefore combined with the register data to estimate the relevant information.

In the labour force survey of the United Kingdom, all persons holding a foreign degree are classified in the educational attainment category “other qualification”. The National Statistics Office recodes them usually in the “ISCED 3/4” category, which is not accurate. Therefore, in these cases information on the age when the highest diploma was obtained is used to impute the education level.

*Data limitations*

Comparisons between 2000 and 2005/06 data should be made with some caution, not only because different data sources are used for some countries, but also because of changes in definitions or variation in the number of “unknown” for certain variables. For example, in the case of Germany, the 2000 data includes about 5.2 million persons for whom the place of birth is unknown. In 2005/06, this number decreased to 228 000, because of significant improvements in the

<sup>7</sup> Austria, Belgium, Czech Republic, Germany, Greece, Hungary, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Spain, Switzerland, United Kingdom. Annex A.1 describes methodological issues in terms of comparability and reliability of DIOC 2005/06 with DIOC 2000, due to the different data sources in the DIOC databases.

<sup>8</sup> For Germany and the Netherlands, DIOC 2000 data already relied on national labour force survey data.



German Microcensus. Important variations in the number of persons with unknown place of birth are also observed for Australia, Poland and Switzerland.

Changes in definitions can be due to changes in the mappings between national and international classifications or due to changes in questionnaires. The most common changes seem to occur with regard to the educational attainment variable. For instance in Norway, the classification of educational attainment for 2005 takes into account years of schooling and class level to determine the attainment of upper secondary education, whereas in DIOC 2000 all persons who had attained some upper secondary education were classified as having attained upper secondary education. Limitations in terms of comparability of education between 2000 and 2005/06 also apply to the United Kingdom, Australia and Finland.

#### *Data files*

The use of labour force survey data based on a representative sample of the population requires applying publication thresholds to ensure the reliability of the estimates. This means that in many cases cross-tabulated data by country of origin and destination broken down by different variables (e.g. age, education, etc.) cannot be released. In this case, data by destination country have to be aggregated by region of origin. This obviously limits the capacity to analyse data by country of origin, which is a key objective of DIOC. In order to overcome this problem, a second data file has been compiled providing the full information by country of origin, but which does not identify countries of residence.

The Database on Immigrants in OECD Countries (DIOC) for the year 2005/06 is therefore composed of two datasets. In the first one, all OECD destination countries are identified, but origin countries may be aggregated to regions. In the second dataset, all countries of birth are identified, but the data are pooled to one destination, the OECD area.

These data can be downloaded free of charge at [www.oecd.org/migration/dioc](http://www.oecd.org/migration/dioc)

*...and to some extent diversifying*

12. As mentioned before, migration to the OECD has increased between 2000 and 2005/06, but not all countries of origin were equally involved. Are recent migration flows concentrated in traditional migration corridors or did they mainly come from new emigration countries?

13. The 15 most important countries of origin accounted for 51% of overall recent migration flows (i.e. people with a residence of less than 5 years). In addition to Mexico (1.9 million), these countries include large emerging economies such as India (780 000 recent immigrants), China (650 000), Russia (380 000) and Brazil (280 000) (see Box 2 for more detailed information on migration from large emerging economies to the OECD). The numbers of recent migrants originating from Ecuador (560 000), Morocco (450 000) and the Philippines (410 000) are also particularly important. Furthermore, 420 000 persons born in the United Kingdom and 300 000 born in Germany left their country of birth to live in another OECD country between 2000 and 2005/06 (see Table A.5 for characteristics of emigrants from OECD countries and Table A.6 for main emigrant populations from non-OECD countries by main countries of destination).

14. In 2005/06, each of the following 50 main countries of origin accounted for less than 1% of overall recent migration flows (35% altogether), although the numbers involved are not negligible either (between 50 000 and 200 000 people each). This illustrates that while immigration to the OECD still mainly comes from a small number of origin countries, many more countries provide immigrants for OECD countries.

15. The Latin American migrant population increased by more than 30% between 2000 and 2005/06. In absolute terms, the population of Latin American migrants increased more than that of Asian migrants (+5.9 million versus 4.4 million). This is not only due to migration from Mexico, as migration from Andean countries to Spain and from Brazil to the United States, Portugal and Japan also increased significantly.

16. Between 2000 and 2005/06, the population of African migrants in the OECD increased by more than 2 million. About half of this increase is due to people born in North Africa, notably in Morocco (+600 000). The number of African-born migrants increased most notably in the United States (+490 000; 10% from North Africa), France (+480 000; 53% from North Africa) and to a lesser extent in Spain (+360 000; 76% from North Africa).

17. Intra-OECD migration remains important. In 2005/06, almost 38 million migrants, or 41% of the total migrant population in the OECD, came from another OECD country. Between 2000 and 2005/06, this number increased by 4.3 million, which corresponds to a 13% growth rate, or one-fourth of the overall increase in the migrant population. This result is largely due to an increase in the number of Mexican-born in the United States (+2.4 million; +29%), but also to an increase in intra-EU migration that took place in the context of the EU enlargement since 2004. For example, the number of Polish-born migrants increased by 700 000 (+33%)<sup>9</sup> and that of Slovak-born and Czech-born by 79 000 (+12%). The number of migrants originating from Romania increased by 740 000 (+88%), while the number of migrants coming from Bulgaria doubled (+180 000, +119%). In contrast, the number of Irish emigrants decreased significantly from 2000 to 2005/06 (-153 000). This seems to be mainly due to return migration from the United Kingdom, where the number of Irish migrants decreased by around 149 000.

**Table 2: Main characteristics of emigrant populations aged 15 and over in the OECD, by country and region of origin, 2005/06 and 2000**

Region or country of origin	Population 15+ (thousands)		Women (%)		Young persons aged 15-24 (%)		Older persons aged 65+ (%)		Recent migrants (%)	
	2005/06	2000	2005/06	2000	2005/06	2000	2005/06	2000	2005/06	2000
<b>Africa</b>	<b>8,947</b>	<b>6,847</b>	<b>46.8</b>	<b>46.5</b>	<b>11.9</b>	<b>11.3</b>	<b>10.3</b>	<b>9.9</b>	<b>22.7</b>	<b>17.7</b>
Morocco	2,106	1,505	44.6	44.0	12.4	13.6	8.0	6.5	25.3	18.3
Other North Africa	2,403	2,151	45.8	46.0	6.1	4.9	22.0	20.6	14.1	9.5
Sub-Saharan Africa	4,437	3,191	48.4	48.0	14.9	14.5	5.0	4.4	25.4	22.2
<b>Asia</b>	<b>20,425</b>	<b>16,062</b>	<b>52.3</b>	<b>51.9</b>	<b>13.1</b>	<b>14.1</b>	<b>10.6</b>	<b>9.5</b>	<b>20.4</b>	<b>19.8</b>
China	2,723	2,063	54.0	52.8	15.8	11.8	14.4	14.9	28.3	26.4
India	2,759	1,951	47.0	47.8	9.8	10.7	11.0	10.4	28.8	26.5
Philippines	2,491	1,930	61.3	61.4	9.5	11.3	12.2	10.2	17.6	15.5
Other Asia	12,452	10,118	51.3	50.7	13.9	15.8	9.4	8.0	17.5	18.0
<b>South America and the Caribbean</b>	<b>25,030</b>	<b>19,017</b>	<b>49.0</b>	<b>49.3</b>	<b>14.6</b>	<b>17.9</b>	<b>8.6</b>	<b>7.5</b>	<b>21.4</b>	<b>21.9</b>
Mexico	10,780	8,328	44.2	44.4	16.6	21.9	5.7	4.6	18.2	24.8
Other South America and the Caribbean	14,249	10,689	52.7	53.2	13.1	14.8	10.8	9.8	24.0	19.6
<b>North America</b>	<b>2,076</b>	<b>1,914</b>	<b>53.2</b>	<b>54.3</b>	<b>13.2</b>	<b>12.6</b>	<b>18.6</b>	<b>20.9</b>	<b>16.5</b>	<b>17.2</b>
<b>Oceania</b>	<b>1,251</b>	<b>1,103</b>	<b>50.7</b>	<b>51.3</b>	<b>13.4</b>	<b>15.7</b>	<b>7.8</b>	<b>7.2</b>	<b>21.3</b>	<b>23.4</b>
<b>Europe</b>	<b>33,362</b>	<b>27,836</b>	<b>52.4</b>	<b>52.6</b>	<b>10.3</b>	<b>9.2</b>	<b>19.9</b>	<b>20.8</b>	<b>15.8</b>	<b>12.2</b>
EU 27	22,096	19,370	52.7	53.2	8.3	7.5	22.7	23.1	16.5	10.0
Turkey	8,663	6,381	53.2	52.3	15.3	14.1	7.8	8.8	9.7	5.5
Other Europe	2,603	2,085	47.5	47.6	10.4	10.1	16.3	17.8	16.0	20.6
Unknown	86	1,418	53.3	50.2	16.4	24.2	21.5	22.0	20.4	16.9
<b>Total</b>	<b>91,176</b>	<b>74,197</b>	<b>50.9</b>	<b>51.0</b>	<b>12.4</b>	<b>13.2</b>	<b>13.6</b>	<b>13.8</b>	<b>19.2</b>	<b>17.4</b>
<b>OECD countries</b>	<b>37,785</b>	<b>33,550</b>	<b>49.9</b>	<b>51.0</b>	<b>11.0</b>	<b>12.1</b>	<b>16.3</b>	<b>16.3</b>	<b>15.5</b>	<b>14.9</b>

Source: DIOC 2000 and DIOC 2005/06

<sup>9</sup> Almost half of them moved to the United Kingdom.

**Box 2: Migration from large emerging economies (Brazil, China, India, Indonesia and South Africa) to the OECD**

The Database on Immigrants in OECD Countries (DIOC 2005/06) allows investigation of migration from large emerging economies to the OECD. The number of persons born in these countries and living in the OECD exceeded 7.1 million in 2005/06 (Table 3). Around one third of these migrants were residents for less than 5 years. The largest communities came from India and China, each accounting for more than 2.7 million migrants. Main destination countries are the United States and Canada, which received 59% of migrants originating from the five countries considered.

**Table 3: Emigrants aged 15 and over from large emerging economies in the OECD, by destination, 2005/06**

Country of origin	Emigrant population (thousands)	Recent immigrants (%)	Main destinations (%)			
			Europe	United States and Canada	Japan	Australia and New Zealand
Brazil	857	44.2	36.1	41.6	21.0	1.0
China	2,723	28.3	14.2	62.8	12.1	10.9
India	2,759	28.7	24.6	68.8	0.3	6.3
Indonesia	336	14.1	51.0	28.5	5.2	15.4
South Africa	465	26.9	47.1	25.8	0.1	26.9
<b>Total</b>	<b>7,140</b>	<b>29.3</b>	<b>24.7</b>	<b>58.6</b>	<b>7.5</b>	<b>9.2</b>

Source: DIOC 2000 and DIOC 2005/06

Migration from large emerging economies to the OECD is characterised by a growing share of migrant women, especially from India and China (around 55% in 2005/06), and a very high share of high-educated migrants (Table 4). On average, more than half of the migrants born in India or in South Africa who live in the OECD hold a university degree. This figure is also above 40% for migrants from China and Indonesia, but much lower for Brazilian migrants (28%).

All countries considered, except South Africa, have large populations and therefore relatively small total emigration rates. Less than half of a percent of the population lived in the OECD in 2005/06, compared with almost 2% on average for all countries of origin.

As for the emigration rates of the highly educated, South Africa stands out, with around 10% of its high-educated population living abroad, whereas from the other countries under review, at most 4% of the highly educated live in the OECD (Table 4).

**Table 4: Characteristics of emigrants aged 15 and over from large emerging economies in the OECD, 2005/06**

Country of origin	Women (%)	Young persons aged 15-24 (%)	Older persons aged 65+ (%)	Low-educated (%)	High-educated (%)	Emigration rates (%)	
						Total	High-educated
Brazil	53.0	18.4	3.4	29.9	27.9	0.6	2.6
China	54.0	15.8	14.4	26.0	44.7	0.3	1.7
India	47.0	9.8	11.0	16.4	63.5	0.4	4.2
Indonesia	54.6	10.9	24.7	17.9	41.8	0.2	3.7
South Africa	51.3	16.3	9.1	11.4	53.9	1.4	9.7
<b>Total</b>	<b>51.0</b>	<b>13.6</b>	<b>11.9</b>	<b>21.5</b>	<b>50.4</b>	<b>0.3</b>	<b>2.8</b>

Note: Excluding persons with unknown education

Source: DIOC 2000, DIOC 2005/06 and Barro and Lee (2010)

## 1.2 *Labour market outcomes of migrants*

### *Labour market outcomes of immigrants are improving...*

18. Although labour migration is often not the main category of entry, the possibility to work in the destination country is often an important driver for international migration. It is also a precondition for successful integration in the destination country. What is the situation of different immigrant groups in OECD labour markets? How did the situation evolve between 2000 and 2005/06 both in absolute terms and in relative terms compared with the natives? Are high-educated migrants faring systematically better than their low-educated counterparts are? These questions will be addressed in this section.

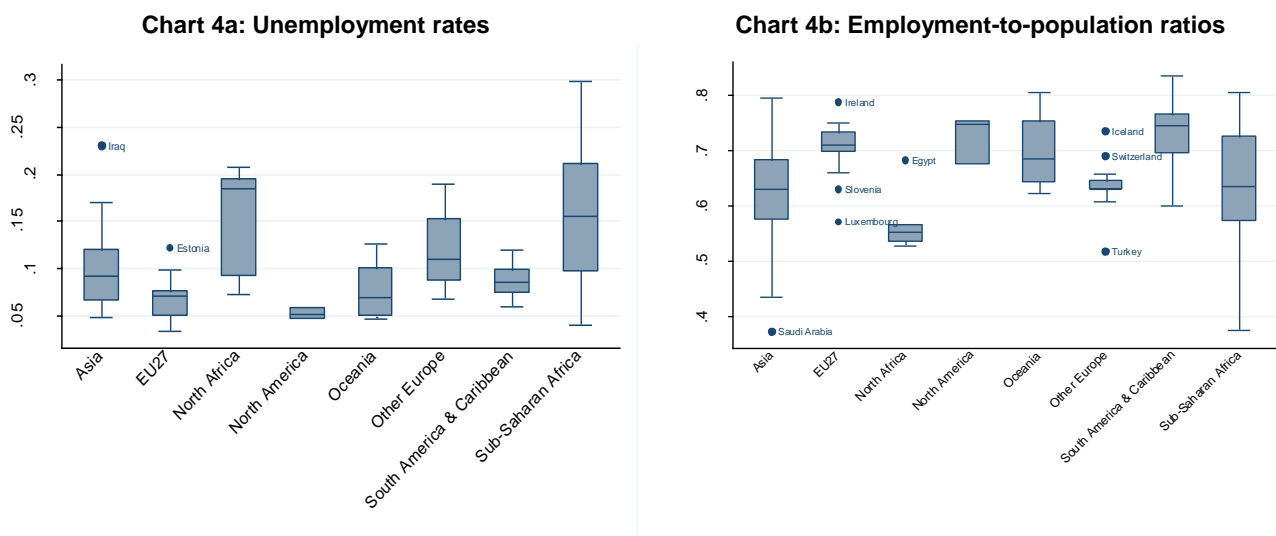
19. From 2000 to 2005/06, labour market outcomes of immigrants improved both in terms of employment-to-population ratios<sup>10</sup> and of unemployment rates. On average in 2005/06, about 68% of the foreign-born aged 15 to 64 were employed and 9% of the migrant workforce was unemployed (compared with 69% and 7%, respectively for natives). In all OECD countries under review, the foreign-born had higher employment-to-population ratios in 2005/06 than they had in 2000, except in Switzerland, Austria, Belgium and Luxembourg where immigrants' employment rates decreased slightly. The main improvements were observed in Finland (+17 percentage points), Spain (+12 percentage points) and the United States (+8 percentage points). This positive trend came to a halt with the 2008 financial and economic crisis (OECD, 2010).

20. Labour market outcomes of immigrants vary significantly according to the region and country of origin. Chart 4 portrays a large dispersion of labour market outcomes among different countries of origin. On average, the highest unemployment rates for the foreign-born population aged 15 to 64 are observed for North African origin countries (16%) and Sub-Saharan African countries (16%). The lowest unemployment rates are registered for North American migrants (5%), as well as for migrants from the EU27 (7%) and Oceania (8%). The most heterogeneous region in this respect is Sub-Saharan Africa. Migrants from South Africa (4%), Tanzania and Mozambique (6% each) fare relatively well in OECD countries, but migrants from Comoros (30%), Rwanda (28%) and Democratic Republic of the Congo (25%) face particularly high unemployment rates.

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<sup>10</sup> The terms "employment-to-population ratio" and "employment rate" are used synonymously in this document. It represents persons in employment as a percentage of the total working-age population.

**Chart 4: Dispersion of labour market outcomes of foreign-born 15-64 by regions of origin in the OECD, 2005/06**

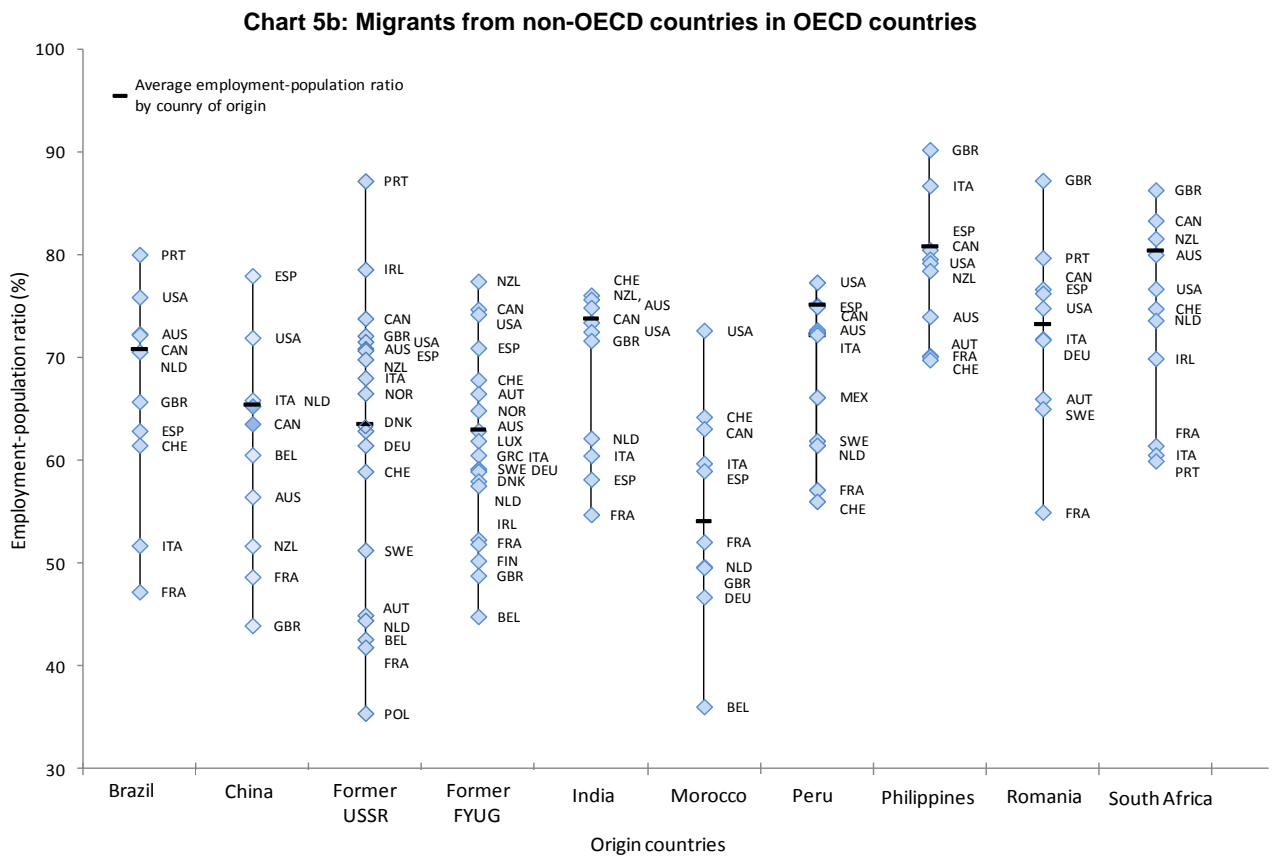
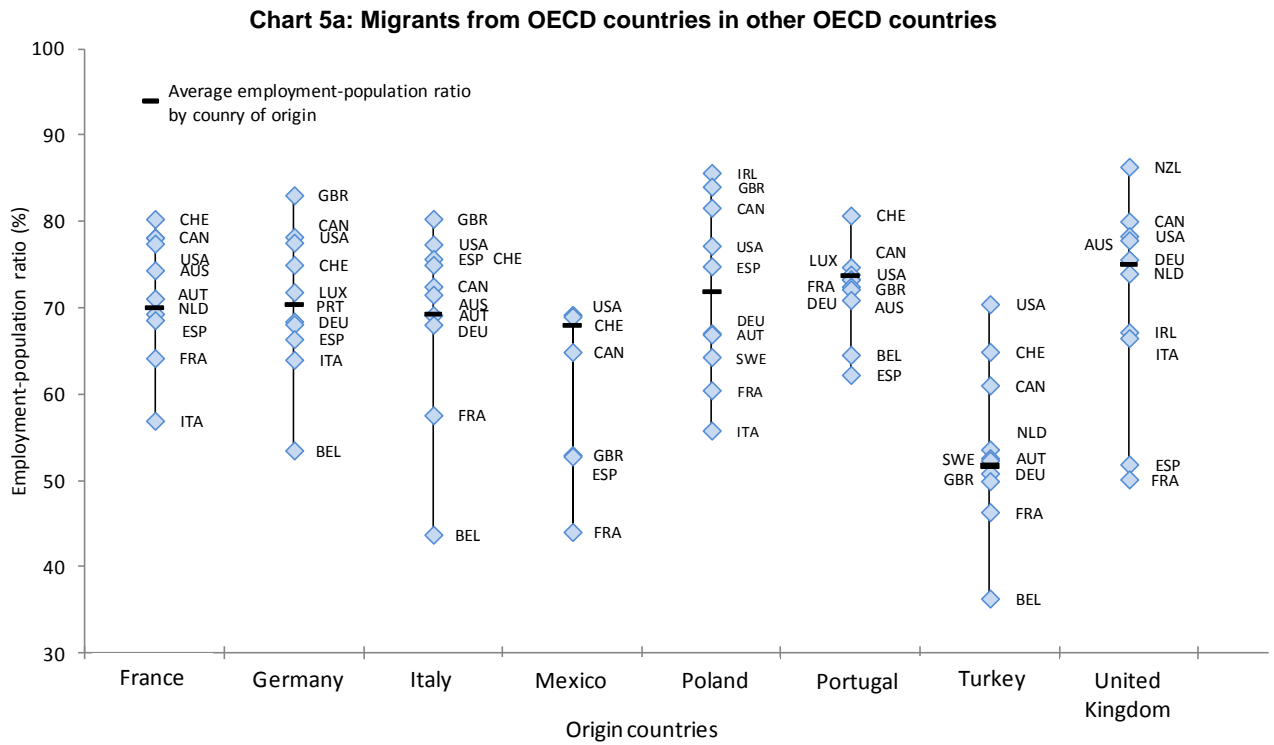


Note: Excluding persons with unknown place of birth. The box plot indicates several distribution parameters for a variable. The lower and upper boundaries of the box represent the first quartile (25<sup>th</sup> percentile) and third quartile (75<sup>th</sup> percentile) of the distribution. The line in the box represents the median (50<sup>th</sup> percentile). The whiskers indicate the maximum and minimum value of the distribution excluding outliers. Outliers are identified by black dots in the box plot. They indicate data being above or below 1.5 times the inter quartile range (IQR) of the lower quartile and the upper quartile.  
 Source: DIOC 2005/06

21. Similar patterns are observed for the employment rates. In 2005/06, on average in the OECD, migrants aged 15 to 64 originating from North Africa had the lowest employment rate (57%), whereas persons born in the EU-27 (70%) and in North America (73%) had much better labour market outcomes.

22. Chart 5 gives more information on differences in employment rates by specific destination and origin countries. In general, all migrant groups tend to have higher employment outcomes in the United States, Canada and in Spain than elsewhere in the OECD. In contrast, outcomes tend to be lower in Belgium and France. Immigrants of Turkish and of Moroccan origin tend to have lower employment rates, but this is not true in all countries of residence (e.g. Canada, Switzerland and United States). Filipino workers had generally relatively high employment rates in all countries, although there is a more than 20 percentage point difference between the highest employment rate recorded in the United Kingdom (90%) and the lowest figure observed in Switzerland (70%). These differences reflect variations in the general employment situation as well as differences in selection and migration history.

**Chart 5: Employment rates of foreign-born aged 15-64 by selected countries of origin and by destination country in 2005/06**



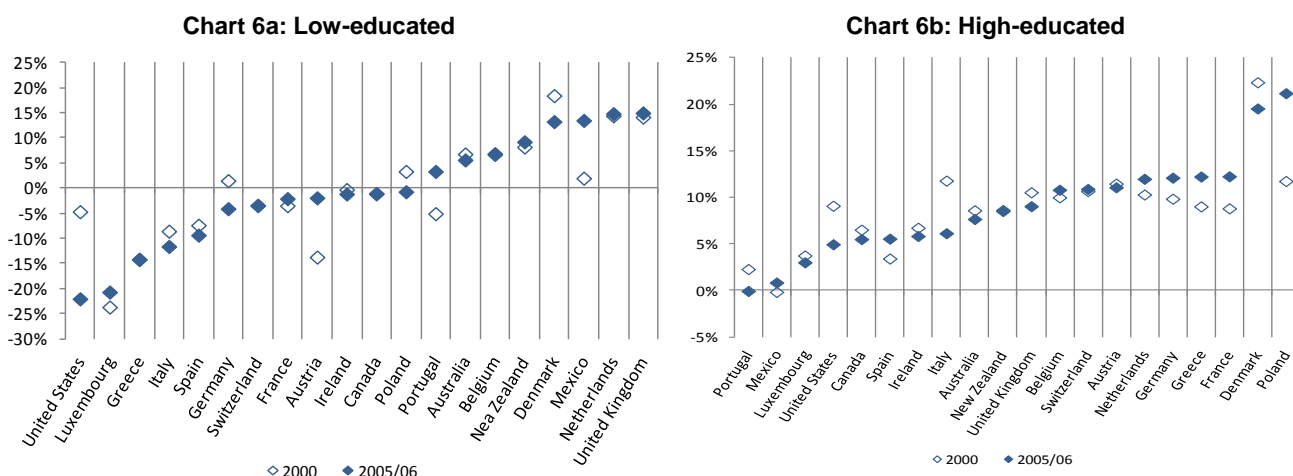
Note: Excluding persons with unknown place of birth.  
Source: DIOC 2005/06

...but the gap with native-born remains, notably for the highly educated

23. Despite improvements in labour market outcomes of migrants, large gaps persist between the foreign-born and the native-born, notably in Europe. In all OECD countries, the gaps are largest for high-educated immigrants, especially in France, Greece, Germany and the Netherlands. In all of these countries, the high-educated foreign-born have employment rates that are more than 10 percentage points lower than those of the high-educated native-born (see Chart 6b).

24. In more than half of the OECD countries for which data are available, low-educated foreign-born fared better than their native-born counterparts (see Chart 6a). Between 2000 and 2005/06 the situation did not change much, except in a few countries. In Germany and the United States, the advantage of low-educated foreign-born increased since 2000 compared with the native-born<sup>11</sup>. In contrast, in Austria the employment rate of low-educated immigrants decreased and is now comparable to that of the native-born. In general, the differences in employment rates are more pronounced for women than for men (see Section 3 for more detailed information on gender differences).

**Chart 6: Percentage point differences of employment-to-population ratios between the native-born and foreign-born aged 15-64 in selected OECD countries, 2005/06 and 2000**



Source: DIOC 2000 and DIOC 2005/06

25. The fact that high-educated migrants face more difficulties in the labour market than their low-educated counterparts compared with natives is well documented (e.g. OECD 2008). It can be explained by a variety of factors, including complementarity effects between education and host-country language skills, differences in the quality of education, notably for migrants coming from low-income countries, obstacles in terms of transferability of diplomas, as well as the lack of social capital or discrimination. All these factors could also contribute to explain the high propensity among high-educated immigrants to overqualification (i.e. holding a job below one's level of formal education).

26. The distribution of foreign-born employment by occupation, as illustrated in Table 5, shows important differences by region of origin. Asian migrants tend to be concentrated in professional occupations (except Filipinos who are also in semi-skilled occupations), whereas North African migrants as well as Turkish-born and Mexican-born workers are overrepresented in low-skilled and elementary occupations.

<sup>11</sup> Data for the United States are averaged over the period 2005-2009. Therefore, the negative effects of the financial crises on employment-to-population ratios in the years 2008/2009 are included.

**Table 5: Employed foreign-born population aged 15 and over in the OECD by occupation and origin, 2005/06**  
Percentages

	Africa	Sub-Saharan Africa	Morocco	Other North Africa	Asia	China	India	Philippines	Other Asia
Legislators, senior officials and managers	8.2	8.4	6.4	9.4	<b>10.2</b>	<b>11.1</b>	<b>11.7</b>	5.4	<b>10.8</b>
Professionals	13.5	<b>15.1</b>	8.0	<b>14.9</b>	<b>18.5</b>	<b>24.6</b>	<b>29.9</b>	10.1	<b>16.2</b>
Technicians and associate professionals	14.6	17.1	8.1	14.6	15.8	11.8	16.2	<b>25.8</b>	13.8
Clerks	9.1	10.3	5.9	9.3	10.5	9.0	9.0	<b>14.8</b>	10.2
Service workers and shop and market sales workers	13.1	13.3	12.5	13.4	<b>16.9</b>	<b>17.5</b>	11.4	<b>15.1</b>	<b>18.9</b>
Skilled agricultural and fishery workers	2.3	<b>2.6</b>	2.5	1.1	0.9	0.5	1.5	1.3	0.7
Craft and related trades workers	<b>11.4</b>	8.2	<b>17.9</b>	<b>13.3</b>	6.0	4.7	3.6	4.8	7.3
Plant and machine operators and assemblers	<b>10.1</b>	9.4	<b>12.2</b>	<b>10.1</b>	<b>10.7</b>	8.0	<b>9.6</b>	9.0	<b>11.9</b>
Elementary occupations	<b>17.6</b>	<b>15.6</b>	<b>26.6</b>	<b>14.0</b>	<b>10.6</b>	<b>12.8</b>	<b>7.1</b>	<b>13.6</b>	<b>10.3</b>
Total (thousands)	4,726	2,695	1,010	1,021	10,698	1,257	1,737	1,599	6,105

	Europe	EU27	Turkey	Other Europe	North America	Oceania	South America and the Caribbean	Mexico	Other South American countries
Legislators, senior officials and managers	8.8	<b>10.5</b>	6.1	4.5	<b>15.8</b>	<b>13.2</b>	4.4	3.1	5.4
Professionals	13.1	<b>15.2</b>	4.6	9.3	<b>25.7</b>	<b>16.1</b>	5.8	2.8	8.1
Technicians and associate professionals	13.3	14.1	6.6	12.7	<b>20.7</b>	15.1	8.5	3.7	12.3
Clerks	9.0	9.8	5.9	7.5	10.8	13.5	8.6	6.3	10.5
Service workers and shop and market sales workers	13.7	13.5	13.6	<b>14.3</b>	11.4	13.0	12.1	8.3	<b>15.1</b>
Skilled agricultural and fishery workers	1.6	1.9	1.1	1.1	1.0	2.2	<b>3.0</b>	<b>5.6</b>	1.0
Craft and related trades workers	<b>15.1</b>	<b>13.3</b>	<b>21.2</b>	<b>18.7</b>	5.2	10.1	<b>17.6</b>	<b>22.7</b>	<b>13.7</b>
Plant and machine operators and assemblers	<b>10.6</b>	8.9	<b>18.5</b>	<b>13.1</b>	4.8	8.1	<b>17.8</b>	<b>23.3</b>	<b>13.5</b>
Elementary occupations	<b>14.8</b>	<b>12.7</b>	<b>22.3</b>	<b>18.9</b>	4.6	<b>8.7</b>	<b>22.1</b>	<b>24.2</b>	<b>20.4</b>
Total (thousands)	15,633	10,884	1,156	3,593	1,017	797	15,706	6,936	8,770

Note: Figures in bold indicate occupations in which the foreign-born are over-represented compared to the native-born population.

Excluding the destination countries Mexico and Japan due to different occupational classifications.

Source: DIOC 2005/06

### 1.3 Increasing mismatch between educational background and occupation of migrants

27. In many OECD countries, prior to the recent economic crisis, labour shortages and recruitment difficulties were increasing, notably for low-skilled occupations in agriculture, construction, industrial cleaning and domestic services. Some countries have registered significant inflows of labour migrants in these occupations, but foreign workers who took the jobs were not necessarily always low-educated giving rise to the phenomenon of skill mismatch represented as “overqualification”.

28. High-educated migrant workers tend to be more exposed to this problem than their native-born counterparts are. On average in the OECD, 30% of immigrants holding a university degree were working in intermediate or low-skilled jobs compared with 21% for the natives. The figure increased by more than 4 percentage points for the foreign-born between 2000 and 2005/06 and the gap with the natives widened.

29. Comparing levels of overqualification should be done with some caution as these may be influenced by differences in national classifications of education systems or occupations. Nonetheless, mismatches seem to be more of a problem for immigrants in southern European countries and in Ireland, countries where immigration flows are relatively recent. The same is true for example for the United Kingdom, where the overqualification rate increased by more than 10 percentage points from 2000 to 2005/06, partly because of the importance of recent arrivals of high-educated workers from new EU members states in the context of the 2004 EU enlargement. The situation evolved in the opposite direction in Germany, where about a fourth of all high-educated employed migrant workers were employed in non-professional or elementary occupations, representing a 10 percentage point decline compared with 2000.

30. The highest share of overqualification is registered for migrants from middle-income (36%)<sup>12</sup> and low-income countries (30%, but 36% by excluding India), whereas the figure is much lower, but not negligible for high-income OECD countries (24%) (Table 6). Although migrants from the Philippines tend to have higher employment rates than other migrant groups, they seem to be more likely to be employed in an occupation that does not reflect their level of qualification. Nearly two thirds of Philippine-born migrants are

<sup>12</sup> The figure reaches 36% for lower-middle-income countries by excluding China.



women and more than half of them have a university degree, but they work often in domestic services as house cleaners or carers.

**Table 6: Overqualification of migrants aged 15 and over, by origin countries' income group<sup>13</sup>, 2000 and 2005/06, Weighted averages**

	2000	2005/06
High-income: OECD	21.4	23.9
High-income: non-OECD	21.6	22.6
Upper-middle-income	29.0	36.2
Lower-middle-income	27.8	34.7
Lower-middle-income (w ithout China)	28.9	36.2
Low -income	25.4	29.7
Low -income (w ithout India)	29.4	35.8
Foreign-born	25.8	30.0
Native-born	21.0	22.6

*Note: Overqualification is measured as the share of persons holding university degrees (ISCED 5 and ISCED 6) and working in intermediate or low-skilled jobs (ISCO 4 to ISCO 9)*

*The destination countries Mexico and Japan have been excluded due to a different occupational classification*

*Source: DIOC 2000 and DIOC 2005/06*

#### 1.4 Qualification of migrants

31. In 2005/06, there were about 25.7 million immigrants living in the OECD (25 countries) holding a university degree and among recent immigrants more than 5.2 million (32%) were highly educated. However, low-educated migrants still dominated in 2005/06 with about 32.4 million persons (31 million in 2000).

##### *Decreasing share of low-educated migrants...*

32. Overall, the share of low-educated migrants decreased from 2000 to 2005/06 by around 7 percentage points from 42% to 35%. In southern European countries, more than half of migrants do not have more than a primary degree. This is also observed in Finland, Belgium and France. In settlement countries (Australia, Canada, New Zealand), this percentage is much smaller, usually below 25%. In the United States, in 2005/06, about 33% of all migrants were low-educated, compared with more than 39% in 2000 (Table 7). However, in 2005/06, every second migrant living in the United States and born in South America and the Caribbean has been low-educated.

33. The persisting importance of low-skilled migration to OECD countries reflects partly the nature of labour needs, notably in low-wage occupations and so-called “3D (dirty, dangerous, difficult) jobs”. As mentioned above, agriculture, construction and domestic services are some of the sectors in which the share of low-educated migrant workers is persistently high or even increasing.

34. In many OECD countries, immigrants are overrepresented at both ends of the educational attainment scale, which implies that they tend to be underrepresented in intermediate education levels<sup>14</sup>. One reason for this is related to the nature of the demand for labour in OECD countries, but other factors also play an important role, such as the structure of education attainment among the population in origin countries and the lack of international transferability of non-tertiary diplomas, notably in the trades.

<sup>13</sup> Income groups are classified according to the World Bank classification of economies based on the 2005 GNI per capita: low income USD 955 or less, lower middle income USD 996 – USD 3 945, upper middle income USD 3 946 – USD 12 195 and high income USD 12 196 and more.

<sup>14</sup> This is not true, however, in southern European countries, or in Mexico, Ireland, the Netherlands, Australia and New Zealand.

Table 7: Educational attainment of native-born and foreign-born aged 15 and over, by destination countries, 2005/06

Country of residence	Native-born		Foreign-born																										
	Low - educated (%)	High - educated (%)	Total (thousands)	Low - educated (%)	High - educated (%)	Region of origin						Africa			Asia			Europe			North America			Oceania			South America and the Caribbean		
						Share among foreign-born (%)	Low - educated (%)	High - educated (%)	Share among foreign-born (%)	Low - educated (%)	High - educated (%)	Share among foreign-born (%)	Low - educated (%)	High - educated (%)	Share among foreign-born (%)	Low - educated (%)	High - educated (%)	Share among foreign-born (%)	Low - educated (%)	High - educated (%)	Share among foreign-born (%)	Low - educated (%)	High - educated (%)	Share among foreign-born (%)	Low - educated (%)	High - educated (%)			
Australia	48.5	20.0	4,127	25.0	34.2	5.3	14.0	45.2	31.2	16.8	45.9	48.7	33.3	26.2	2.0	6.8	58.3	10.8	22.1	26.0	2.0	16.1	36.9						
Austria	33.4	10.9	1,095	37.3	16.1	2.8	25.1	28.4	7.9	34.3	24.7	87.4	38.2	14.4	0.6	8.4	59.8	0.2	27.5	30.5	1.1	32.2	28.4						
Belgium	46.5	23.3	1,177	51.6	22.4	26.2	52.9	21.6	6.7	37.0	31.5	63.7	53.9	20.8	0.9	23.7	56.3	0.1	23.5	46.2	2.4	31.9	33.9						
Canada	31.6	31.5	6,125	21.0	47.3	6.0	12.8	58.9	39.7	19.7	51.9	37.9	24.7	41.2	4.2	12.2	56.2	0.9	15.4	47.6	11.4	21.5	42.0						
Switzerland	25.6	18.1	1,642	37.7	24.5	4.8	33.8	31.1	7.0	28.3	34.6	82.2	39.8	21.7	1.9	13.2	61.2	0.3	18.3	48.4	3.9	27.3	37.8						
Czech Republic	22.8	10.2	508	28.8	16.3	0.4	7.0	45.7	10.0	28.3	18.9	88.7	29.3	15.2	0.7	8.6	71.8	0.0	10.7	57.9	0.2	10.0	26.2						
Germany	24.2	19.3	10,076	44.0	15.6	3.0	49.9	13.9	15.3	43.4	16.9	79.1	44.4	14.8	1.0	16.5	45.1	0.5	46.3	21.0	1.1	28.0	31.2						
Denmark	37.6	19.9	380	33.6	27.6	7.8	38.4	22.8	31.3	38.8	23.2	54.9	30.6	29.9	2.9	19.1	45.4	0.6	24.4	33.7	2.6	30.3	31.3						
Spain	66.4	18.0	4,255	45.5	23.6	17.1	73.1	10.6	3.5	58.6	22.3	33.7	34.6	31.8	0.4	12.8	75.6	0.1	19.4	42.5	45.2	42.6	21.8						
Finland	40.3	23.4	162	51.8	20.7	8.2	62.6	15.1	16.7	67.3	14.5	70.2	46.7	22.5	2.5	54.5	25.4	0.5	52.3	22.4	1.9	52.4	23.2						
France	45.8	16.9	6,410	49.6	22.1	50.4	49.9	20.6	8.5	39.1	33.9	38.0	53.4	19.5	0.9	14.5	63.0	0.1	16.6	55.7	2.1	32.0	37.6						
United Kingdom	51.2	20.1	5,329	28.0	47.4	18.0	26.6	49.4	33.0	33.2	45.4	35.3	25.8	45.6	3.7	13.8	66.4	3.0	13.7	59.2	6.9	32.8	44.0						
Greece	52.5	14.0	1,075	45.4	15.1	3.0	30.3	22.2	5.8	54.6	12.9	87.7	46.5	14.3	2.0	13.4	35.6	1.1	24.9	28.2	0.4	17.6	32.7						
Ireland	47.8	22.7	529	25.5	40.8	6.6	19.7	50.6	9.1	15.7	62.6	77.4	27.6	36.4	4.1	17.7	57.7	1.4	15.7	55.2	1.4	34.4	39.5						
Italy	63.6	8.1	2,813	50.4	11.2	20.0	64.6	7.4	10.6	61.2	10.2	55.5	45.3	11.6	1.9	30.6	26.0	0.6	44.8	13.2	11.4	43.7	13.9						
Japan	25.1	27.8	1,292	24.5	30.6	0.5	7.2	59.3	75.8	24.8	29.1	2.6	3.8	78.0	3.1	2.3	81.4	0.7	1.5	83.5	17.3	30.1	20.9						
Luxembourg	28.7	12.8	147	43.0	27.1	4.5	47.4	21.2	2.5	32.0	35.5	90.7	43.5	26.7	0.9	11.5	67.3	0.1	22.2	28.4	1.3	33.7	28.2						
Mexico	70.5	12.8	289	34.5	34.5	0.2	1.8	90.8	3.9	17.3	53.9	16.5	13.6	61.3	48.9	40.9	19.4	0.0	8.8	0.0	30.4	38.2	41.5						
Netherlands	40.5	18.8	1,486	37.0	21.0	17.8	49.0	15.1	23.3	33.1	25.0	36.4	35.0	20.8	1.4	16.1	44.9	0.8	24.7	31.9	20.4	36.5	19.9						
Norway	20.3	23.0	318	37.2	29.8	9.7	50.4	21.6	30.7	48.2	22.8	49.8	30.0	34.2	4.8	19.1	45.3	0.5	20.7	41.3	4.6	41.8	23.0						
New Zealand	30.1	27.2	784	16.3	33.3	6.5	5.6	41.0	30.1	11.9	39.3	37.8	16.4	33.4	2.9	6.0	53.8	21.7	27.9	18.8	0.9	9.4	39.4						
Poland	31.2	10.4	841	46.5	14.4	0.3	28.6	46.1	2.5	12.6	42.0	96.3	47.6	13.0	0.8	33.5	38.7	0.1	63.9	36.1	0.1	37.9	33.6						
Portugal	80.0	7.7	608	53.7	19.2	49.2	59.6	18.8	1.6	62.9	15.4	28.0	43.6	22.7	1.7	37.9	26.6	0.2	16.9	55.2	19.4	54.1	14.3						
Sweden	25.0	22.8	1,093	27.8	26.5	6.1	30.1	22.5	25.3	30.5	28.5	61.2	27.4	25.2	1.4	8.7	59.1	0.3	9.3	53.5	5.6	21.7	27.4						
United States	20.3	27.4	38,564	32.7	29.9	3.4	15.0	45.2	25.5	16.7	51.5	14.9	16.8	40.5	2.4	13.0	45.8	0.7	14.7	34.3	53.0	47.2	14.7						
<b>Total</b>	<b>37.6</b>	<b>20.9</b>	<b>91,124</b>	<b>35.6</b>	<b>28.2</b>	<b>9.8</b>	<b>42.4</b>	<b>27.6</b>	<b>22.4</b>	<b>23.4</b>	<b>44.2</b>	<b>36.6</b>	<b>35.6</b>	<b>25.7</b>	<b>2.3</b>	<b>15.5</b>	<b>48.7</b>	<b>1.4</b>	<b>20.8</b>	<b>33.0</b>	<b>27.5</b>	<b>45.2</b>	<b>17.0</b>						

Note: Excluding persons with unknown education.

Source: DIOC 2005/06

*...and increasing share of high-educated migrants*

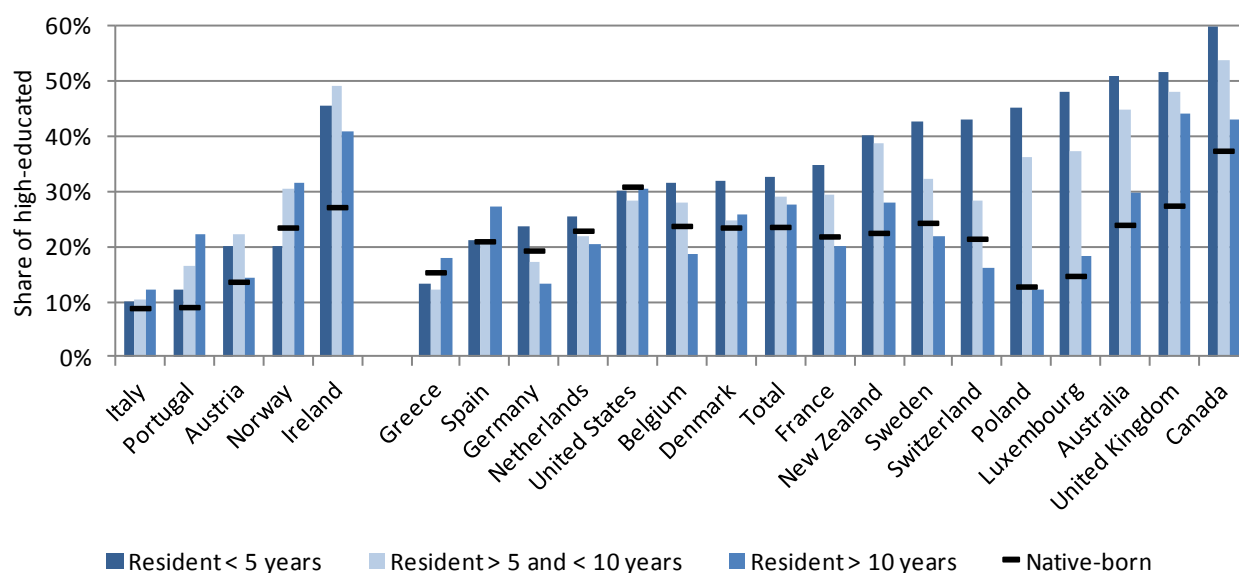
35. Between 2000 and 2005/06, the United States received the highest number of high-educated migrants (1.9 million). The United Kingdom (800 000), Canada (530 000) and Spain (495 000) also received significant numbers. Altogether, 16 European OECD countries hosted 2.2 million recent high-educated migrants, including 1.4 million from outside the EU-27. By comparison, only 360 000 high-educated persons originating from the EU-27 went to Australia, Canada, New Zealand or the United States since 2000.

36. In 2005/06, the share of highly educated among all immigrants ranged from 11% in Italy to 47% in Canada and in the United Kingdom (Table 7). In almost all destination countries, the share of migrants holding tertiary degrees is higher than that of the native-born. This pattern was already observed in 2000, but has been reinforced recently in many countries, because of the selective nature of recent migration flows.

37. OECD countries are competing to attract (and retain) high-educated immigrants, notably in R&D and ICT sectors to foster innovation capacity, but also in health or education sectors where recruitment difficulties are frequent. Recruitments of high-educated foreign workers are also generally facilitated for large multinational companies and many OECD countries have recently eased the conditions for international students to change status at the end of studies in order to facilitate their stay in the host country.

38. Between 2000 and 2005/06, the proportion of high-educated persons living in OECD countries increased by 3 percentage points for the native-born and by 5 percentage points for immigrants. As illustrated in Chart 7, in most OECD countries, recent immigrants are more highly educated than the resident population and former migrants (see Table A.3 for detailed information by destination country and duration of stay). This is the case for example in Switzerland, Sweden, Poland and Luxembourg, but the highest share of high-educated recent immigrants is recorded in Canada, United Kingdom and Australia.

**Chart 7: Share of high educated among immigrants and native-born, aged 15 and over, by duration of stay, 2005/06**



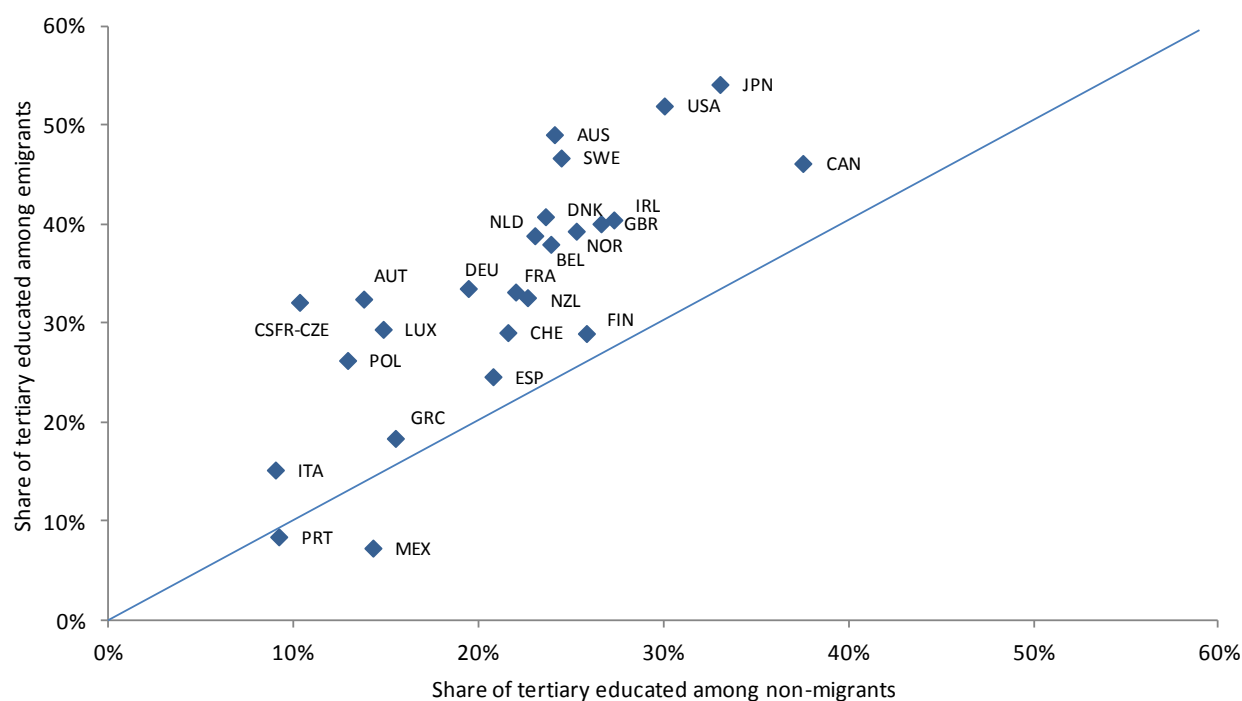
Note: Excluding persons with unknown education.  
Source: DIOC 2005/06

*High-educated migrants within the OECD area*

39. Migration is particularly selective within the OECD, as illustrated in Chart 8, which compares the share of persons holding a tertiary degree among persons who have left their country of birth and those who

stayed. This selection effect is less pronounced for southern European countries, as well as for Finland and Mexico, due to large-scale out-migration of low-educated in the past.

**Chart 8: Share of high educated among OECD migrants and non-migrants, 2005/06**



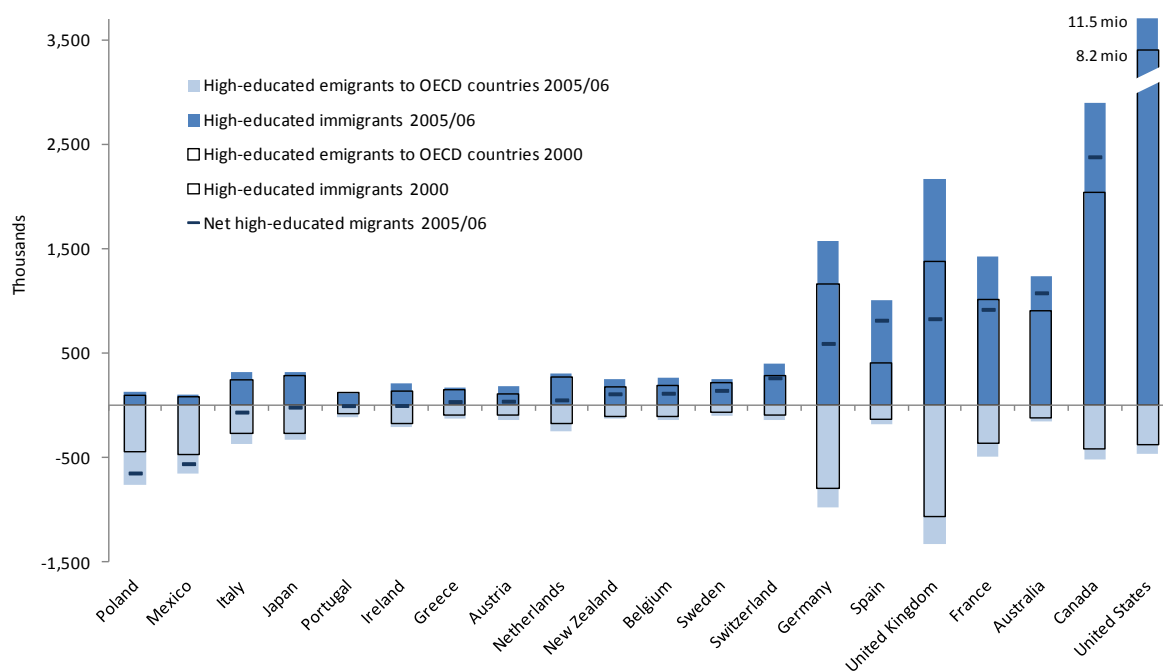
Note: Excluding persons with unknown education.  
Source: DIOC 2005/06

40. Chart 9 depicts differences in the population of high-educated immigrants (from OECD and non-OECD countries) and emigrants (to other OECD countries). This information reflects the cumulative effects of in- and out-migration waves in the past and not only recent flows.

41. In 2005/06, the United States was the leading net beneficiary of high-skilled migration with 11 million (7.8 million in 2000). Canada was the second net receiver with 2.4 million in 2005/06 and the country, which has experienced the highest growth rate since 2000 (+47%, +765 000). Australia ranked third, France fourth and the United Kingdom fifth<sup>15</sup>. Germany fell two places since 2000 with a net benefit of 580 000 high-educated migrants, the same number as in 2000. The relatively favourable position of France can be explained by its low out-migration to other OECD countries. Out-migration of high-educated persons from the United Kingdom to other OECD countries is, in contrast, large and increasing. In 2005/06, there were 1.3 million people born in the United Kingdom and holding a tertiary degree living in another OECD country, mainly in the United States, Canada or Australia. Between 2000 and 2005/06, Spain gained half a million high-educated persons through migration. On the other hand, Mexico and Poland experienced a net loss due to large outflows of high-educated workers, respectively to the United States and to the United Kingdom and Ireland. Italy also recorded negative net high-skilled migration (-42 000) because of the increase in the number of high-educated Italians who went abroad since 2000 (+100 000).

<sup>15</sup> Japan, despite its focus on skilled migrants, is not a net beneficiary of highly skilled migration. There are almost as many highly skilled Japanese workers in other OECD countries as there are highly skilled foreigners in Japan.

**Chart 9: Immigrant and emigrant populations aged 15 and over with tertiary education in OECD countries, 2005/06 and 2000**

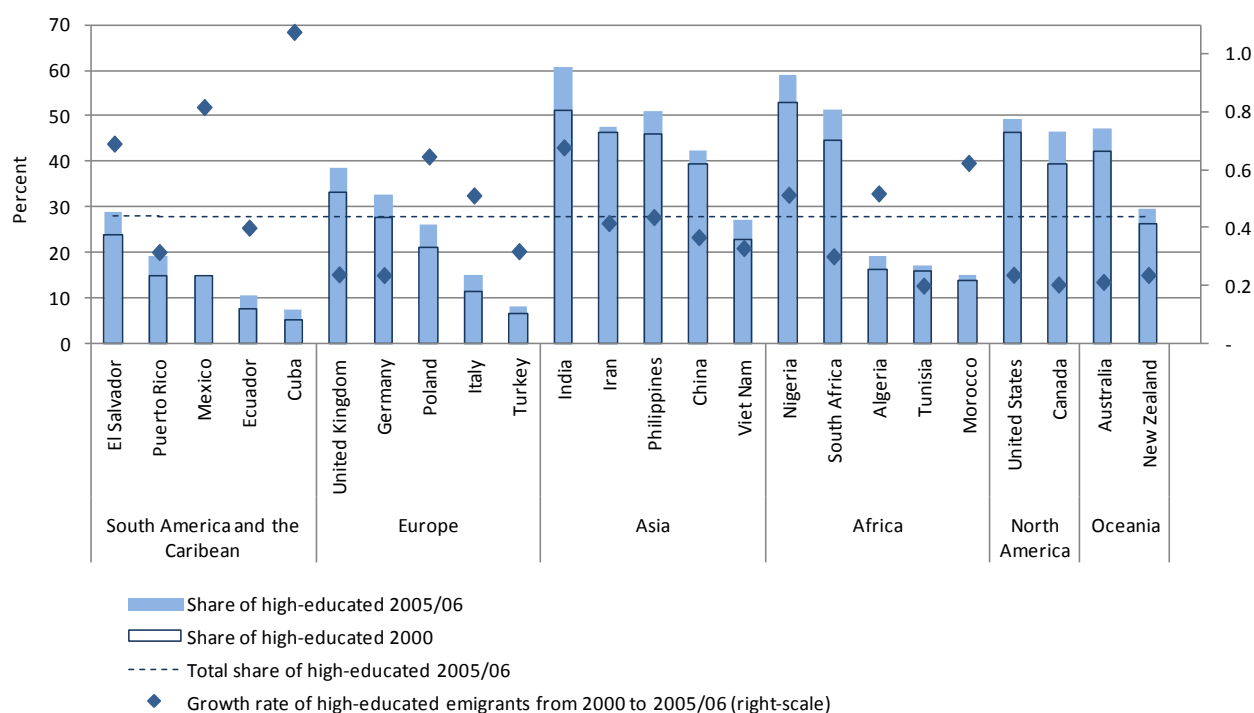


Note: Excluding persons with unknown education.  
Source: DIOC 2005/06

*High-educated migrants originating from non-OECD countries*

42. Most high-educated migrants come from developing or emerging countries. Between 2000 and 2005/06, the share of migrants originating from Asia holding a tertiary degree increased by 6 percentage points to 44%, whereas about one African migrant out of four (+3 percentage points since 2000) and less than one fifth of migrants from South America and the Caribbean (+3 percentage points since 2000) were highly educated (see Table 7 above).

**Chart 10: Share of highly educated aged 15 and over among the five main emigrant populations, by regions of origin, 2005/06 and 2000**



Note: Excluding persons with unknown education.  
 Source: DIOC 2000 and DIOC 2005/06

43. In 2005/06, over half of the migrant populations originating from India, Nigeria, the Philippines and South Africa were highly educated (Chart 10). Since 2000, the share of high-educated persons increased in all main emigrant groups, but most notably for Indian migrants (+8 percentage points compared with 2000). In 2005/06, there were 550 000 recent high-educated Indian migrants in the OECD. China is the second most important country of origin with 320 000 recent highly skilled migrants, identical to the total for Sub-Saharan Africa.<sup>16</sup>

## 2. Origin countries' perspective: total and highly skilled emigration rates

44. Educational attainment levels increased in around 95% of all countries worldwide from 2000 to 2005/06, according to the education data set of Barro and Lee (2010). In the meantime, emigration to OECD countries has intensified and the share of highly educated among emigrants increased. Looking at absolute numbers or at changes in absolute numbers of migrants by skill level is therefore not sufficient to identify the countries of origin which are affected the most by high-skilled emigration. The following section presents regional and national emigration rates (the share of people born in one country currently living in an OECD country – Box 3), for the total population and by skill level.

<sup>16</sup> The total number of recent highly educated migrants from North Africa and Sub-Saharan Africa is 460 000.

**Box 3: Emigration rates**

DIOC provides information on persons by country of birth for more than 200 countries of origin, which allows the calculation of emigration rates by gender, age and educational attainment for a large number of countries. This section presents estimates of emigration rates and “brain drain” (the emigration rate of persons holding tertiary degrees) to OECD countries. The emigration rate of a given origin country  $i$  in a given year is defined as the share of the native population of country  $i$  residing abroad at this time:

$$m_i = M_i / (M_i + N_i)$$

where  $M_i$  is the emigrant population from country  $i$  living abroad, and  $N_i$  is the native non-migrant population of country  $i$ . Similarly, the emigration rate of the high educated is the share of high-educated natives living abroad. Usually, however, due to the lack of appropriate data, emigration rates are calculated without separating the native-born and foreign-born populations in origin countries.<sup>17</sup> This caveat also applies to the estimates presented in this section.

**2.1 Total emigration rates**

45. Table 8 presents total weighted emigration rates<sup>18</sup> by regions and income groups in 2000 and 2005/06 and shows large differences in the overall emigration rate: Europe, Oceania and especially Latin America have the highest emigration rates, while Africa, Asia and North America have 1% or less of their population abroad. Total emigration rates vary largely across countries, even within the same region. The emigration rate for Morocco, for instance, is close to 9%, whereas corresponding figures for North Africa and Sub-Saharan Africa are respectively 2.2% and 0.9%.

46. The highest emigration rates are generally recorded for countries with smaller populations, notably small island states. In 2005/06, one third of the persons born in Jamaica lived in OECD countries, and more than 20% of the population originating from Cape Verde, Trinidad and Tobago, Malta or Fiji lived in the OECD. In contrast, large countries, such as India, China, the United States, Indonesia, Brazil, Japan, Bangladesh, Pakistan or Nigeria all had less than 0.1% of their population in the OECD area. Among all countries with a total population aged 15+ of over 20 million (35 countries), Mexico is the only country with a double-digit emigration rate (13%) (see Table A.9 in the Annex for total emigration rates by origin countries).

47. Countries with a high population growth tend to show limited increases, or even decreases, in emigration rates. For example, eastern African countries such as Rwanda, Burundi or Eritrea experienced very rapid increases of their populations between 2000 and 2005/06, but limited changes in emigration rates. Similarly, populations in Syria, Jordan and Yemen grew by more than 18% over the period considered, but registered little changes in total emigration. Paradoxically, the countries, which have contributed the most to the growth in immigration in the OECD, do not necessarily have strong demographic dynamics. This is the case, for instance, of the countries from central and eastern Europe, China and Mexico.

<sup>17</sup> See Dumont, Spielvogel and Widmaier (2010) for estimates of emigration rates circa 2000 controlling for immigration in countries of origin.

<sup>18</sup> Non-weighted figures presented in Table A.7 in the Annex show much higher levels because large countries of origin tend to have lower emigration rates.

**Table 8: Emigration rates by region of origin and by skill level, population aged 15 and over, 2000 and 2005/06**  
Weighted averages

	Emigrant population (thousands)	2005/06				2000				
		Total	Emigration rates (in percent)			Total	Emigration rates (in percent)			
			Low - educated	Intermediate- educated	High- educated		Low - educated	Intermediate- educated	High- educated	
High-income: OECD	25,155	2.9	4.5	1.9	3.7	22,999	2.8	4.4	2.0	2.6
High-income: non-OECD	3,404	7.7	7.6	6.6	12.5	3,017	7.5	8.5	6.3	12.3
Upper-middle-income	26,468	3.8	5.3	2.5	5.2	19,565	3.0	4.2	1.9	3.6
Lower-middle-income	26,309	4.6	1.3	1.1	5.6	19,605	1.3	1.1	0.9	5.3
Low-income	8,319	0.6	0.2	0.5	5.4	6,046	0.5	0.2	0.5	4.2
<b>Africa</b>	<b>8,947</b>	<b>1.6</b>	<b>1.0</b>	<b>1.8</b>	<b>10.2</b>	<b>6,847</b>	<b>1.4</b>	<b>0.9</b>	<b>1.7</b>	<b>9.2</b>
Morocco	2,106	9.0	7.7	10.5	15.3	1,505	7.3	6.1	9.0	13.0
Other North Africa	2,403	2.2	1.8	1.9	6.2	2,151	2.3	1.8	2.0	8.1
Sub-Saharan Africa	4,437	0.9	0.4	1.1	13.2	3,191	0.8	0.4	1.0	10.2
<b>Asia</b>	<b>19,510</b>	<b>0.7</b>	<b>0.3</b>	<b>0.5</b>	<b>3.7</b>	<b>15,473</b>	<b>0.6</b>	<b>0.3</b>	<b>0.5</b>	<b>3.3</b>
China	2,723	0.3	0.2	0.1	1.7	2,063	0.2	0.2	0.1	1.8
India	2,759	0.4	0.1	0.2	4.2	1,951	0.3	0.1	0.2	3.2
Philippines	2,491	4.4	1.8	3.8	7.9	1,930	3.9	1.8	3.9	6.8
<b>Europe</b>	<b>34,281</b>	<b>4.5</b>	<b>8.8</b>	<b>3.4</b>	<b>8.6</b>	<b>28,425</b>	<b>3.9</b>	<b>6.8</b>	<b>2.9</b>	<b>6.6</b>
EU27	22,129	5.1	6.4	3.3	8.0	19,370	4.6	5.4	3.1	7.0
Turkey	2,603	4.7	5.3	3.6	5.0	2,085	4.2	4.5	3.5	3.2
<b>North America</b>	<b>2,075</b>	<b>0.8</b>	<b>1.7</b>	<b>0.4</b>	<b>1.2</b>	<b>1,910</b>	<b>0.8</b>	<b>3.5</b>	<b>0.5</b>	<b>0.7</b>
Oceania	1,221	4.7	5.0	3.9	5.3	1,103	4.5	6.3	3.3	4.8
<b>South America &amp; Caribbean</b>	<b>24,786</b>	<b>6.0</b>	<b>5.7</b>	<b>5.5</b>	<b>9.2</b>	<b>18,624</b>	<b>5.0</b>	<b>5.0</b>	<b>4.4</b>	<b>7.0</b>
Mexico	10,780	13.1	18.4	9.7	7.1	8,328	11.1	15.4	7.0	6.1
<b>Total</b>	<b>90,818</b>	<b>1.9</b>	<b>1.5</b>	<b>1.5</b>	<b>4.8</b>	<b>72,381</b>	<b>1.6</b>	<b>1.4</b>	<b>1.3</b>	<b>3.7</b>

Note: Weighted averages. Income groups are classified according to the World Bank classification of economies based on the 2005 GNI per capita: low income USD 955 or less, lower middle income USD 996 – USD 3 945, upper middle income USD 3 946 – USD 12 195 and high income USD 12 196 and more. Former USSR and Former Yugoslavia are classified in “Upper middle income” countries, the aggregated category North and South Korea to “High income: OECD”. Former USSR, Former Czechoslovakia and Former Yugoslavia are assigned to the region “Europe”.

Source: DIOC 2000, DIOC 2005/06 and Barro and Lee (2010);

## 2.2 Emigration rate of the highly educated

48. In most countries of origin, the emigration rate is higher for the highly educated than for the total population. The difference is especially high for African and Asian countries (Table 8). High-educated Africans are on average 10 times more likely to emigrate to an OECD country than their low-educated counterparts (12 times for Asian migrants). The situation is however quite different in Latin American countries, where emigration of the low educated is relatively high, especially from Mexico (18.4%).

49. Regional averages mask large differences among countries. The highest emigration rates for the highly educated are observed for small countries in Latin America and the Caribbean. Several countries have emigration rates for the highly skilled above 70% – Barbados (83%), Guyana (79%), Haiti (75%) and Trinidad and Tobago (74%).

50. In Africa, the emigration rate of the highly educated is on average around 10% (16% for non-weighted average, see Table A.6), but for some countries it can be much higher. For example, about half of the highly educated from Congo (61%), Mauritius (50%) and Zimbabwe (49%) live in an OECD country.

51. In Asia, the “brain drain” is less pronounced with an average rate of 3.7% (9.5% for non-weighted average, see Table A.7), but there are also large differences across countries. The emigration rate of highly skilled Filipinos (8%) is twice as high as the one for Indians (4%). The highest emigration rates are registered for Cambodia (44%) and Sri Lanka (34%).



52. In Europe, the emigration rate of the highly skilled is around 8.6% (11.8% for non-weighted average, see Table A.6). The highest rates are observed for Albania (35%) and smaller countries, such as Malta (31%) and Cyprus<sup>19</sup> (22%) (see Table A.9 in the Annex for all origin countries).

**Table 9: Emigrants and emigration rates, 10 main countries of origin affected (inferior and superior to one million inhabitants), population aged 15 and over, 2000 and 2005/06**

Highest emigrant population (thousands)			Highest total emigration rate (in percent)			Highest emigration rate of high-educated (in percent)			Highest change in emigration rate (percentage points) (difference from 2000 to 2005/06)		
2005/06		2000	2005/06		2000	2005/06		2000			
<b>Total population &gt; 1 million</b>											
Mexico	10,780	8,328	Jamaica	32.8	31.3	Haiti	75.4	70.2	Congo	24.8	
Former USSR	5,604	3,408	Albania	26.5	19.8	Trinidad and Tobago	74.0	73.3	Zimbabwe	19.8	
United Kingdom	3,433	3,225	Trinidad and Tobago	23.3	22.3	Congo	61.4	36.6	Malawi	18.8	
Germany	3,015	2,884	El Salvador	20.1	17.3	Jamaica	50.6	47.0	Guatemala	9.4	
Poland	2,792	2,103	Ireland	16.2	20.9	Zimbabwe	49.4	29.5	Zambia	8.8	
Former Yugoslavia	2,759	2,282	Portugal	13.5	12.8	Cambodia	43.7	43.6	Albania	8.7	
India	2,759	1,951	Mexico	13.0	11.1	Malawi	38.5	19.7	Uruguay	7.2	
China	2,723	2,063	Former Yugoslavia	12.7	10.9	Albania	35.0	26.4	El Salvador	7.1	
Turkey	2,603	2,085	New Zealand	12.2	12.2	Sri Lanka	34.1	27.7	Côte d'Ivoire	6.8	
Philippines	2,491	1,930	Dominican Republic	11.8	10.8	Sierra Leone	32.2	36.2	Bulgaria	6.5	
<b>Total population &lt; 1 million</b>											
Guyana	350	304	Tonga	41.0	40.3	Barbados	82.7	90.4	Fiji	5.9	
Fiji	141	119	Guyana	40.7	37.4	Guyana	79.4	77.6	Luxembourg	5.3	
Cyprus <sup>a</sup>	121	133	Barbados	26.8	28.0	Tonga	56.1	51.7	Comoros	5.0	
Mauritius	109	91	Belize	22.4	22.5	Mauritius	49.7	53.0	Cyprus <sup>a</sup>	4.6	
Barbados	87	88	Malta	20.3	24.0	Belize	49.5	45.4	Tonga	4.4	
Malta	85	98	Fiji	20.3	18.4	Fiji	38.8	32.9	Belize	4.1	
Belize	50	43	Cyprus <sup>a</sup>	15.3	18.0	Malta	31.5	31.4	Bahamas	3.9	
Tonga	45	41	Bahamas	12.3	12.3	Bahamas	23.4	19.5	Gabon	3.1	
Luxembourg	39	31	Iceland	10.9	9.5	Cyprus <sup>a</sup>	22.4	17.8	Guyana	1.8	
Bahamas	33	30	Mauritius	10.4	9.4	Comoros	20.1	15.1	Brunei Darussalam	1.3	

Note: "a" see footnote 19.1 and footnote 19.2.

Source: DIOC 2000, DIOC 2005/06 and Barro and Lee (2010)

*"Brain drain" is increasing for many less developed countries, notably in Sub-Saharan Africa and the Caribbean*

53. Between 2000 and 2005/06, emigration rates of the highly educated increased most notably in Latin American countries by more than two percentage points. This is mainly due to higher emigration rates from the Caribbean. By contrast, the change in the emigration rate of the highly educated was limited for Africa, because of diverging evolutions for Sub-Saharan African countries (increasing) and Northern African countries (decreasing).

54. Countries for which emigration rates of the highly skilled increased the most are Congo (+25 percentage points), Zimbabwe (+20 percentage points) and Malawi (+19 percentage points) (Table 9). Large increases are also recorded for several Latin American countries (e.g. Guatemala +9.4 percentage points), as well as in Europe for Albania (+8.8 percentage points).

55. A more detailed analysis is however needed to understand the main drivers behind the observed changes by country and/or region of origin. Indeed, highly educated emigration rates can be affected by changes in overall emigration rates or by changes in the selectivity of migration, (i.e. the share of high-

<sup>19</sup> 1. Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

2. Note by all European Union Member States of the OECD and the European Commission: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

educated among emigrants). In addition, everything else being equal, an increase (decrease) in the share of high-educated persons in the country of origin affects negatively (positively) the emigration rate. These different variables can vary concomitantly or in opposite directions depending on the specific situation of each country.

56. In order to disentangle the contribution of these different components to the variations of the emigration rates of the highly educated, a shift-share analysis is conducted:

$$\Delta e_3 = \underbrace{e_{2000} \cdot \Delta m_3 \cdot p_3}_{\text{Effect of the change in selection of emigration (1)}} + \underbrace{\Delta e \cdot m_3 \cdot p_3}_{\text{Effect of the change in the scope of emigration (2)}} + \underbrace{e_{2000} \cdot m_3 \cdot \Delta p_3}_{\text{Effect of the change in education in the country of origin (3)}} + \underbrace{\Delta m_3 \cdot e_{2000} \cdot p_3 + \Delta e \cdot m_3 \cdot p_3 + \Delta p_3 \cdot m_3 \cdot e_{2000}}_{\text{Residual term (4)}}$$

Where

$e$  is the total emigration rate

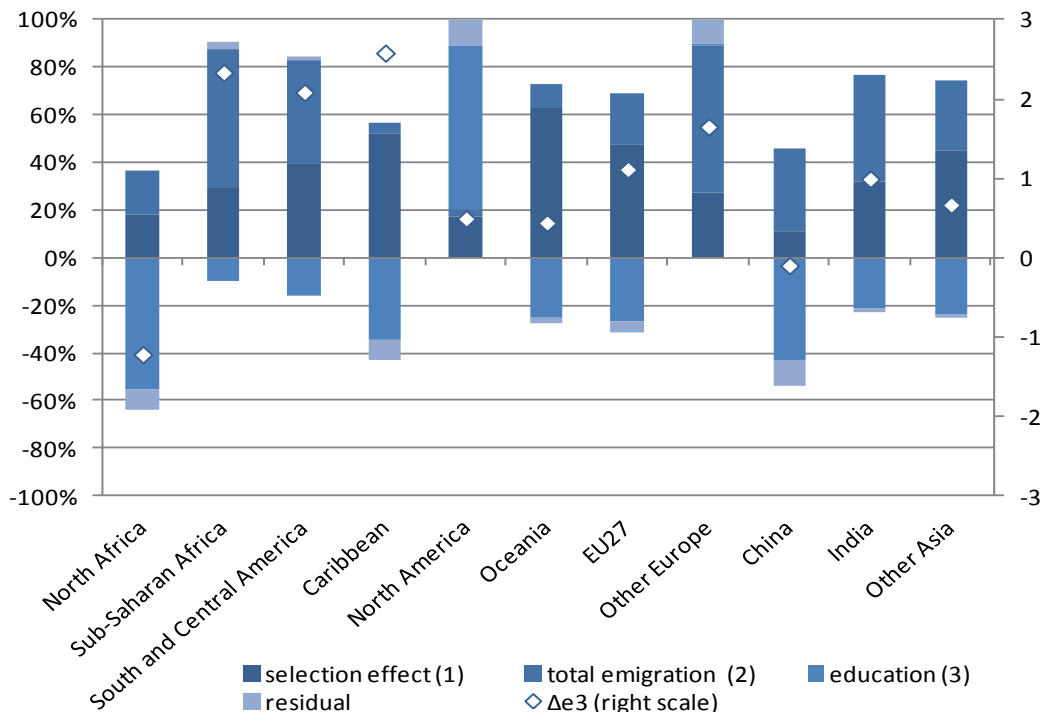
$e_3$  is the emigration rate of the highly educated

$m_3$  is the share of the highly educated in the emigrant population

$p_3$  is the inverse ratio of the share of the highly educated in total population (emigrants plus non-migrant population in the country of origin)

$\Delta$  represents the variation (difference in percentage points) of the different variables between 2000 and 2005/06

**Chart 11: Contribution of different factors to changes in emigration rates of the highly educated from 2000 to 2005, population aged 15 and over**



57. North Africa is the only region where we observe a decline in the emigration rate of the highly educated (-1.2 percentage points). This is due to the rapid increase in the share of highly educated in the region. This evolution was not absorbed by the increase in out-migration and in the selectivity of emigration

(see Box 4 for a more detailed analysis of the evolution of migration in North Africa and in other Arab countries).

58. Large improvements in human capital in countries of origin are also observed in other regions and notably in the Caribbean, but in these cases the expansion of high-skilled emigration was large enough to induce an increase in the emigration rate. Concerning the Caribbean, the shift-share analysis reveals that the most important factor was the increase in the share of the highly educated among emigrants (i.e. the selection effect dominated the scope of emigration effect). In contrast, in Sub-Saharan Africa, the dominant factor was the increase in total migration. In Asia and in South and Central America, the size and the composition effects are equally important.

#### Box 4: Migration from Arab countries

The changing political situations in Arab countries in 2011 attracted much attention in OECD countries regarding potential or increasing migration to neighbouring European countries. Previous migration from Arab countries to the OECD countries came in quite different and successive waves: i) large migration from Algeria to France took place just after the decolonisation; ii) important migration flows, mainly from Morocco, occurred through guest worker programmes in the 1960s and 1970s; iii) family migration from Arab countries, notably from North Africa, gained importance since the 1980s; and iv) various waves of humanitarian migration arrived both in Europe and North America mainly from the Lebanon, Egypt and more recently from Iraq.

Between 2000 and 2005/06, migration from Maghreb and other Arab (Mashreq) countries increased by 23% to around 5.5 million migrants in the OECD. The main countries of origin were Morocco (38% of the total), Algeria (26%) and Tunisia (9%) and the main destination countries were France (2.5 million, of which 660 000 were French repatriates from Algeria), Spain (580 000) and the United States (540 000).

Overall, in 2005/06, 45% of Arab migrants were women. Recent migration flows from Arab countries are still dominated by men (53%), but the share of women increased by 5 percentage points compared with 2000.

Migration from Arab countries to the OECD is a longstanding phenomenon and is consequently characterised by a large share of older migrants (65+) compared with other migrant groups. In the meantime, recent immigrants from Arab countries tend to be relatively young which explains the increasing share of young migrants (15-24). Migrant populations of Iraqi-born, Jordan-born and Moroccan-born are largely composed of younger persons, whereas migrant populations of Libya-born and Algeria-born are older (Table 10).

**Table 10: Emigrant populations from Arab countries in the OECD, 2005/06 and 2000**

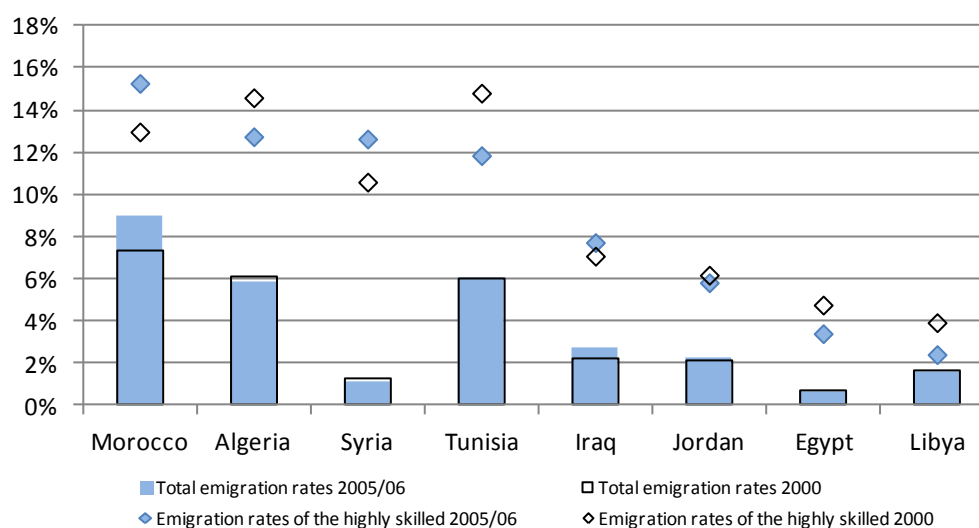
Country of origin	Emigrant population (thousands)		Women (%)		Young persons aged 15-24 (%)		Older persons aged 65+ (%)		Low-educated (%)		High-educated (%)	
	2005/06	2000	2005/06	2000	2005/06	2000	2005/06	2000	2005/06	2000	2005/06	2000
Algeria	1,450	1,312	48.2	47.7	5.1	4.2	24.5	22.5	51.7	55.7	19.3	16.4
Egypt	338	308	40.0	42.0	7.2	6.1	17.9	18.5	15.1	19.4	53.0	48.9
Iraq	454	328	41.7	37.9	20.1	17.0	6.1	5.3	41.4	42.2	27.9	28.6
Jordan	82	63	42.5	38.4	12.6	12.9	7.7	4.9	17.4	20.2	43.3	41.4
Lebanon	380	334	45.9	44.6	9.1	11.6	11.1	9.1	26.3	35.1	39.6	32.1
Libya	57	62	53.3	47.4	2.7	5.2	29.3	16.9	46.7	44.8	21.1	24.5
Morocco	2,106	1,505	44.6	44.0	12.4	13.6	8.0	6.5	60.4	62.3	15.1	14.2
Syria	139	125	44.8	43.4	9.6	10.5	13.5	11.7	29.6	33.3	37.9	35.0
Tunisia	474	427	42.9	44.3	5.8	4.6	19.5	18.5	53.1	56.0	17.2	16.0
<b>Total</b>	<b>5,479</b>	<b>4,464</b>	<b>45.0</b>	<b>44.5</b>	<b>9.8</b>	<b>9.3</b>	<b>14.4</b>	<b>13.6</b>	<b>49.3</b>	<b>51.7</b>	<b>22.5</b>	<b>20.9</b>

*Note:* In 2005/06, there were around 18 000 emigrants from the Occupied Palestinian Territory living in OECD countries (excl. Israel).  
*Source:* DIOC 2000 and DIOC 2005/06

In 2005/06, about one migrant out of four originating from the region was highly educated. This is higher than what was observed in the population of 2000 (21%), but lower than what is observed for migrants from non-OECD countries in general (31%). However, the educational attainment composition is diverse by country of destination and origin. Over half of recent immigrants (duration of stay of less than 5 years) from Libya (55%), Egypt (51%) and Jordan (51%) were highly educated. Many of them live in Canada and the United States. Recent migrants from northern African countries are mainly located in Europe and tend to be low educated: Morocco (66%), Tunisia (48%) and Algeria (44%). Half of them moved to France or Spain between 2000 and 2005/06.

Despite an increasing number of highly skilled emigrants from Arab countries, emigration rates of the highly educated decreased between 2000 and 2005/06 in Tunisia (-3 percentage points), Egypt (-1 percentage point), Libya and Algeria (-2 percentage points). This is due to a faster increase of university graduates within the resident population, than among the emigrant population. Highest “brain drain” figures were registered for Morocco (15%; +2 percentage points), Syria (13%; +2 percentage points) and Algeria (13%) (Chart 12).

**Chart 12: Total and highly skilled emigration rates of Arab countries to the OECD, population aged 15 and over, 2005/06 and 2000**



Source: DIOC 2000, DIOC 2005/06 and Barro and Lee (2010)

### 3. Special focus on women

59. The share of women in the migrant population remained stable between 2000 and 2005/06 and the migrant population still comprised slightly more women (50.9%) than men (Table 11). There are, however, large differences by countries of origin and destination.

60. The highest shares of women in the immigrant population are observed in Poland (59%), Japan (55%) and Italy (54%). In contrast, in Ireland and Mexico migrant populations are mainly composed of men (48% women in each of these countries). In Ireland, the share of women among the immigrant population even decreased by 2.5 percentage points from 2000 to 2005/06.

61. Most migrants from North America, Asia and European countries are women (52% to 53%), whereas migrants from Africa (47%) and Latin American countries (49%) are mainly men. In Asia, 53% of Indian-born migrants are men, whereas 54% of Chinese-born migrants are women. The highest share of women is recorded for the Philippines with 61%.

62. These differences can be explained by a variety of factors, including the seniority of migration waves (i.e. older migrant groups have a higher proportion of women, but women are also overrepresented in recent migration flows – see Oso and Garson 2005), as well as the characteristics of migration policies (i.e. possibility for family migration and reunification) and the needs of the labour market (e.g. opportunities for foreign workers in sectors/occupations where female employment is dominant, domestic sectors for instance).

Table 11: Characteristics of migrant women aged 15 and over by origin, 2005/06

Region of origin	Foreign-born population 15+ (thousands)			Women (%)	Low-educated (%)			High-educated (%)		
	Men	Women	Total		Men	Women	Total	Men	Women	Total
<b>Africa</b>	<b>4,757</b>	<b>4,189</b>	<b>8,947</b>	<b>46.8</b>	<b>39.6</b>	<b>45.6</b>	<b>42.4</b>	<b>29.7</b>	<b>25.2</b>	<b>27.6</b>
Morocco	1,167	939	2,106	44.6	57.3	64.3	60.4	16.5	13.4	15.1
Other North Africa	1,302	1,102	2,403	45.8	42.7	50.0	46.0	26.2	21.7	24.1
Sub-Saharan Africa	2,288	2,149	4,437	48.4	28.7	34.9	31.7	38.6	32.4	35.6
<b>Asia</b>	<b>9,750</b>	<b>10,675</b>	<b>20,425</b>	<b>52.3</b>	<b>21.4</b>	<b>25.3</b>	<b>23.4</b>	<b>46.3</b>	<b>42.2</b>	<b>44.2</b>
China	1,253	1,470	2,723	54.0	24.4	27.4	26.0	46.8	42.9	44.7
India	1,462	1,297	2,759	47.0	13.9	19.4	16.4	66.9	59.6	63.5
Philippines	965	1,526	2,491	61.3	12.8	14.3	13.8	49.4	53.5	51.9
Other Asia	6,070	6,382	12,452	51.3	24.0	28.7	26.4	40.8	35.9	38.3
<b>South America and the Caribbean</b>	<b>12,761</b>	<b>12,268</b>	<b>25,030</b>	<b>49.0</b>	<b>47.3</b>	<b>43.2</b>	<b>45.3</b>	<b>15.2</b>	<b>18.7</b>	<b>16.9</b>
Mexico	6,018	4,762	10,780	44.2	60.4	58.7	59.7	6.7	8.4	7.4
Other South America and the Caribbean	6,717	7,480	14,197	52.7	35.4	33.2	34.2	23.0	25.4	24.2
<b>North America</b>	<b>971</b>	<b>1,105</b>	<b>2,076</b>	<b>53.2</b>	<b>15.9</b>	<b>15.3</b>	<b>15.5</b>	<b>49.7</b>	<b>47.9</b>	<b>48.7</b>
<b>Oceania</b>	<b>617</b>	<b>635</b>	<b>1,251</b>	<b>50.7</b>	<b>20.2</b>	<b>21.4</b>	<b>20.8</b>	<b>32.1</b>	<b>34.0</b>	<b>33.0</b>
<b>Europe</b>	<b>15,878</b>	<b>17,484</b>	<b>33,362</b>	<b>52.4</b>	<b>33.3</b>	<b>37.8</b>	<b>35.6</b>	<b>26.4</b>	<b>25.0</b>	<b>25.7</b>
EU 27	10,455	11,641	22,096	52.7	28.8	33.0	31.0	30.4	27.9	29.1
Turkey	4,058	4,605	8,663	53.2	35.8	39.7	37.9	21.8	22.9	22.4
Other Europe	1,365	1,237	2,603	47.5	59.9	73.6	66.4	9.9	6.4	8.2
<b>Total</b>	<b>44,774</b>	<b>46,402</b>	<b>91,176</b>	<b>50.9</b>	<b>34.9</b>	<b>36.4</b>	<b>35.6</b>	<b>28.4</b>	<b>27.9</b>	<b>28.2</b>

Note: Excluding persons with unknown education.

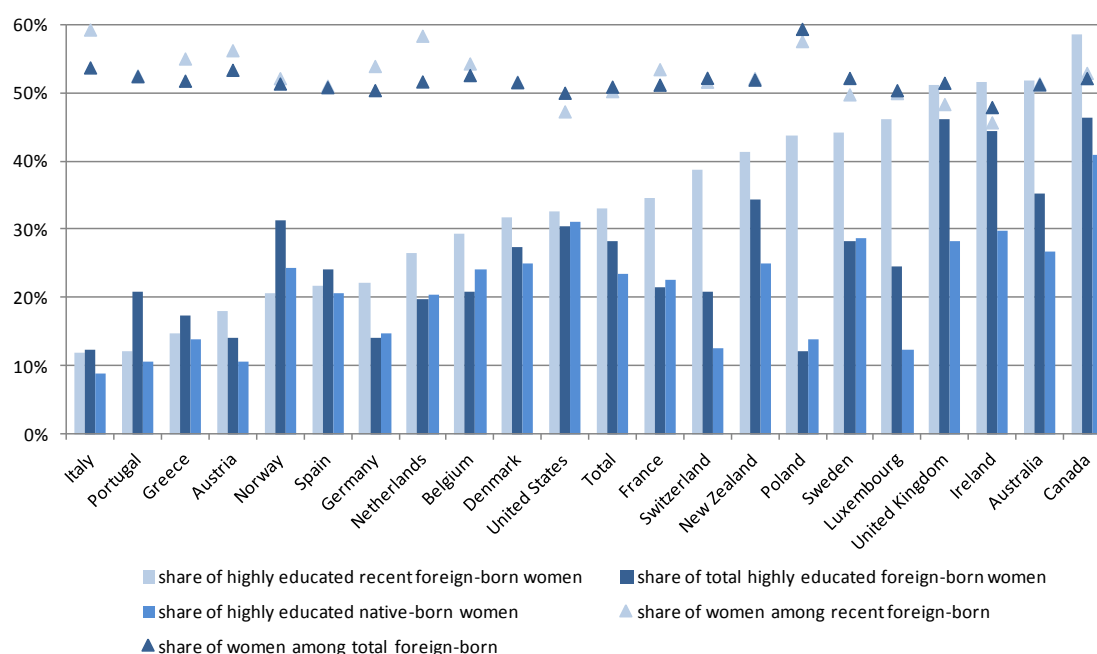
Source: DIOC 2005/06

### 3.1 *Recent migrant women are more highly educated than their male counterparts*

63. Migrant women tend to be better educated than in the past. In 2005/06, almost 28% of migrant women were highly educated, a figure, almost identical to that for male migrants (28.4%) but higher than for native-born women (23%) (see Chart 13). This is visible in OECD settlement countries (Australia, Canada, New Zealand), but also in many European OECD countries. The share of the highly educated among recent migrant women is particularly high in the United Kingdom and Ireland (51% and 52%, respectively). Migrant women are less likely to hold University degrees in southern European countries<sup>20</sup>.

<sup>20</sup>

The highest shares of low-educated (primary education or less) among migrant women are therefore recorded in Spain and Greece (44% respectively), in Belgium (43%), Germany (40%) and France (39%).

**Chart 13: Educational attainment of women aged 15 and over by place of birth and country of destination, 2005/06**

Note: Excluding persons with unknown education.

Source: DIOC 2000 and DIOC 2005/06

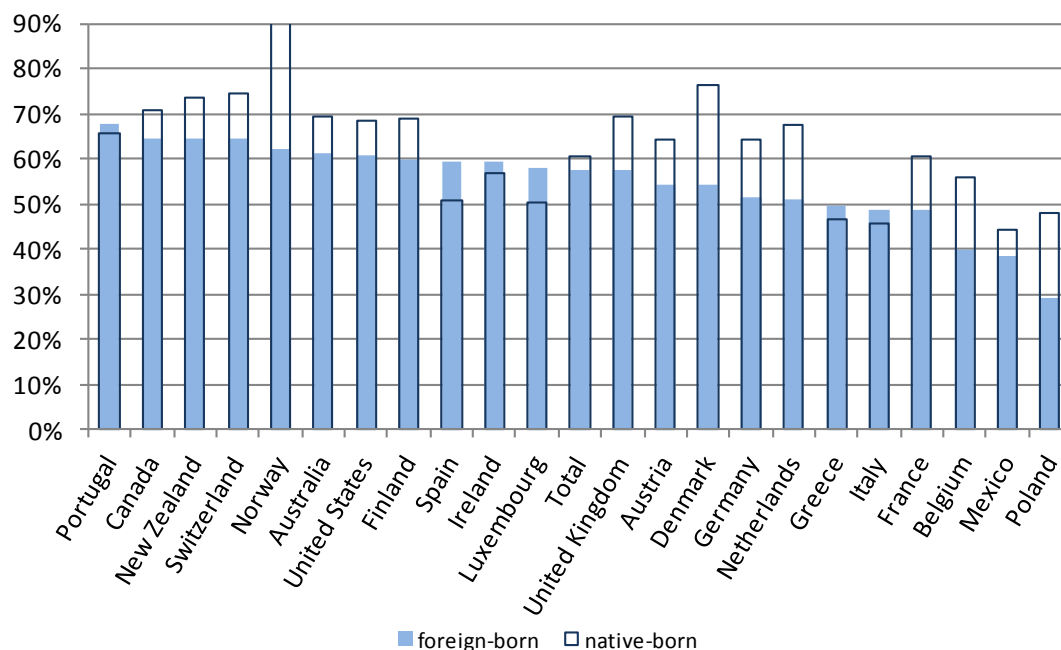
64. Among recent migrant women, 33% hold a tertiary degree compared with 31.5% for men. India (244 000), China (173 000) and the Philippines (142 000) are the three main countries of origin for high-educated migrant women with a duration of stay of less than five years.

### 3.2 *Migrant women face persisting difficulties in integration in OECD labour markets*

65. Despite more favourable educational attainment levels, migrant women have relatively poor labour market outcomes. On average, 58% of migrant women are employed, 3 percentage points lower than for native-born women (Chart 14). The largest gaps in employment rates are observed in the Nordic countries and in the Netherlands. However, the lowest employment rates for migrant women are registered in France (49%) and Belgium (40%).

66. As is the case for men, high-educated migrant women face particular difficulties in accessing the labour market, but also in finding jobs which correspond to their formal qualifications. The highest gaps between the employment rates of foreign-born and native-born tertiary-educated women are registered in Denmark, Germany, Austria, France, Switzerland and Finland. In all of these countries, the difference exceeds 16 percentage points.

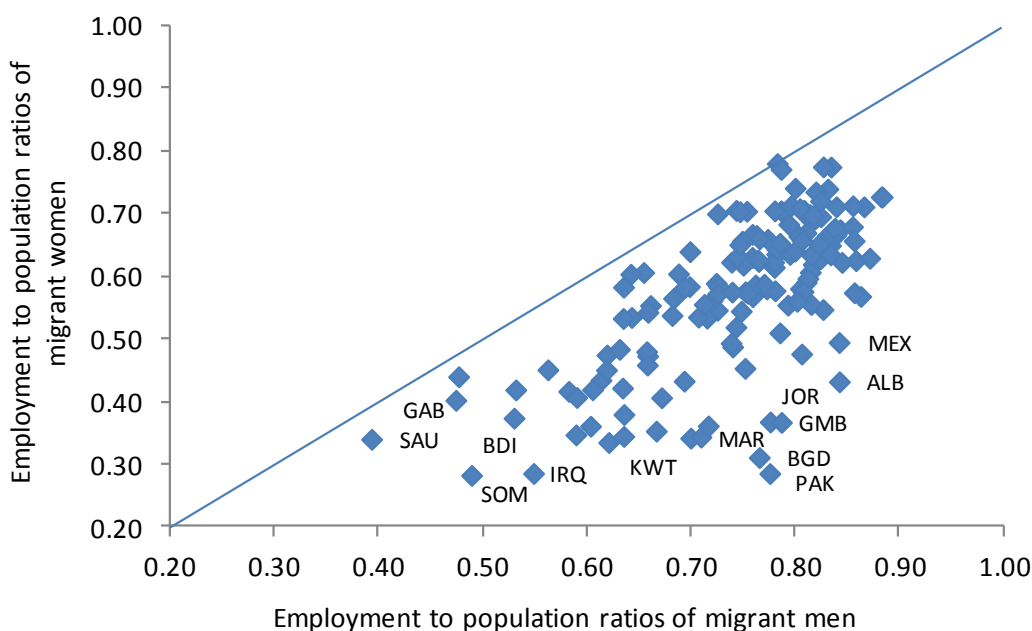
**Chart 14: Employment-to-population ratios of native-born and foreign-born women aged 15-64, by destination country, 2005/06**



Source: DIOC 2005/06

67. Whatever their skill level and for all countries of origin, migrant women have lower employment rates than their male counterparts (Chart 15). On average in the OECD, only around one third of migrant women born from the following countries are employed: Pakistan (29%), Iraq (29%), Bangladesh (31%), Morocco (34%) and Turkey (35%). This fact can be explained by the nature of the migrant flow, which is mainly humanitarian (e.g. Iraq) or family-related (e.g. Turkey and Morocco). In contrast, high employment rates are recorded for women born in the Philippines (78%), in Jamaica (77%) and Ireland (74%).

**Chart 15: Employment rates of foreign-born men and women aged 15-64, by country of origin, 2005/06**

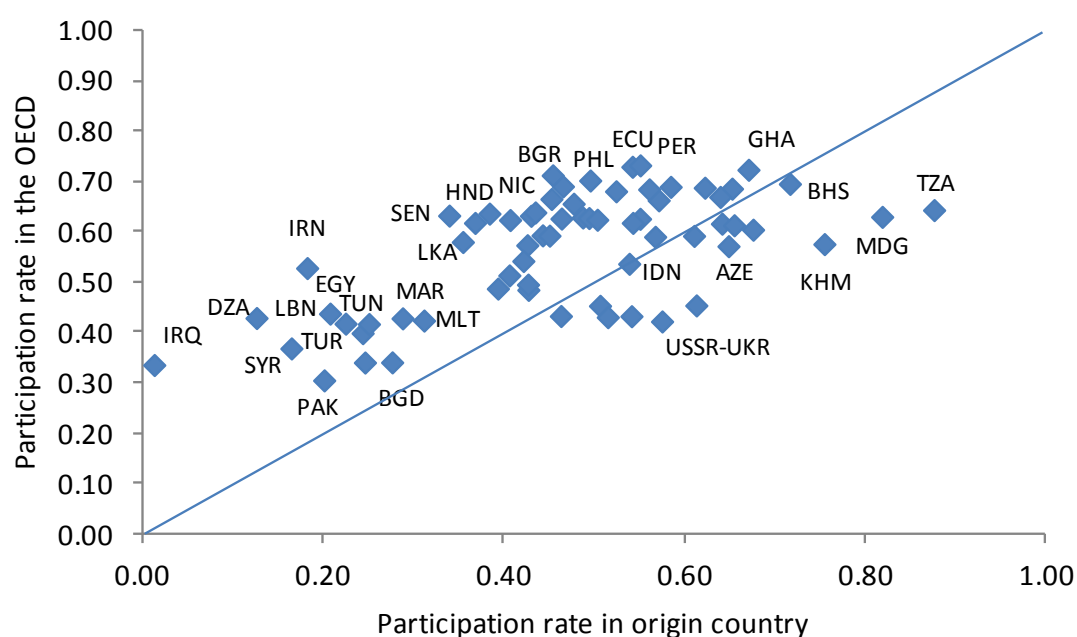


Source: DIOC 2005/06

68. Although migrant women seem to have difficulties in accessing the labour markets in OECD destinations, they tend to be more integrated in the labour markets of OECD destination countries than women from the same countries who did not migrate. In Arab countries particularly, the participation of women in the labour market is low and migration to the OECD seems to offer better labour market opportunities for women. Egyptian-born women have a participation rate which is 16 percentage points higher in the OECD than in Egypt. Even larger gaps are observed for Iran (35 percentage points) and Senegal (29 percentage points).

69. Even Latin American migrant women, who tend to have higher participation rates in their countries of origin, improve their access to the labour market through migration to the OECD area. Whether this phenomenon is due to the impact of migration on the emancipation of women, to selection effects or to a greater necessity in the destination country to diversify the sources of income in the household, remains to be further investigated.

**Chart 16: Participation rates of foreign-born women aged 15 and over in the OECD and in their country of origin, 2005/06**



Source: DIOC 2005/06 and ILO Laborsta

### 3.3 The gender dimension of the “brain drain”

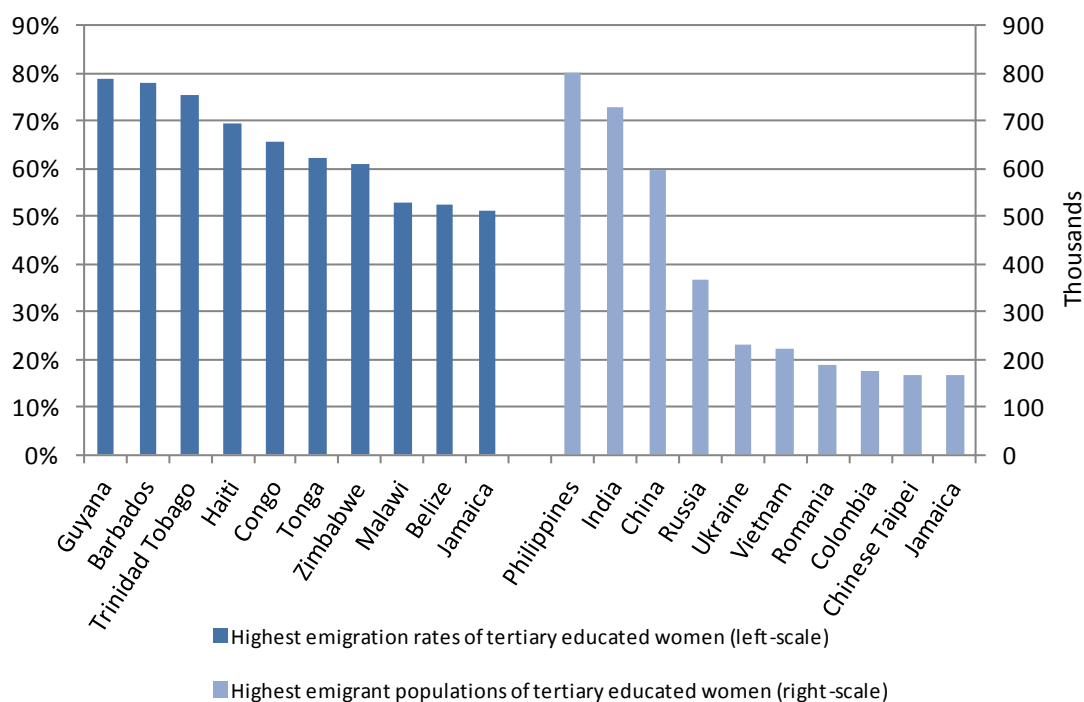
70. The observed increases in the immigration of high-educated women from non-OECD countries, in a context where women still face an unequal access to tertiary education in many less developed countries, seem to provide evidence of the overrepresentation of women in the “brain drain”. Previous studies (e.g. Dumont *et al.* 2010) have shown that on average, circa 2000, the emigration rate of high-educated women was higher than for men.

71. The largest populations of high-educated migrant women in the OECD come from the Philippines, India and China, followed by Russia and Ukraine (Chart 17). As mentioned previously, increases between 2000 and 2005/06 were particularly large for India-born and China-born women.

72. The highest emigration rates of the highly educated are registered for women originating from the Caribbean and from Congo, Zimbabwe and Malawi (Chart 17). For about half of the countries of origin, the “brain drain” of women is higher than for men. The gender gap is especially pronounced for Papua New Guinea, Sierra Leone, Malawi and Zimbabwe (see Table A.9 and Table A.10).



**Chart 17: 10 main countries of origin and highest emigration rates for high-educated foreign-born women aged 15 and over in the OECD, 2005/06**



Source: DIOC 2005/06 and Barro and Lee (2010)

73. Previous analyses have demonstrated that circa 2000 poorer countries were relatively more affected by the emigration of high-educated women (see Dumont *et al.* 2007). One possible explanation is that in the poorest countries, the opportunities for high-educated women are much narrower than for men because of higher gender inequalities, leading to higher potential returns from migration for women.

74. Data for 2005/06 confirm this finding and even show a worsening of the situation. The emigration rate of high-educated women coming from low-income countries (excluding India) increased to 9.4% in 2005/06 compared with 7.5% in 2000 (see Table 12). Regarding the large or main countries of origin, emigration rates of high-educated women increased mainly from Morocco (17%) and the Philippines (10%), by 2 percentage points in both cases.

**Table 12: Emigration rates of women aged 15 and over by income group, 2005/06 and 2000**  
Weighted averages

	Emigrant population (thousands)	2005/06			
		Total	Emigration rates (in percent)		
			Low - educated	Intermediate- educated	High- educated
High-income: OECD	13,490	3.0	4.5	2.0	3.7
High-income: non-OECD	1,827	4.9	4.0	4.3	8.2
Upper-middle-income	13,511	3.8	5.1	2.5	5.4
Lower-middle-income	13,205	1.4	1.0	1.2	6.4
Lower-middle-income (without China)	11,735	2.8	1.7	3.5	10.1
Low-income	3,766	0.6	0.2	0.7	6.0
Low-income (without India)	2,469	0.9	0.4	1.5	9.4
<b>Total</b>	<b>45,799</b>	<b>1.9</b>	<b>1.4</b>	<b>1.6</b>	<b>5.1</b>

	Emigrant population (thousands)	2000			
		Total	Emigration rates (in percent)		
			Low - educated	Intermediate- educated	High- educated
High-income: OECD	12,507	2.9	4.4	2.1	2.7
High-income: non-OECD	1,616	4.5	5.8	6.0	12.1
Upper-middle-income	9,959	3.0	4.0	1.9	3.7
Lower-middle-income	9,704	1.2	0.8	1.0	6.0
Lower-middle-income (without China)	8,616	2.4	1.5	3.2	8.6
Low-income	2,715	0.5	0.2	0.7	5.0
Low-income (without India)	1,782	0.7	0.4	1.5	7.5
<b>Total</b>	<b>36,500</b>	<b>1.6</b>	<b>1.3</b>	<b>1.5</b>	<b>3.9</b>

*Note:* Weighted averages. Income groups are classified according to the World Bank classification of economies based on the 2005 GNI per capita: low-income USD 955 or less, lower-middle-income USD 996 – USD 3 945, upper-middle-income USD 3 946 – USD 12 195 and high-income USD 12 196 and more. Former USSR and Former Yugoslavia are classified in “Upper-middle-income” countries, the aggregated category North and South Korea to “High-income: OECD”. Please refer to Table A.7 for non-weighted averages.

*Source:* DIOC 2000, DIOC 2005/06 and Barro and Lee (2010);

## Conclusion

75. The new Database on Immigrants in OECD Countries (DIOC 2005/06) gives an opportunity to shed light on changes of migrant populations in OECD countries by destination and origin, with a special focus on migrants’ skills and migrant women. The results presented in this document show that international migration to the OECD increased in the early 2000s. Between 2000 and 2005/06, the migrant population in OECD countries increased by 23% to reach 91 million or 10.8% of the OECD population aged 15 and over.

76. Compared with previous migration waves, a higher proportion of recent migrants were highly educated, notably among migrant women (33% in 2005/06). Migration within the OECD remains important and is increasing, but less than migration from other parts of the world. Migration from Latin American countries grew particularly rapidly over the period considered and exceeded migration originating from Asia.

77. Despite noticeable improvements in the labour market outcomes of immigrants, important gaps remain compared with the native-born, notably for the highly educated. Overqualification of immigrants appears to be an issue of increasing concern with about a third of employed immigrants holding a university degree working in intermediate or low-skilled jobs (+4 percentage points compared with 2000). This phenomenon is even more distinct for high-educated migrants originating from low-income countries. This clearly appears as a paradox at a time when OECD destination countries are putting in place more selective migration policies to attract skilled workers.

78. Recent migration trends have affected some countries more than others, but in most cases, migration increased more rapidly than the total population in origin countries. As a result, total weighted emigration rates to the OECD increased from 1.6% in 2000 to 1.9% in 2005/06. Weighted emigration rates of the highly

educated increased from 3.7% in 2000 to 4.8% in 2005/06. Small and least developed countries were the most affected by the growing brain drain.

79. To compile the Database on Immigrants in OECD Countries (DIOC) for 2005/06, a methodology was developed, which will enable to update these data for mid-decade census years when population censuses are not available in all countries. Despite data limitations, the first results presented in this document show that this is not only feasible, but highly desirable taking into account the pace at which international migration is changing and the possible consequences of these changes for both origin and destination countries. Based on this experience, it appears necessary to put in place a continuous data collection procedure to update, every five years, key information on immigrant characteristics by country of birth, starting with the next decennial census round in 2010/11.

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## A.1: QUINQUENNIAL UPDATE OF DIOC: SOME METHODOLOGICAL ISSUES

Estimating the size of the immigrant population in a country and obtaining representative information on its characteristics can generally be achieved using census data (or population registers). In a context of rapidly evolving migration flows, however, population censuses – taken every 10 years in most cases – are not sufficient to obtain regular updates on immigrant populations.

The Database on Immigrants in OECD Countries (DIOC, OECD 2008), which contains information about immigrants living in the OECD by country of birth for the years 2000/01, is mostly based on censuses. Updating the database for the years 2005/06, before the next round of decennial censuses in 2010/11, would help to gain a better understanding of the changes in the composition of migration flows towards OECD countries that have occurred at the beginning of the 21<sup>st</sup> century. It is also expected that this exercise will serve as a test for the feasibility of a collection system for a more permanent database, to be updated every 5 years, which would clearly improve the situation compared to what is currently available.

About half of the OECD countries have a quinquennial population census, a population register or annual large-scale surveys, which can be used to collect detailed information on migrants. The OECD's Database on Immigrants in OECD Countries (DIOC 2000), which is mainly based on population censuses is therefore updated for the year 2005/06 with data from population registers and censuses for the countries for which this information is available more frequently, every five years. For others, the only solution is to rely on national labour force survey data, which usually include the basic requested information, but in lesser detail due to small sample sizes. This was the case for Germany and the Netherlands, as well as to obtain information on duration of stay (not available in the census) for about ten countries. For eight OECD countries, no adequate data were available to update the database: Chile, Estonia, Hungary, Iceland, Slovenia, Slovak Republic, South Korea and Turkey.

### 1. Methodology of DIOC 2005/06

#### *Limitations of census-based data*

Censuses and population registers are one of the best data sources for small population groups, such as foreign-born by origin. Nevertheless, the data may be subject to some limitations.

Firstly, persons born abroad as nationals of their country of residence may be included in the immigrant population. This would be only an issue for some countries or regions with large repatriate communities (e.g. France or the former USSR) or with large expatriate communities (e.g. United Kingdom). Another issue regarding the country-of-birth variable arises regarding the non-exhaustive list of countries surveyed. In cases where labour force survey data was used, the list of countries of origin was limited due to the application of publication thresholds.

Secondly, there is a certain degree of uncertainty on the completeness and cross-country variation in coverage for some specific groups such as undocumented migrants, short-term migrants or asylum seekers, in particular in countries where refugees do not live in fixed accommodation but in refugee camps. According to UNHCR statistics from 2009, around 2.5 million refugees (including people in a refugee-like situation) live in such camps. These persons are, a priori, not covered in the database.

Thirdly, it is important to emphasize that DIOC only contains information on migrant populations. Consequently, the information on international migration in the database represents historical patterns of migration and not actual migration flows.

Finally, education data do not allow us to control for the geographic location where the education or training was received. For that reason, one should be cautious when using the place of birth to infer the impact of international migration on countries of origin. Other authors have tried to use age at entry to infer where the

diploma was obtained, but their results are quite sensitive to the cut-off age used to identify where the last diploma was obtained.

### *Limitations of labour force survey data*

The main issue in terms of comparability between DIOC 2000 and DIOC 2005/06 derives from the fact that for 12 out of 25 countries, hosting about 19% of migrants, the data source is different in 2000 and 2005/06<sup>21</sup>. Comparisons between labour force survey and census data around 2000 show some discrepancies in foreign-born population estimates. The number of migrants tends to be under estimated in the former data source compared with the latter. The gap is particularly large in some southern European countries where migration is relatively recent and rapidly increasing in the early 2000s. Since 2000, however, the reliability and the coverage of labour force surveys for immigrants have greatly improved.

Using a survey instead of a census is however not innocuous, especially for a sub-population for which the coverage is not necessarily as good as that of the general population. The use of labour force survey data to update DIOC represents a methodological challenge, especially as the main objective of this update is to analyse changes between 2000/01 and 2005/06. This note discusses some of the issues regarding the reliability of the EU-LFS to better understand the implications of using labour force surveys for a large number of countries for the general consistency of the database.

## **2. Survey accuracy in theory**

The issues with using survey data to make inference about the population are very well known, and described at length, for example, in the Eurostat publications on the quality of the EU LFS (Eurostat 2007, 2008 deal precisely with quality for the years 2005 and 2006).

The accuracy of a survey estimate compared to the “true” value is affected by two types of errors: sampling errors (which only pertains to sample survey), and non-sampling errors, which include coverage errors, measurement errors, processing errors, non-response errors and model assumption errors. Non-sampling errors exist in both sample surveys and complete enumeration surveys (e.g. censuses).

### *Sampling errors*

The sampling error depends on the sample design and the sample size. For a simple random sample, the standard error of the mean for a given variable  $x$  is given by

$$SE(\bar{x}) = s/\sqrt{n}$$

where  $s$  is the sample standard deviation of  $x$  and  $n$  is the size of the sample. For a binary variable of proportion  $p$  in the sample, this can be expressed as

$$SE(p) = \sqrt{p(1-p)/(n-1)}.$$

If  $x$  is normally distributed, the 95% confidence interval for  $p$  is  $[p \pm 1.96 \times SE(p)]$ . The minimal sample size needed in order to obtain a 95% confidence interval for  $p$  of  $[p \pm z]$ , with  $z$  being the desired level of precision, would therefore be  $\tilde{n} = p(1-p)(1.96/z)^2 + 1$ .

The labour force survey, however, is not a simple random sample. The sampling designs in the European Labour Force Survey are extremely varied. Most National Statistics Offices use some kind of multi-staged stratified random sample design, especially those that do not have central population registers available. Moreover, the final sampling unit is not the same in all countries: it can be households, dwellings/addresses or persons. As a result, given the complex sampling designs, it would be complicated to reconstitute the confidence intervals of a given variable for each survey. However, the sampling error for a simple random

<sup>21</sup> For Germany and the Netherlands, DIOC 2000 data relied already on national labour force survey data.

sample can nevertheless serve as an approximate guideline to assess the sampling error of the labour force surveys. Other things being equal, the sampling error depends on the sample size, which varies in the EU-LFS from less than 5 000 for the smallest countries to around 130 000 for some of the biggest countries (Germany, Italy and Spain). The measured sampling error depends not only on the sample design and sample size, but also on the estimation procedures implemented to ensure agreement of sample-based estimates of the population with those obtained from demographic sources. These procedures tend to improve the reliability of sampled-based estimates. For a characteristic such as “immigrant”, which may tend to be geographically localised, the “design effect”, that is, the ratio of the variance of an estimate relative to that obtained from a simple random sample of the country as a whole, may be quite large.

The Eurostat reports cited above provide confidence limits for some employment-related statistics derived from the EU-LFS, which are valuable information to compare the sampling accuracy across countries. The confidence limits reported are particularly large for some of the new member countries. If we are interested, for example, in the proportion of foreign-born in the population, we can expect a sampling error of the same order of magnitude as that for the unemployment rate. In the case of France, if we use the confidence limits of the unemployment rate, the share of foreign-born among the 15+ population - which is estimated at 11.6% using the 2005 LFS - has 95% confidence limits of about  $\pm 0.3\%$ .

### *Non-sampling errors*

Non-sampling errors are a major concern in the use of the EU-LFS to estimate the size and characteristics of the foreign-born population. Among the various sources of non-sampling errors listed above, several may be exacerbated in the case of the foreign-born population.

A first source of error is because the target population sometimes explicitly excludes foreigners who have been living in the country for less than one year, or who intend to stay less than one year. This leads to an underestimation of the foreign-born population and bias the measurement of variables correlated with the duration of stay. Second, since foreign-born can be overrepresented in collective dwellings in some countries, and since those dwellings are not surveyed in the EU-LFS, this can lead to slightly undercount the foreign-born population, although this is unlikely to be a major source of error.

For countries without population registers, another issue is that the sampling frame should be updated between two censuses to take into account changes in the size (and demographic composition) of the primary sampling units. This requires additional information, or some modelling. If this is not appropriately done, there is a risk of undercoverage of areas where new immigrants settle (note that this issue is distinct from weighting errors).

Measurement errors are also more likely for foreign-born persons, since the questionnaire might not accommodate some of their characteristics (e.g. education variables), or because language difficulties might lead the foreign-born to resort more often to proxy interviews. Non-response errors might also be more prevalent for the foreign-born for various reasons: recent or illegal migrants might be more reluctant to participate in surveys. Classification issues for some variables (e.g. education again) might also lead to non-response for the foreign-born.

Finally, the computation of weights generally does not take into account migration variables. Weighting variables common to almost all countries are sex, age and region of residence, but include citizenship or ethnic background in only seven countries. If the joint distribution of the weighting variables is sufficiently different between the native-born and the foreign-born (or between different migrant groups), excluding migration from the weighting scheme can bias mean estimates (although usually not correlation measures).

Overall, we can then suspect that non-sampling errors in the EU-LFS are significant, and likely to be more important for the foreign-born than for the native-born, and may not only concern the size of the population but also the distribution of key variables such as educational attainment. The next section attempts to evaluate the magnitude and scope of the differences between census and register figures taken from DIOC (i.e. around the year 2000) and estimates from the EU-LFS on the foreign-born population for the same years.

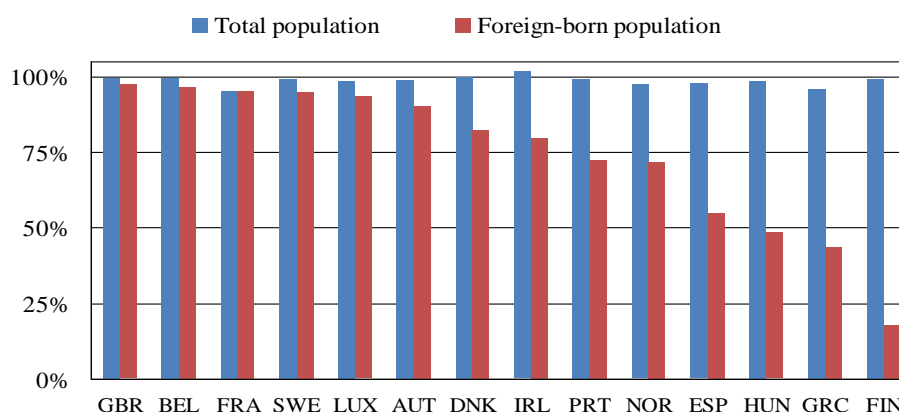
Although censuses and registers are also subject to different types of non-sampling errors, in particular potential undercoverage of the foreign-born population, they are exempt from sampling errors and considered as the reference data sources for the demographic and social characteristics of the population.

### 3. Comparing the characteristics of the foreign-born population in censuses (or registers) and labour force surveys

#### *Population figures*

First, the population figures obtained in the labour force surveys and the censuses or register are compared. Chart 1 depicts the ratio of population measured in the LFS and the census, for the same year around 2000.<sup>22</sup> For most countries, the total population figures are very close in the two data sources, with generally a slight undercoverage in the LFS. If we use the census or register data as the reference, the accuracy of the LFS for the foreign-born population figures is however not as good. For virtually all countries, the LFS underestimates the foreign-born population compared with data from censuses and registers. Although this underestimation may be considered benign for several countries (e.g. the United Kingdom, Belgium, France, Sweden and Luxembourg), the results are alarming for some, in particular Finland, Greece, Hungary and Spain, for which the LFS seems to capture only a small fraction of the actual foreign-born population.

**Chart 1. Comparison of total and foreign-born population in LFS and DIOC 2000 (ratio LFS/DIOC)**

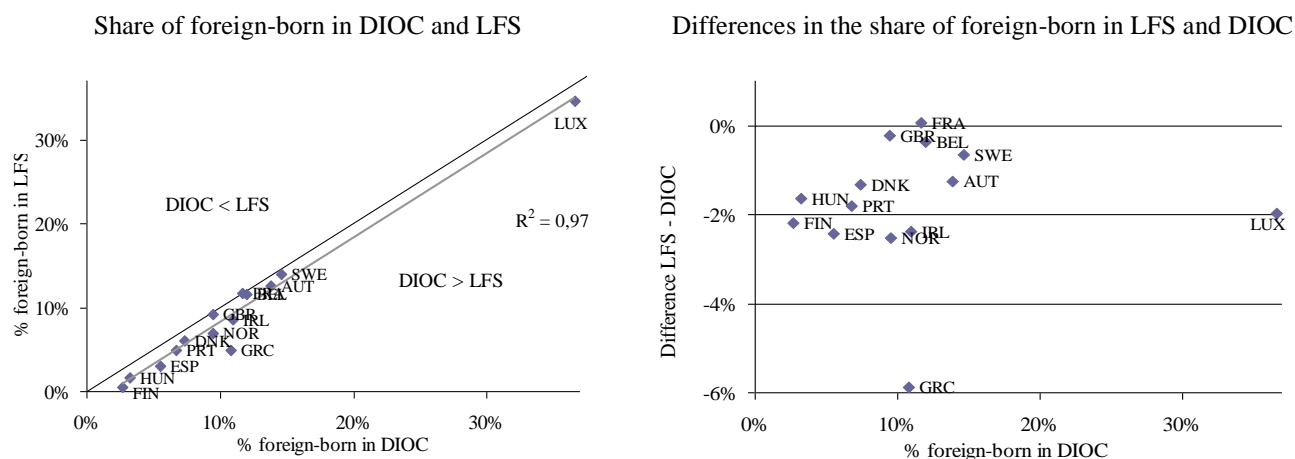


These large differences in population figures for the foreign-born in most countries between the LFS and census and register data should be kept in mind when comparing the share for the foreign-born in the population between the two sources. Indeed, as shown in Chart 2, while the cross-country comparison of foreign-born shares leads to a “relatively” good fit ( $R^2=97\%$ ), the differences in shares are very large for some countries (Greece, Norway, Ireland, Spain, Finland, etc.).

<sup>22</sup>

The census and register data are taken from the DIOC. See the methodological appendix in OECD (2008) for the census year or register reference date of each country.



**Chart 2. Share of the foreign-born in the population, comparison between DIOC and LFS in 2000**

Since one of the main objectives of DIOC is to gather information on immigrants by country of birth, it is useful to compare the population figures by country of birth between LFS data and DIOC. Of course, the LFS has a much lower level of detail on this variable than censuses and registers, but the main countries of origin *should* be appropriately represented, at least, in the countries where the foreign-born population is sizeable.

A relatively good example of this is France. Despite the absence of several key origin countries from the detailed list of countries of birth in the LFS because they are aggregated with other countries in the national questionnaire,<sup>23</sup> the survey does a pretty good job at estimating the size of the most important foreign-born communities. For the 12 most important origin countries identified in both the census and the LFS, the average error for the population size is about 9% in the 1999 LFS compared to the 1999 census (see Chart 3). The estimates happen to be more precise in the case of the “traditional” origin countries (error less than 2% for Algeria, Morocco and Italy, 3% for Spain, 5% for Tunisia and 7% for Portugal) than for the neighbouring European countries for which migration flows are more “bidirectional” (error of 12% for Germany, about 20% for Belgium and Switzerland and 27% for the United Kingdom).

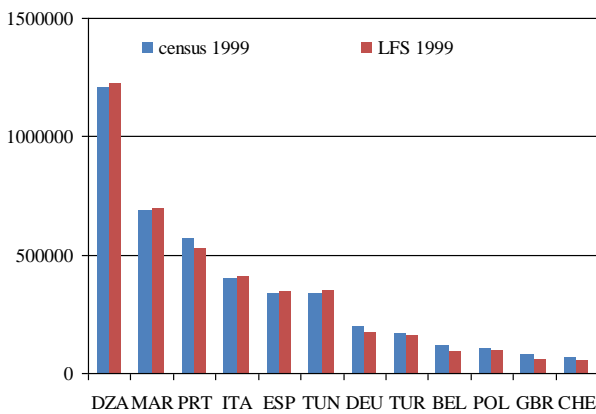
For other countries for which the comparison was done, for instance Spain, Austria and Belgium, the errors in population estimates in the labour force surveys are much larger. For Spain, the average error for the 12 main origin countries is more than 40% and the LFS does not allow identifying separately 5 of the 12 most important origin countries according to the census (Ecuador, Colombia, Venezuela, Peru and Cuba). This latter issue is certainly at least as problematic as the large margin of error for the countries that are identified. There is also a large undercount of individuals born in the main country of origin (Morocco) in the LFS, compared to the census, probably in part due to the selection on duration of stay in the LFS.

For Austria and Belgium, the margin of error is around 15%, with fewer cases of large errors than for Spain. For Austria, all the 12 main origin countries of the census are correctly identified in the LFS (although not necessarily in the correct order), and for Belgium, only one is missing in the LFS (RD Congo, arguably a problematic omission in the case of Belgium).

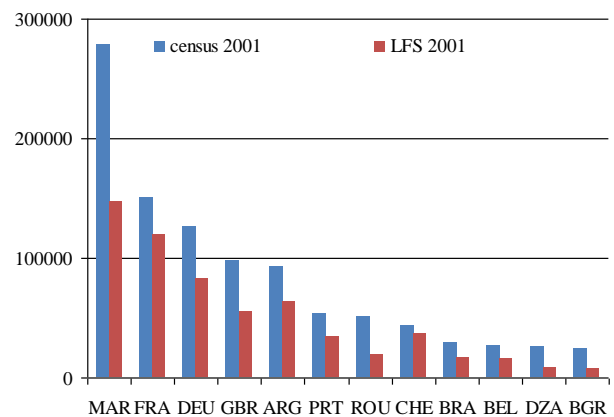
<sup>23</sup> This is the case for Vietnam and Senegal, respectively 10<sup>th</sup> and 12<sup>th</sup> most important origin countries of immigrants in France according to the census.

**Chart 3. Comparison of the population from the 12 main origin countries between Census data and LFS**

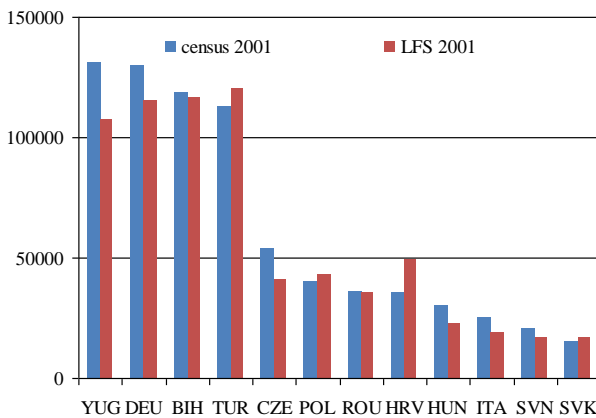
France



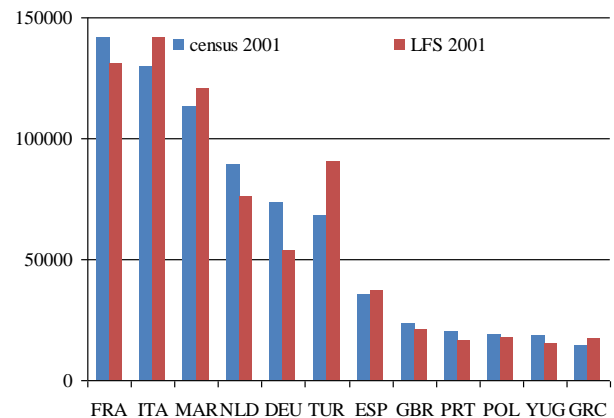
Spain



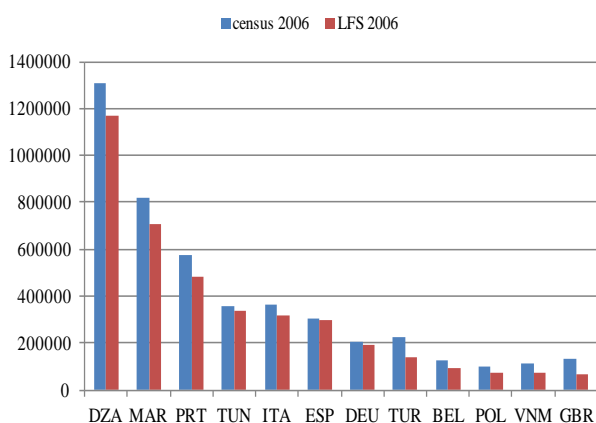
Austria



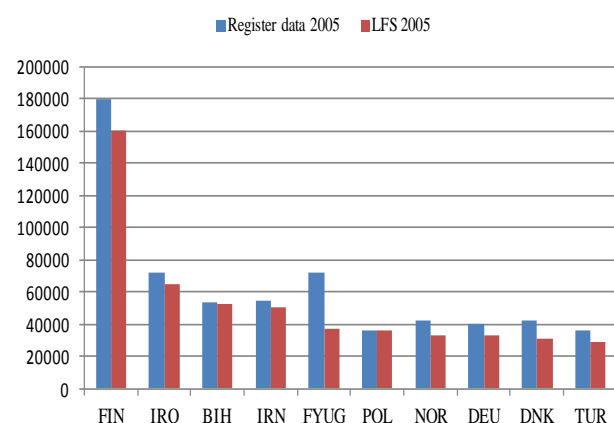
Belgium



France



Sweden



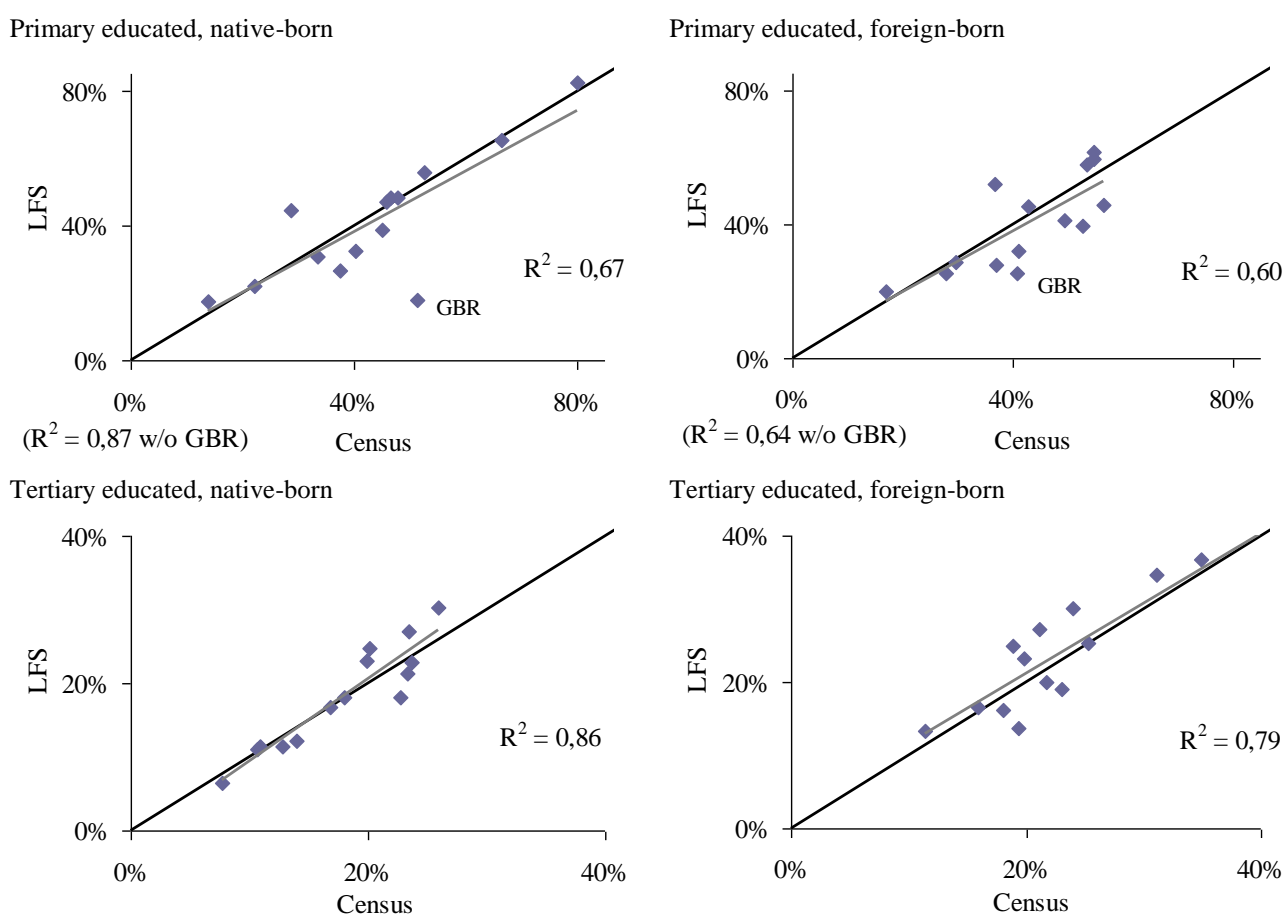
***The share of primary and tertiary-educated foreign-born and native-born***

A key variable in the DIOC is education because the database aims in particular at getting a more accurate view of the emigration of highly-educated persons from developing or emerging countries to OECD countries. Since the accuracy of global brain drain estimates by country of birth depends on the accuracy of

estimates of the distribution of education of immigrants in each country of destination, it is therefore important to evaluate how the LFS fares in this dimension.

Comparing the distribution of the native-born and foreign-born populations by educational attainment in censuses and LFS reveals significant differences for several countries. Concerning the tertiary-educated, while the overall census vs. LFS comparison achieves a relatively good fit, this fit is somewhat better for the native-born than it is for the foreign-born (Chart 4). Although this is not visible in the chart, the difference in the share of the foreign-born who are tertiary educated between the two data sources is pretty large for countries like Portugal, Finland, Spain and Denmark. For the primary educated, the overall fit is not as good as for the tertiary educated. For the native-born, excluding the United Kingdom from the sample leads to a fit as good as that obtained for the tertiary educated. This is however not the case for the foreign-born, for which the gap between the census and LFS measures is large for several countries apart from the United Kingdom (e.g. Luxembourg, Finland, Denmark, Hungary, Spain).

**Chart 4. Share of primary and tertiary educated among the native-born and the foreign-born, in the census and LFS data for 14 EU countries, population 15+**



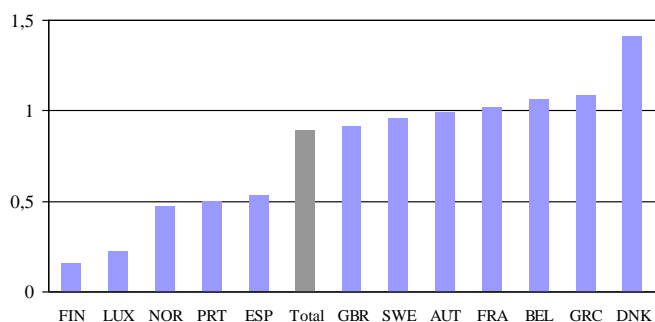
***Estimates aggregated by country of origin***

One of the main strengths of the DIOC is the ability, through the aggregation of data from destination countries, to obtain information on immigrants by country of origin. Here again, the comparison of census vs. LFS figures reveals striking discrepancies. The population of immigrants born in Morocco, for example, is severely underestimated in the LFS of several countries (Finland, Luxembourg, Norway, Portugal), while it appears to be much less often overestimated (Denmark). Aggregating the data for the 12 European countries included in the comparison, the number of Moroccan immigrants is relatively well estimated in the LFS (89%

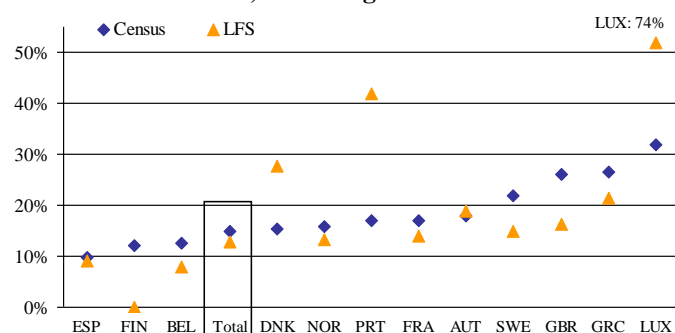
of the aggregated census figure) thanks to the accurate figures provided by the French and Belgian surveys, which counterbalance the poor performance of the Spanish one (Chart 5).

Turning to an even smaller subgroup, for example the tertiary educated Moroccan immigrants, we logically observe a larger variance across countries. While there is a broad agreement between census and LFS figures when the average over 12 countries is considered, there are large inconsistencies when we look at individual figures (Chart 6). For example, using the LFS leads to a steep overestimation of the share of tertiary educated among Moroccan immigrants in Portugal, Denmark or Luxembourg, while it underestimates it in Finland, Sweden or the United Kingdom.

**Chart 5. Ratio of population estimates (LFS/DIOC) for the Moroccan immigrants in 13 EU countries in 2000**



**Chart 6. Share of tertiary-educated Moroccan immigrants in 13 EU countries, according to DIOC and LFS 2000**



### *What can be done?*

In the above-described comparisons between Census data and national labour force data, the differences occur mainly for southern European OECD countries and Nordic countries. For the latter, register data is available around the year 2005 including all necessary information for the update of DIOC. Regarding the estimates of south European labour force survey data and the discrepancies to Census data, we can assume that the coverage of the labour force survey data improved largely from 2000 to 2005.

To address this potential underestimation problem, total foreign-born populations based on labour force surveys were adjusted to the more precise OECD estimates of the populations of foreign-born persons for the year 2005/06 (International Migration Outlook 2010).

Nevertheless, by using the databases DIOC 2000 and DIOC 2005 the potential issues due to different data sources in 2000 and 2005 have to be kept in mind by analysing the data over time.

Table A.2: Data sources and variables included in DIOC 2005/06

Country	Source	Country	Source
Australia	Census 2006	Japan	Census 2005, DIOC 2000
Austria	Microcensus 2004/2005/2006	Luxembourg	Labour Force Survey 2004/2005/2006
Belgium	Labour Force Survey 2004/2005/2006	Mexico	Labour Force Survey 2005/2006/2007
Canada	Census 2006	Netherlands	Labour Force Survey 2004/2005/2006
Czech Republic	Register data 2005, Census 2001, European Labour Force Survey 2005	New Zealand	Census 2006
Denmark	Population Register 2005	Norway	Population Register 2005
Finland	Population Register 2005	Poland	European Labour Force Survey 2004/2005/2006
France	Census 2006	Portugal	Labour Force Survey 2005/2006
Germany	Microcensus 2005/2006/2007	Spain	Labour Force Survey 2004/2005/2006
Greece	European Labour Force Survey 2004/2005/2006	Sweden	Population Register 2005
Ireland	Census 2006	Switzerland	Labour Force Survey 2004/2005/2006
Israel	Labour Force Survey 2005/2006	United Kingdom	Labour Force Survey 2007
Italy	Labour Force Survey 2004/2005/2006	United States	American Community Survey (ACS) 2005-2009

Note: Data on Israel and Chile are included in DIOC 2005/06, but they could not be taken into account in the analyses of this paper.

Set 1 - By detailed destinations and aggregated origins							
File reference	1.1	1.2	1.3	1.4	1.5	1.6	1.7
Main theme	Education	Age	Citizenship	Duration of stay	Labour Force Status	Occupation (1 digit)	Occupation (2 digits)
	- Country of residence	- Country of residence	- Country of residence	- Country of residence	- Country of residence	- Country of residence	- Country of residence
	- Country or region of birth	- Country or region of birth	- Country or region of birth	- Country or region of birth	- Country or region of birth	- Country or region of birth	- Country or region of birth
Variables included	- Sex	- Sex	- Sex	- Sex	- Sex	- Education	- Education
	- Education	- Education	- Education	- Education	- Education	- Occupation (1-digit)	- Occupation (2-digits)
		- Age	- Citizenship	- Duration of stay	- Labour force status		
Reference population	All 15+	All 15+	All 15+	All 15+	All 15+	15+ employed	15+ employed

Set 2 - By detailed origins							
File reference	2.1	2.2	2.3	2.4	2.5	2.6	
Main theme	Education	Age	Citizenship	Duration of Stay	Labour Force Status	Occupation	
	- Detailed country of birth	- Detailed country of birth	- Detailed country of birth	- Detailed country of birth	- Detailed country of birth	- Detailed country of birth	- Detailed country of birth
	- Regions of destination	- Sex	- Sex	- Sex	- Sex	- Sex	- Sex
Variables included	- Sex	- Education	- Education	- Education	- Education	- Education	- Education
	- Education	- Age	- Citizenship	- Duration of stay	- Labour force status	- Occupation (2-digits)	
Reference population	All 15+	All 15+	All 15+	All 15+	All 15+	15+ employed	





Table A.3: Characteristics of foreign-born by destination country and main countries of origin, 2000 and 2005/06 (cont.)

Country of residence	Place of birth and main countries of origin	Population				Educational attainment						Women		Young persons aged 15-24	
		2005/06		2000		2005/06			2000			2005/06	2000	2005/06	2000
		(thousands)	(%)	(thousands)	(%)	Low-educated (%)	Medium-educated (%)	High-educated (%)	Low-educated (%)	Medium-educated (%)	High-educated (%)	(%)	(%)	(%)	(%)
United States	Native-born	199,698	83.9	185,775	85.5	18.1	51.8	30.0	20.3	52.2	27.4	51.5	51.9	18.7	16.3
	Foreign-born	38,260	16.1	31,390	14.5	33.0	37.6	29.4	39.2	34.7	26.1	49.8	50.4	12.9	14.9
	Mexico	10,738	28.1	8,251	26.3	59.8	33.4	6.8	69.9	24.7	5.4	43.7	44.3	17.0	21.9
	Philippines	1,662	4.3	1,357	4.3	10.7	35.6	53.8	14.8	36.6	48.6	58.5	58.1	9.1	10.8
	India	1,411	3.7	958	3.1	9.7	16.7	73.5	12.8	18.1	69.1	45.7	45.9	9.1	12.0
	Puerto Rico	1,317	3.4	1,297	4.1	38.5	42.8	18.7	46.0	39.2	14.8	52.9	52.9	9.5	12.1
	China	1,235	3.2	1,130	3.6	25.6	27.6	46.7	29.2	25.8	45.0	52.5	52.0	9.0	9.4
United Kingdom	Native-born	44,078	89.2	43,181	90.6	43.2	30.2	26.6	51.2	28.7	20.1	51.3	51.9	15.8	15.3
	Foreign-born	5,329	10.8	4,503	9.4	28.3	26.1	45.6	40.6	24.5	34.8	52.0	53.3	13.2	13.4
	India	538	10.1	454	10.1	27.5	22.1	50.4	51.2	15.4	33.3	49.7	52.0	5.0	5.5
	Ireland	402	7.5	525	11.7	33.1	26.0	40.9	56.4	20.8	22.7	57.1	56.3	4.4	5.4
	Pakistan	267	5.0	302	6.7	49.9	22.3	27.7	67.0	14.5	18.5	49.1	49.2	10.1	13.3
	Germany	242	4.5	231	5.1	33.6	27.6	38.7	34.0	35.4	30.6	58.7	59.8	19.3	21.0
	Poland	241	4.5	59	1.3	16.0	38.3	45.7	35.0	27.3	37.8	45.0	53.1	25.9	6.2
OECD	Native-born	750,113	89.2	709,855	90.5	33.7	42.7	23.6	37.6	41.5	20.9	51.7	51.8	17.0	17.1
	Foreign-born	91,176	10.8	74,197	9.5	35.6	36.2	28.2	41.8	33.8	24.4	50.8	51.0	12.4	13.2
	Mexico	10,780	11.8	8,328	11.2	66.0	20.6	13.4	69.6	24.7	5.7	44.2	44.4	16.6	21.9
	United Kingdom	3,433	3.8	3,225	4.4	40.6	30.7	28.7	27.0	38.4	34.7	50.6	51.7	5.5	5.6
	Germany	3,015	3.3	2,884	3.9	24.7	55.2	20.1	27.1	44.3	28.7	56.4	57.4	10.8	11.6
	Poland	2,792	3.1	2,103	2.8	27.4	58.6	14.0	31.3	47.2	21.5	54.5	55.7	13.9	11.2
	India	2,759	3.0	1,951	2.6	16.4	20.0	63.5	26.5	20.3	53.2	46.5	47.7	9.8	10.7

Notes: "-" not significant; "." not available

Source: DIOC 2000 and DIOC 2005/06



Table A.4: Characteristics of the foreign-born population aged 15 and over by destination country and duration of stay, 2005/06

Country of residence	Up to 5 years				5 - 10 years				More than 10 years				Native-born			
	Total (thousands)	Women (%)	Low-educated (%)	High-educated (%)	Total (thousands)	Women (%)	Low-educated (%)	High-educated (%)	Total (thousands)	Women (%)	Low-educated (%)	High-educated (%)	Total (thousands)	Women (%)	Low-educated (%)	High-educated (%)
AUS Australia	610	51.4	10.8	50.8	386	52.4	14.5	44.6	2,943	51.0	29.2	29.7	10,584	51.4	32.4	24.1
AUT Austria	204	56.2	34.8	20.0	108	58.4	33.4	22.2	784	51.9	38.4	14.2	5,889	51.5	27.6	13.8
BEL Belgium	181	54.2	40.6	31.4	138	51.4	44.7	27.8	713	52.3	56.2	18.6	7,447	51.4	43.1	23.9
CAN Canada	886	52.9	16.4	59.8	744	52.1	17.5	53.8	4,205	52.1	23.1	43.0	19,540	51.2	24.6	37.5
CHE Switzerland	310	51.6	26.7	42.9	164	55.0	40.1	28.3	835	47.6	46.0	16.2	4,537	51.3	22.9	21.6
DEU Germany	962	53.9	36.5	23.6	1,321	53.6	46.4	17.0	7,112	49.2	44.8	13.4	61,117	51.6	24.9	19.4
DNK Denmark	74	51.6	28.9	31.8	58	54.4	38.7	24.7	138	49.8	34.6	25.8	4,053	50.8	35.4	23.6
ESP Spain	2,354	51.0	45.6	21.0	651	47.5	48.8	21.0	467	47.9	47.5	27.2	32,845	51.1	61.4	21.1
FIN Finland	50	50.3	b	b	30	53.8	53.5	21.3	82	49.3	39.3	23.7	4,199	51.5	161.4	121.1
FRA France	673	53.4	37.5	34.8	438	52.9	42.6	29.2	3,882	50.9	51.3	20.0	43,718	52.4	37.8	22.0
GBR United Kingdom	1,568	48.3	20.8	51.7	809	50.4	27.6	48.0	2,901	53.4	33.0	44.2	44,059	51.3	42.7	27.6
GRC Greece	208	55.0	48.0	13.1	343	51.4	50.5	12.2	525	50.7	41.1	17.9	8,515	51.3	50.2	15.5
IRL Ireland	162	45.6	17.0	45.6	59	48.6	24.1	49.2	99	53.7	30.9	40.7	2,782	50.8	43.5	27.3
ITA Italy	661	59.2	54.1	10.1	633	50.2	49.8	10.4	1,144	50.6	49.1	12.1	46,974	51.8	58.6	9.0
LUX Luxembourg	27	49.9	24.9	47.9	25	49.6	33.8	37.2	94	50.6	50.8	18.2	225	50.1	43.1	14.8
NLD Netherlands	163	58.3	33.0	25.3	212	50.8	37.4	21.9	1,096	50.9	37.4	20.3	11,550	50.6	38.3	23.0
NOR Norway	94	52.1	63.1	18.8	43	55.2	36.7	30.7	180	50.0	33.8	31.1	3,379	50.8	31.7	23.6
NZL New Zealand	235	52.1	8.2	40.1	110	52.8	11.8	38.6	388	51.7	22.1	27.8	2,224	52.0	27.9	22.6
POL Poland	42	57.5	5.1	45.1	26	51.4	12.9	36.2	774	59.7	49.9	12.0	31,159	52.3	27.7	12.9
PRT Portugal	131	52.5	53.0	12.0	79	53.2	55.3	16.4	398	52.2	53.5	22.1	8,271	52.1	77.9	9.2
SWE Sweden	233	49.7	24.4	42.7	113	52.7	29.7	32.1	719	52.5	28.3	21.9	6,464	50.5	23.5	24.5
USA United States	6,351	47.2	35.1	30.0	6,364	48.5	35.4	28.2	25,849	51.0	31.5	30.3	201,562	51.5	17.3	31.0
<b>Total</b>	<b>16,179</b>	<b>50.2</b>	<b>33.9</b>	<b>32.3</b>	<b>12,854</b>	<b>50.2</b>	<b>36.5</b>	<b>28.5</b>	<b>55,326</b>	<b>51.1</b>	<b>35.7</b>	<b>27.1</b>	<b>561,093</b>	<b>51.6</b>	<b>33.7</b>	<b>23.7</b>

Note: "b": No information on the educational attainment level is available for immigrants with a duration of stay of less than five years for Finland.

Source: DIOC 2005/06







**Table A.7: Emigration rates by skill level, income group of origin countries and regions of origin, 2005/06 and 2000**

Non-weighted averages

	Emigrant population (in thousand)	2005/06			
		Total	Emigration rates (in percent)		
			Low - educated	Intermediate- educated	High- educated
High-income: OECD	25,155	5.7	7.1	4.6	8.1
High-income: non-OECD	3,404	15.8	6.6	5.5	20.0
Upper-middle-income	26,468	8.0	5.3	3.8	12.3
Lower-middle-income	26,309	10.6	8.9	8.0	18.7
Low -income	8,319	2.2	0.9	2.7	17.4
Africa	8,947	4.9	1.2	2.4	16.1
Asia	19,510	2.2	1.0	1.9	9.5
Europe	34,281	9.4	10.8	5.5	11.8
North America	2,075	2.2	3.7	1.3	3.7
Oceania	1,221	25.3	20.7	13.1	25.5
South America & Caribbean	24,786	16.3	9.3	11.3	25.0
<b>Total 2005/06</b>	<b>90,818</b>	<b>9.4</b>	<b>5.3</b>	<b>4.9</b>	<b>15.4</b>
Total 2000	72,381	10.2	5.0	4.5	13.4

Note: Income groups are classified according to the World Bank classification of economies based on the 2005 GNI per capita: low income \$955 or less, lower middle income \$996 - \$3,945, upper middle income \$3,946 - \$12,195 and high income \$12,196 and more.

Source: DIOC 2000, DIOC 2005/06 and Barro and Lee (2010)

**Table A.8: Emigration rates of women by skill level and income group of origin countries, 2005/06 and 2000**

Non-weighted averages

	Emigrant population (in thousand)	2005/06			
		Total	Emigration rates (in percent)		
			Low - educated	Intermediate- educated	High- educated
High-income: OECD	13,490	5.8	7.2	4.7	8.2
High-income: non-OECD	1,827	13.6	5.8	4.9	18.5
Upper-middle-income	13,511	9.4	6.0	4.3	13.4
Lower-middle-income	13,205	10.8	8.1	8.1	20.9
Low -income	3,766	2.1	0.1	3.6	20.7
<b>Total 2005/06</b>	<b>45,799</b>	<b>8.9</b>	<b>5.3</b>	<b>5.2</b>	<b>17.2</b>
Total 2000	36,500	8.2	5.0	4.9	15.5

Note: Income groups are classified according to the World Bank classification of economies based on the 2005 GNI per capita: low income \$955 or less, lower middle income \$996 - \$3,945, upper middle income \$3,946 - \$12,195 and high income \$12,196 and more.

Source: DIOC 2000, DIOC 2005/06 and Barro and Lee (2010)

Table A.9: Total emigration rates and emigration rates of high-educated, 2000 and 2005/06

Country of origin		Total							
		2005/06				2000			
		Emigrant population		Emigration rate		Emigrant population		Emigration rate	
(thousands)	High-educated (%)	Total (%)	High-educated (%)	(thousands)	High-educated (%)	Total (%)	High-educated (%)		
ABW	Aruba	7.7	49.7	8.8	..	5.7	47.0	7.5	..
AFG	Afghanistan	257.6	22.6	1.9	6.1	132.3	20.2	1.2	3.6
AGO	Angola	185.3	21.6	2.1	..	196.1	19.5	2.6	..
ALB	Albania	838.3	9.9	26.5	35.0	521.1	8.7	19.8	26.4
AND	Andorra	6.6	22.2	9.2	..	3.4	25.6	5.9	..
ANT	Netherlands Antilles	127.0	25.9	46.8	..	..	..	..	..
ARE	United Arab Emirates	22.3	39.0	0.7	1.4	14.4	24.2	0.6	1.0
ARG	Argentina	569.0	36.6	2.0	6.8	322.2	32.6	1.2	4.3
ATG	Antigua and Barbuda	21.8	34.1	28.1	..	24.3	26.6	33.2	..
AUS	Australia	320.4	47.3	1.9	2.8	289.8	42.3	1.9	2.6
AUT	Austria	424.8	31.6	5.7	12.1	368.1	27.6	5.2	11.4
BDI	Burundi	16.6	40.2	0.4	18.9	10.6	38.0	0.3	20.5
BEL	Belgium	392.0	37.5	4.3	6.5	343.0	31.0	3.9	5.3
BEN	Benin	22.0	45.4	0.5	7.8	14.3	42.2	0.4	7.6
BFA	Burkina Faso	15.3	27.0	0.2	4.1	8.3	28.5	0.1	3.2
BGD	Bangladesh	398.5	35.6	0.4	3.7	285.5	27.2	0.3	2.4
BGR	Bulgaria	328.3	38.5	4.7	10.7	150.1	31.6	2.2	4.2
BHR	Bahrain	5.7	58.3	1.1	5.4	7.2	40.2	1.5	6.4
BHS	Bahamas	33.0	38.4	12.3	23.4	30.1	29.4	12.3	19.5
BLZ	Belize	49.7	26.7	22.4	49.5	42.6	20.4	22.5	45.4
BMU	Bermuda	18.7	42.4	26.4	..	19.2	34.8	27.1	..
BOL	Bolivia	184.6	24.5	3.1	5.0	76.8	29.4	1.5	3.4
BRA	Brazil	857.5	27.0	0.6	2.6	543.9	25.9	0.4	1.8
BRB	Barbados	86.7	33.6	26.8	82.7	88.4	26.3	28.0	90.4
BRN	Brunei Darussalam	9.8	50.5	3.6	17.2	8.9	37.7	3.7	15.9
BTN	Bhutan	1.3	34.9	0.3	..	0.7	23.7	0.2	..
BWA	Botswana	5.9	41.4	0.5	5.6	4.1	37.1	0.4	4.0
CAF	Central African Republic	17.7	30.4	0.7	12.5	9.8	32.7	0.4	8.6
CAN	Canada	1,116.3	46.4	4.0	6.9	1,062.4	39.4	4.1	6.1
CHE	Switzerland	474.3	28.7	7.1	11.7	419.9	24.0	6.6	9.2
CHL	Chile	270.9	35.0	2.2	3.2	207.8	29.8	1.8	2.7
CHN	China	2,722.9	42.3	0.3	1.7	2,063.0	39.4	0.2	1.8
CIV	Côte d'Ivoire	107.0	29.6	1.0	15.8	62.6	26.4	0.6	9.0
CMR	Cameroon	111.0	42.4	1.1	17.4	58.5	41.9	0.6	15.1
COD	Congo, Dem. Rep. of	105.2	29.2	0.3	9.9	100.7	35.5	0.4	10.6
COG	Congo	152.3	38.8	6.8	61.4	68.6	34.9	3.6	36.6
COK	Cook Islands	17.9	6.0	56.1	..	17.8	6.5	58.0	..
COL	Colombia	1,031.1	30.1	3.2	11.4	691.6	24.8	2.4	6.0
COM	Comoros	27.9	12.3	5.7	20.1	17.6	10.7	4.2	15.1
CPV	Cape Verde	120.4	7.7	28.2	..	87.9	5.9	25.4	..
CRI	Costa Rica	96.1	27.7	3.0	5.6	75.7	24.4	2.7	4.4
CSFR	Former Czechoslovakia	718.8	24.8	5.2	10.8	639.8	20.4	4.7	9.1
CUB	Cuba	1,073.6	28.8	10.6	26.0	924.2	23.9	9.4	27.5
CYM	Cayman Islands	3.0	39.2	7.1	..	2.3	18.1	7.6	..
CYP <sup>a</sup>	Cyprus <sup>a</sup>	121.1	32.4	15.3	22.4	133.2	22.1	18.0	17.8
DEU	Germany	3,014.8	32.8	4.1	7.2	2,884.1	27.8	4.0	6.2
DJI	Djibouti	6.2	34.6	1.2	..	5.4	29.7	1.2	..
DMA	Dominica	43.7	24.1	46.7	..	25.7	21.7	33.7	..
DNK	Denmark	182.3	36.7	4.0	7.9	157.1	33.4	3.5	7.1
DOM	Dominican Republic	841.0	16.4	11.8	12.6	695.3	12.3	10.8	10.3
DZA	Algeria	1,450.2	19.3	5.9	12.7	1,312.3	16.4	6.1	14.6
ECU	Ecuador	1,060.1	14.8	10.8	10.5	503.6	15.0	5.9	6.3
EGY	Egypt	337.7	51.4	0.7	3.4	307.8	47.3	0.7	4.8
ERI	Eritrea	53.2	25.6	2.0	11.7	48.0	20.7	2.3	11.9

Note: "a" see footnote 19.1 and footnote 19.2.

Source: DIOC 2000, DIOC 2005/06, Barro and Lee (2010), Lutz et al. (2007)

Table A.9: Total emigration rates and emigration rates of high-educated, 2000 and 2005/06 (cont.)

Country of origin		Total							
		2005/06				2000			
		Emigrant population		Emigration rate		Emigrant population		Emigration rate	
		(thousands)	High-educated (%)	Total (%)	High-educated (%)	(thousands)	High-educated (%)	Total (%)	High-educated (%)
ESP	Spain	762.1	24.0	2.0	2.2	756.3	17.6	2.2	2.0
ETH	Ethiopia	197.2	32.0	0.4	13.4	124.3	29.2	0.3	9.8
FIN	Finland	270.4	25.9	5.9	5.9	255.5	23.5	5.7	10.9
FJI	Fiji	141.2	26.9	20.3	38.8	119.0	21.4	18.4	32.9
FLK	Falkland Islands	1.1	46.1	31.3	..	1.2	20.9	33.8	..
FRA	France	1,270.5	38.7	2.4	4.9	1,121.0	32.3	2.2	4.0
FSM	Micronesia	14.2	16.0	17.3	..	6.5	13.3	9.3	..
FYUG	Former Yugoslavia	2,759.0	12.9	12.7	15.8	2,281.9	11.0	10.9	12.3
GAB	Gabon	17.6	43.7	2.1	8.0	10.8	35.9	1.5	5.0
GBR	United Kingdom	3,433.3	38.5	6.5	11.6	3,224.8	33.1	6.3	11.5
GHA	Ghana	249.0	35.5	1.8	29.7	165.5	31.3	1.4	32.7
GIB	Gibraltar	12.6	29.7	35.0	..	11.7	22.1	34.6	..
GIN	Guinea	42.0	22.4	0.8	5.4	21.3	22.4	0.5	3.1
GMB	Gambia	43.6	13.0	4.4	26.4	20.9	16.5	2.5	19.6
GNB	Guinea-Bissau	65.3	18.6	7.2	..	30.0	12.7	3.9	..
GNQ	Equatorial Guinea	24.8	25.1	8.2	..	12.1	22.4	4.7	..
GRC	Greece	668.4	17.6	6.6	5.5	626.2	16.0	6.3	7.3
GRD	Grenada	47.3	28.6	40.6	..	46.4	23.3	41.5	..
GTM	Guatemala	727.2	10.2	9.1	29.1	485.3	8.4	7.2	19.7
GUM	Guam	72.5	29.7	37.8	..	56.3	26.7	34.3	..
GUY	Guyana	350.1	29.8	40.7	79.4	303.6	25.0	37.4	77.6
HKG	Hong Kong, China	577.0	52.8	8.8	25.8	388.4	37.9	6.6	16.5
HND	Honduras	435.2	12.4	9.6	18.0	275.6	10.6	7.2	14.3
HTI	Haiti	593.9	24.8	9.3	75.4	462.9	20.0	8.3	70.2
HUN	Hungary	353.9	32.2	4.0	9.2	313.9	28.5	3.6	8.8
IDN	Indonesia	335.6	40.2	0.2	3.7	339.4	34.5	0.2	3.6
IND	India	2,758.8	60.7	0.4	4.2	1,951.3	51.2	0.3	3.2
IRL	Ireland	634.2	31.5	16.2	18.1	787.5	22.4	20.9	19.9
IRN	Iran	782.8	47.5	1.6	6.8	604.5	46.3	1.4	8.2
IRQ	Iraq	453.8	25.7	2.7	7.7	328.1	26.4	2.2	7.1
ISL	Iceland	28.1	38.6	10.9	16.3	22.7	33.5	9.5	16.0
ISR	Israel	206.6	48.3	4.1	5.9	159.9	42.9	3.5	4.6
ITA	Italy	2,354.5	15.1	4.5	7.2	2,353.7	11.5	4.5	6.1
JAM	Jamaica	894.6	28.8	32.8	50.6	789.6	24.2	31.3	47.0
JOR	Jordan	81.7	42.9	2.3	5.8	63.1	40.9	2.2	6.2
JPN	Japan	605.7	53.9	0.5	0.9	563.3	48.9	0.5	0.9
KEN	Kenya	230.8	43.7	1.1	15.7	198.1	36.9	1.1	15.2
KHM	Cambodia	254.5	19.0	2.8	43.7	239.1	15.2	3.1	43.6
KIR	Kiribati	1.5	39.8	2.6	..	1.7	20.2	3.4	..
KOREA-NS	North and South Korea	1,651.2	43.2	2.8	3.4	1,444.9	35.7	2.6	3.1
KWT	Kuwait	46.7	44.8	2.2	12.6	37.0	44.2	2.2	9.9
LAO	Laos	256.1	19.5	7.0	24.7	264.1	14.2	8.2	25.9
LBN	Lebanon	380.0	37.5	11.7	..	334.4	30.9	11.3	..
LBR	Liberia	69.9	30.4	3.7	11.4	41.0	33.5	2.4	15.1
LIB	Libya	65.7	25.9	1.6	2.4	62.0	24.2	1.7	3.9
LCA	Saint Lucia	25.1	25.0	17.8	..	24.5	20.3	18.8	..
LIE	Liechtenstein	4.4	25.8	13.3	..	3.5	19.5	11.6	..
LKA	Sri Lanka	433.0	32.7	2.9	34.1	316.9	26.4	2.3	27.7
LSO	Lesotho	1.8	30.2	0.1	3.6	0.9	45.8	0.1	4.2
LUX	Luxembourg	38.6	31.0	9.4	17.6	31.3	23.7	8.1	12.3
MAC	Macao	18.6	44.4	4.5	15.4	18.5	35.8	5.1	16.7
MAR	Morocco	2,106.4	15.0	9.0	15.3	1,504.9	13.9	7.3	13.0
MCO	Monaco	15.1	26.6	35.8	..	12.3	23.0	30.6	..
MDG	Madagascar	92.7	33.9	0.9	10.6	76.6	31.7	0.8	9.6
MDV	Maldives	1.0	67.5	0.5	24.4	0.4	30.0	0.3	6.9
MEX	Mexico	10,780.3	7.4	13.0	7.2	8,327.9	5.7	11.1	6.1
MLI	Mali	63.7	14.6	1.0	10.6	45.2	12.6	0.9	11.3

Source: DIOC 2000, DIOC 2005/06, Barro and Lee (2010), Lutz et al. (2007)

Table A.9: Total emigration rates and emigration rates of high-educated, 2000 and 2005/06 (cont.)

Country of origin		Total							
		2005/06				2000			
		Emigrant population		Emigration rate		Emigrant population		Emigration rate	
		(thousands)	High-educated (%)	Total (%)	High-educated (%)	(thousands)	High-educated (%)	Total (%)	High-educated (%)
MLT	Malta	84.7	17.2	20.3	31.5	98.0	13.5	24.0	31.4
MMR	Myanmar	78.2	39.8	0.2	1.2	61.2	40.9	0.2	1.5
MNG	Mongolia	13.4	38.3	0.7	2.4	3.7	50.1	0.2	1.2
MOZ	Mozambique	72.7	29.6	0.6	31.2	85.7	26.4	0.8	38.9
MRT	Mauritania	18.7	23.2	1.0	11.8	15.2	17.2	1.0	8.6
MUS	Mauritius	109.1	28.2	10.4	49.7	91.4	24.4	9.4	53.0
MWI	Malawi	22.6	50.4	0.3	38.5	14.9	34.8	0.2	19.7
MYS	Malaysia	245.8	54.9	1.4	5.6	214.3	47.6	1.4	6.2
NAM	Namibia	6.7	55.3	0.5	8.5	3.1	45.8	0.3	4.0
NER	Niger	9.5	40.1	0.1	5.8	4.8	37.5	0.1	3.7
NGA	Nigeria	380.3	59.1	0.5	3.6	260.8	53.1	0.4	2.6
NIC	Nicaragua	254.7	24.4	7.0	11.0	221.0	18.1	6.8	9.1
NIU	Niue	5.3	8.6	79.7	..	5.4	8.6	79.8	..
NLD	Netherlands	678.3	37.2	4.8	7.7	566.1	32.0	4.2	6.1
NOR	Norway	125.5	33.4	3.3	4.3	120.0	31.7	3.2	4.6
NPL	Nepal	62.0	45.6	0.4	6.2	23.9	39.2	0.2	2.2
NZL	New Zealand	447.8	29.6	12.2	8.2	413.1	26.5	12.2	8.0
OMN	Oman	4.2	37.4	0.3	..	2.6	37.5	0.2	..
PAK	Pakistan	842.8	36.9	0.8	5.7	668.1	30.3	0.8	3.3
PAN	Panama	150.3	37.7	6.3	11.1	139.8	32.9	6.5	10.9
PER	Peru	639.4	32.0	3.3	5.2	415.0	28.6	2.4	3.4
PHL	Philippines	2,490.9	51.1	4.4	8.0	1,929.8	45.9	3.9	6.8
PNG	Papua New Guinea	27.5	36.4	0.8	21.7	25.9	31.2	0.8	18.3
POL	Poland	2,791.9	26.1	8.0	15.5	2,103.5	21.1	6.3	11.7
PRI	Puerto Rico	1,330.7	19.1	30.2	..	1,299.9	14.9	30.8	..
PRT	Portugal	1,381.1	8.5	13.5	11.6	1,260.2	6.2	12.8	8.0
PRY	Paraguay	43.1	22.5	1.1	7.8	20.1	23.9	0.6	2.2
PSE	Occup. Palestinian Terr.	18.9	44.1	0.9	..	14.8	40.9	0.9	..
QAT	Qatar	4.5	50.7	0.7	2.0	3.3	43.9	0.7	2.0
ROU	Romania	1,585.9	22.5	8.0	18.2	844.9	23.7	4.5	12.4
RWA	Rwanda	25.1	38.3	0.5	14.8	14.8	34.9	0.3	15.9
SAU	Saudi Arabia	55.8	46.4	0.4	1.4	32.4	37.2	0.3	0.7
SDN	Sudan	84.7	34.6	0.4	5.5	41.9	39.7	0.2	5.3
SEN	Senegal	194.9	20.0	2.8	16.9	133.2	19.1	2.2	16.9
SGP	Singapore	119.2	50.4	3.3	9.1	106.5	43.5	3.3	9.9
SLB	Solomon Islands	1.8	34.5	0.6	..	1.8	36.8	0.8	..
SLE	Sierra Leone	55.2	31.4	1.7	32.2	40.2	33.7	1.5	36.2
SLV	El Salvador	1,106.9	10.6	20.1	22.6	835.6	7.7	17.3	15.5
SMR	San Marino	2.7	11.3	9.5	..	2.8	12.4	11.2	..
SOM	Somalia	211.2	13.8	4.4	..	125.0	12.5	3.1	..
STP	São Tomé and Príncipe	21.8	11.5	19.6	..	11.6	10.7	12.5	..
SUR	Suriname	196.0	18.1	38.2	..	..	..	..	..
SWE	Sweden	223.2	45.0	2.9	5.3	196.9	37.0	2.7	4.3
SWZ	Swaziland	2.4	37.2	0.4	4.3	1.8	42.9	0.3	3.9
SYC	Seychelles	9.6	28.8	13.3	..	8.1	17.3	11.7	..
SYR	Syria	138.5	36.8	1.1	12.6	124.6	33.8	1.3	10.6
TCA	Turks and Caicos Islands	1.8	18.5	7.6	..	1.4	16.8	8.8	..
TCD	Chad	8.4	40.8	0.2	7.4	5.8	42.3	0.1	7.0
TGO	Togo	35.1	33.6	1.0	14.3	18.4	35.8	0.6	10.3
THA	Thailand	345.9	31.9	0.7	2.5	269.7	27.6	0.6	2.8
TKL	Tokelau	1.7	6.7	69.5	..	1.7	10.1	62.6	..
TLS	Timor-Leste	12.3	10.9	2.1	..	11.1	12.4	2.6	..
TON	Tonga	43.1	11.8	41.0	56.1	40.9	9.5	40.3	51.7
TTO	Trinidad and Tobago	312.0	35.2	23.3	74.0	274.2	29.7	22.3	73.3
TUN	Tunisia	481.3	17.9	6.1	11.8	426.9	15.9	6.0	14.8

Source: DIOC 2000, DIOC 2005/06, Barro and Lee (2010), Lutz et al. (2007)



**Table A.9: Total emigration rates and emigration rates of high-educated, 2000 and 2005/06 (cont.)**

Country of origin		Total							
		2005/06				2000			
		Emigrant population		Emigration rate		Emigrant population		Emigration rate	
		(thousands)	High-educated (%)	Total (%)	High-educated (%)	(thousands)	High-educated (%)	Total (%)	High-educated (%)
TUR	Turkey	2,603	8.1	4.7	5.1	2,085	6.7	4.2	3.2
TWN	Chinese Taipei	441	69.6	2.3	4.9	429	61.3	2.4	6.0
TZA	United Rep. of Tanzania	68	48.8	0.3	20.9	70	40.7	0.4	18.1
UGA	Uganda	80	46.6	0.5	7.6	82	39.0	0.7	7.0
URY	Uruguay	146	23.4	5.5	14.6	74	26.3	2.9	7.4
USA	United States of America	939	49.3	0.4	0.6	828	46.5	0.4	0.4
USSR	Former USSR	5,604	27.6	2.4	3.7	3,408	26.3	1.5	2.2
VCT	Saint Vincent and Grenadines	31	30.0	27.1	..	35	24.5	30.9	..
VEN	Venezuela	349	44.1	1.9	4.9	233	36.7	1.4	3.6
VIR	United States Virgin Islands	53	32.0	38.3	..	48	25.4	37.1	..
VNM	Viet Nam	1,758	27.0	2.9	15.4	1,516	22.9	2.8	18.2
VUT	Vanuatu	2	34.3	1.5	..	2	27.2	1.5	..
WSM	Samoa	75	9.3	40.7	..	71	8.7	40.5	..
YEM	Yemen	39	12.8	0.3	1.9	32	19.1	0.3	3.5
ZAF	South Africa	465	51.4	1.4	9.7	352	44.8	1.1	6.7
ZMB	Zambia	45	56.5	0.7	25.3	35	47.9	0.6	16.5
ZWE	Zimbabwe	140	46.7	1.7	49.4	77	40.6	1.0	29.5

Source: DIOC 2000, DIOC 2005/06, Barro and Lee (2010), Lutz et al. (2007)

**Table A.10: Total emigration rates and emigration rates of high-educated for women by country of origin, 2000 and 2005/06**

Country of origin		Women							
		2005/06				2000			
		Emigrant population (thousands) High-educated (%)		Emigration rate Total (%) High-educated (%)		Emigrant population (thousands) High-educated (%)		Emigration rate Total (%) High-educated (%)	
ABW	Aruba	3.9	52.8	8.3	..	3.2	48.5	8.0	..
AFG	Afghanistan	116.4	19.6	1.8	12.5	54.2	17.8	1.0	7.3
AGO	Angola	98.6	21.7	2.2	..	101.7	20.9	2.6	..
AND	Andorra	3.6	27.5	10.5	..	1.9	30.9	6.9	..
ANT	Netherlands Antilles	68.9	25.8	46.7	..	..	..	..	..
ARE	United Arab Emirates	10.0	44.7	1.1	2.9	5.6	26.4	0.8	1.6
ARG	Argentina	285.9	38.0	1.9	6.0	167.4	31.9	1.2	3.6
ATG	Antigua and Barbuda	13.4	37.8	31.1	..	13.6	29.4	34.9	..
AUS	Australia	163.5	45.4	1.9	2.1	158.2	40.1	2.0	2.2
AUT	Austria	225.0	25.3	5.9	12.4	204.3	20.9	5.5	11.0
BDI	Burundi	9.2	36.3	0.4	26.0	5.5	31.9	0.3	23.3
BEL	Belgium	215.6	33.4	4.6	6.2	196.2	27.7	4.3	5.3
BEN	Benin	9.7	34.0	0.4	13.6	6.3	30.9	0.3	11.0
BFA	Burkina Faso	6.3	25.4	0.2	7.3	3.4	23.0	0.1	4.9
BGD	Bangladesh	176.1	28.5	0.4	3.2	123.6	21.0	0.3	2.0
BGR	Bulgaria	179.6	40.5	4.9	10.5	82.0	31.8	2.3	4.0
BHR	Bahrain	2.6	60.2	1.2	6.6	3.4	37.9	1.8	7.0
BHS	Bahamas	17.9	40.2	12.9	22.8	16.7	31.9	13.2	20.2
BLZ	Belize	28.1	26.3	24.8	52.5	24.7	20.9	25.3	51.1
BMU	Bermuda	9.2	39.1	25.3	..	10.1	35.5	27.6	..
BOL	Bolivia	103.0	22.5	3.4	5.5	39.8	27.2	1.5	3.5
BRA	Brazil	454.5	28.8	0.7	2.7	293.5	26.8	0.5	1.8
BRB	Barbados	46.9	36.8	27.5	78.2	48.1	28.9	28.8	90.9
BRN	Brunei Darussalam	5.2	50.6	3.9	18.4	4.5	37.9	3.9	16.6
BTN	Bhutan	0.5	43.4	0.3	..	0.3	19.1	0.2	..
BWA	Botswana	3.5	38.3	0.6	7.3	2.0	38.7	0.4	5.0
CAF	Central African Republic	8.3	23.4	0.7	18.6	5.0	24.2	0.4	12.1
CAN	Canada	615.0	43.8	4.4	7.0	590.5	36.5	4.5	6.2
CHE	Switzerland	253.2	27.0	7.3	16.2	229.9	23.4	6.9	14.3
CHL	Chile	143.2	34.9	2.2	3.4	107.2	29.1	1.9	2.7
CHN	China	1,469.6	40.6	0.3	2.2	1,088.4	36.7	0.2	2.3
CIV	Côte d'Ivoire	55.6	25.7	1.0	16.8	30.0	19.9	0.6	11.8
CMR	Cameroon	59.8	33.6	1.1	20.4	29.5	34.0	0.6	21.9
COD	Congo, Dem. Rep. of	52.8	21.4	0.3	10.3	50.2	30.4	0.4	19.8
COG	Congo	75.9	31.4	6.6	65.5	32.9	27.1	3.4	42.4
COK	Cook Islands	9.5	7.0	57.8	..	9.3	6.4	59.7	..
COL	Colombia	591.8	29.6	3.5	12.7	392.8	24.0	2.6	6.5
COM	Comoros	14.1	10.1	5.7	29.7	8.6	8.9	4.1	23.0
CPV	Cape Verde	64.8	8.1	28.3	..	45.7	5.8	24.7	..
CRI	Costa Rica	48.5	30.4	3.1	6.2	40.6	24.2	3.0	4.7
CSFR	Former Czechoslovakia	403.6	22.3	5.6	11.8	359.6	17.5	5.1	10.3
CUB	Cuba	547.1	28.1	10.7	24.2	476.1	23.4	9.6	25.1
CYM	Cayman Islands	2.1	45.5	10.1	..	1.5	16.8	9.1	..
CYP <sup>a</sup>	Cyprus <sup>a</sup>	63.8	32.9	15.5	24.5	67.0	19.4	17.6	15.7
DEU	Germany	1,710.8	29.9	4.5	9.2	1,660.1	25.0	4.4	8.4
DJI	Djibouti	3.3	30.0	1.3	..	2.6	23.3	1.2	..
DMA	Dominica	26.1	26.9	51.6	..	14.1	23.7	35.9	..
DNK	Denmark	96.5	36.3	4.1	8.5	82.9	33.4	3.6	7.6
DOM	Dominican Republic	488.1	17.0	13.4	15.1	395.3	12.7	12.2	12.5
DZA	Algeria	698.9	17.9	5.7	12.3	625.4	15.1	5.9	15.4
ECU	Ecuador	544.8	15.3	11.0	11.3	251.9	16.1	5.9	6.7
EGY	Egypt	135.0	48.0	0.5	3.7	129.2	39.8	0.6	5.5
ERI	Eritrea	27.4	19.1	2.0	20.4	25.2	14.8	2.3	21.3
ESP	Spain	411.0	23.2	2.1	2.3	410.9	17.1	2.3	2.1

Note: "a" see footnote 19.1 and footnote 19.2.

Source: DIOC 2000, DIOC 2005/06, Barro and Lee (2010), Lutz et al. (2007)

**Table A.10: Total emigration rates and emigration rates of high-educated for women by country of origin, 2000 and 2005/06 (cont.)**

Country of origin		Women							
		2005/06				2000			
		(thousands)	High-educated (%)	Total (%)	High-educated (%)	(thousands)	High-educated (%)	Total (%)	High-educated (%)
ETH	Ethiopia	100.1	26.1	0.4	20.1	62.4	22.7	0.3	14.9
FIN	Finland	166.1	29.4	6.9	7.2	152.5	27.2	6.5	15.9
FJI	Fiji	74.7	26.8	21.3	41.1	62.8	19.9	19.3	34.7
FLK	Falkland Islands	0.3	12.2	22.4	..	0.7	19.4	37.6	..
FRA	France	702.4	37.5	2.6	5.1	631.0	31.3	2.4	4.2
FSM	Micronesia	7.7	12.9	18.6	..	3.4	10.7	9.6	..
FYUG	Former Yugoslavia	1,380.8	11.9	12.4	14.7	1,130.8	9.9	10.5	11.6
GAB	Gabon	9.7	40.0	2.3	5.7	5.6	31.0	1.5	3.2
GBR	United Kingdom	1,744.3	36.0	6.4	10.3	1,675.3	30.2	6.3	10.3
GHA	Ghana	114.0	31.6	1.6	36.7	75.6	25.4	1.3	49.4
GIB	Gibraltar	4.3	28.6	27.0	..	6.2	19.5	35.9	..
GIN	Guinea	17.0	17.6	0.7	6.9	8.7	20.5	0.4	4.8
GMB	Gambia	15.9	10.8	3.2	25.9	7.3	13.5	1.8	18.2
GNB	Guinea-Bissau	20.7	16.3	4.6	..	11.4	12.5	3.0	..
GNQ	Equatorial Guinea	14.9	17.8	9.5	..	6.6	15.9	5.0	..
GRC	Greece	310.4	14.9	6.0	4.5	293.4	12.8	5.8	6.0
GRD	Grenada	27.7	31.6	43.7	..	27.1	25.6	44.8	..
GTM	Guatemala	297.3	11.8	7.3	34.5	217.7	8.9	6.2	23.2
GUM	Guam	37.6	30.9	39.0	..	28.4	26.7	35.0	..
GUY	Guyana	192.0	29.4	43.4	78.7	165.2	24.6	38.2	75.2
HKG	Hong Kong, China	299.9	50.5	8.7	26.1	199.9	36.2	6.5	17.2
HND	Honduras	206.1	15.5	9.0	20.7	140.6	11.5	7.2	16.7
HTI	Haiti	318.3	23.7	9.7	69.7	246.3	19.1	8.6	66.1
HUN	Hungary	179.6	32.1	3.8	9.1	159.9	26.6	3.4	8.3
IDN	Indonesia	183.1	37.4	0.2	4.1	177.2	30.0	0.2	4.2
IND	India	1,297.2	56.2	0.4	4.5	932.9	45.9	0.3	3.8
IRL	Ireland	339.8	29.8	17.0	17.3	435.4	22.8	22.4	20.9
IRN	Iran	360.1	43.2	1.4	6.4	268.7	41.0	1.3	7.6
IRQ	Iraq	189.3	23.8	2.3	7.2	124.3	22.3	1.7	6.0
ISL	Iceland	14.3	36.7	11.0	16.0	12.2	32.3	10.2	16.4
ISR	Israel	90.6	49.7	3.5	5.0	71.2	41.5	3.1	3.7
ITA	Italy	1,094.4	13.3	4.0	5.8	1,105.7	10.2	4.1	5.0
JAM	Jamaica	504.7	32.7	34.8	51.3	444.4	27.6	33.2	47.6
JOR	Jordan	34.8	38.5	2.0	5.1	24.2	33.6	1.7	4.5
JPN	Japan	376.6	51.8	0.7	1.1	348.2	44.9	0.6	1.0
KEN	Kenya	117.0	36.8	1.1	20.1	98.4	32.8	1.1	20.4
KHM	Cambodia	135.0	15.6	2.9	47.8	124.5	12.0	3.1	55.5
KIR	Kiribati	1.1	46.7	3.8	..	1.1	15.5	4.0	..
KOREA-NS	North and South Korea	934.4	40.6	3.1	4.3	816.6	32.8	2.9	4.0
KWT	Kuwait	20.0	43.0	2.6	10.8	15.2	41.5	2.5	9.2
LAO	Laos	129.7	17.0	7.0	25.2	131.4	12.2	8.1	29.2
LBN	Lebanon	174.2	33.3	10.5	..	149.2	25.7	9.9	..
LBR	Liberia	34.7	27.1	3.6	12.3	20.9	27.6	2.5	17.4
LBY	Libya	34.1	18.9	1.7	1.8	29.4	19.4	1.7	2.8
LCA	Saint Lucia	14.8	26.0	19.9	..	13.7	22.4	20.1	..
LIE	Liechtenstein	2.6	14.0	15.4	..	2.2	11.5	13.7	..
LKA	Sri Lanka	205.8	29.8	2.7	35.2	147.7	23.7	2.1	28.7
LSO	Lesotho	1.0	22.4	0.1	2.0	0.5	48.3	0.1	3.5
LUX	Luxembourg	19.2	28.7	9.2	17.7	17.9	20.7	8.9	13.5
MAC	Macao	10.7	44.9	4.8	17.2	10.3	34.3	5.4	17.8
MAR	Morocco	939.0	13.3	7.9	16.7	662.0	12.7	6.3	15.0
MCO	Monaco	8.0	27.3	36.8	..	6.2	22.4	30.3	..
MDG	Madagascar	53.8	30.7	1.0	12.4	43.1	28.0	0.9	11.1
MDV	Maldives	0.4	71.8	0.5	32.5	0.2	33.8	0.3	12.7
MEX	Mexico	4,761.8	8.4	11.3	7.8	3,695.0	6.4	9.7	6.7
MLI	Mali	24.2	13.6	0.7	13.1	15.3	12.9	0.6	16.8
MLT	Malta	43.0	17.8	20.3	35.7	48.9	12.3	23.6	33.9

Source: DIOC 2000, DIOC 2005/06, Barro and Lee (2010), Lutz et al. (2007)

Table A.10: Total emigration rates and emigration rates of high-educated for women by country of origin, 2000 and 2005/06 (cont.)

Country of origin		Women							
		2005/06				2000			
		Emigrant population		Emigration rate		Emigrant population		Emigration rate	
(thousands)	High-educated (%)	Total (%)	High-educated (%)	(thousands)	High-educated (%)	Total (%)	High-educated (%)		
MMR	Myanmar	40.4	37.7	0.2	1.5	31.2	38.0	0.2	1.5
MNG	Mongolia	8.5	37.5	0.9	3.1	2.1	50.2	0.3	1.4
MOZ	Mozambique	39.8	29.4	0.7	40.3	45.1	27.6	0.8	58.5
MRT	Mauritania	5.4	15.8	0.6	12.6	3.8	12.1	0.5	11.3
MUS	Mauritius	58.9	22.0	11.0	51.3	50.6	18.6	10.2	60.1
MWI	Malaw i	11.9	47.3	0.3	52.7	7.4	28.8	0.2	26.8
MYS	Malaysia	137.0	52.8	1.6	6.3	115.7	45.3	1.5	6.7
NAM	Nambia	3.8	60.1	0.6	11.3	1.7	41.8	0.3	4.1
NER	Niger	4.1	40.0	0.1	8.9	2.1	35.7	0.1	6.7
NGA	Nigeria	175.3	53.7	0.4	4.6	118.1	45.5	0.3	3.2
NIC	Nicaragua	135.1	24.6	7.3	15.2	119.9	16.7	7.3	12.7
NIU	Niue	2.8	9.2	80.1	..	2.9	9.0	80.7	..
NLD	Netherlands	337.5	32.0	4.7	7.3	287.2	26.5	4.2	5.7
NOR	Norw ay	71.4	29.4	3.6	4.0	67.1	28.6	3.5	4.5
NPL	Nepal	24.4	35.5	0.3	7.6	8.2	35.6	0.1	3.7
NZL	New Zealand	220.8	32.5	11.8	9.1	205.4	28.0	11.8	8.8
OMN	Oman	1.4	37.5	0.2	..	0.9	33.7	0.1	..
PAK	Pakistan	371.1	30.7	0.8	6.4	293.6	25.5	0.7	3.6
PAN	Panama	90.2	36.4	7.4	11.7	84.0	31.1	7.7	11.3
PER	Peru	345.0	31.5	3.6	5.1	224.4	27.6	2.6	3.5
PHL	Philippines	1,526.1	52.5	5.3	9.6	1,185.6	47.3	4.8	8.1
PNG	Papua New Guinea	15.0	38.5	0.8	40.4	14.2	31.4	0.9	32.9
POL	Poland	1,516.8	26.2	8.3	15.2	1,167.7	20.0	6.7	11.3
PRI	Puerto Rico	696.2	20.5	29.9	..	687.2	16.0	30.8	..
PRT	Portugal	685.5	9.0	12.9	10.4	623.1	6.6	12.2	7.4
PRY	Paraguay	23.2	22.0	1.2	6.8	11.1	23.8	0.7	2.4
PSE	Occup. Palestinian Terr.	7.3	28.4	0.7	..	5.6	31.0	0.7	..
QAT	Qatar	1.9	63.2	1.1	3.0	1.3	43.6	0.9	1.9
ROU	Romania	846.4	22.2	8.2	19.7	444.6	22.2	4.5	13.0
RWA	Rw anda	13.6	35.0	0.5	23.0	7.8	28.9	0.3	27.0
SAU	Saudi Arabia	23.2	46.3	0.4	1.4	12.9	33.0	0.2	0.7
SDN	Sudan	34.4	31.5	0.3	3.9	16.6	33.5	0.2	3.8
SEN	Senegal	67.5	22.8	1.9	24.0	45.2	21.4	1.5	21.0
SGP	Singapore	64.8	49.3	3.6	11.0	58.0	41.8	3.6	11.3
SLB	Solomon Islands	1.0	31.8	0.7	..	1.0	32.9	0.8	..
SLE	Sierra Leone	26.9	28.4	1.6	46.4	20.1	29.9	1.5	55.3
SLV	El Salvador	523.0	11.3	18.6	23.1	407.2	7.9	16.4	15.6
SMR	San Marino	1.0	14.9	6.7	..	1.8	10.6	13.4	..
SOM	Somalia	115.9	10.7	4.7	..	65.1	8.7	3.1	..
STP	São Tomé and Príncipe	10.7	8.3	19.0	..	6.3	10.0	13.2	..
SUR	Suriname	105.5	18.5	39.6	..	..	..	..	..
SWE	Sw eden	125.3	44.3	3.2	5.1	112.8	36.0	3.0	4.4
SWZ	Sw aziland	1.2	39.1	0.3	2.7	1.0	42.5	0.3	2.9
SYC	Seychelles	6.3	22.1	16.6	..	5.0	17.5	13.9	..
SYR	Syria	62.1	29.0	1.0	14.7	54.0	25.9	1.1	12.7
TCA	Turks and Caicos Islands	1.0	19.9	8.7	0.0	0.8	17.7	10.1	0.0
TCD	Chad	3.6	34.1	0.1	17.3	2.4	36.1	0.1	19.1
TGO	Togo	15.8	24.2	0.9	19.6	7.8	24.1	0.5	13.2
THA	Thailand	233.4	30.5	0.9	2.9	179.8	24.7	0.7	3.1
TKL	Tokelau	0.9	7.7	70.8	..	0.8	10.3	62.4	..
TLS	Timor-Leste	6.2	10.1	2.1	..	5.6	12.7	2.7	..
TON	Tonga	20.9	13.5	40.3	62.3	20.2	9.7	40.0	55.0
TTO	Trinidad and Tobago	176.0	36.3	25.0	75.6	155.5	30.4	24.1	76.7
TUN	Tunisia	205.8	16.3	5.2	10.9	189.0	13.8	5.4	15.5

Source: DIOC 2000, DIOC 2005/06, Barro and Lee (2010), Lutz et al. (2007)

**Table A.10: Total emigration rates and emigration rates of high-educated for women by country of origin, 2000 and 2005/06 (cont.)**

Country of origin		Women							
		2005/06				2000			
		Emigrant population (thousands) High-educated (%)		Emigration rate Total High-educated (%) (%)		Emigrant population (thousands) High-educated (%)		Emigration rate Total High-educated (%) (%)	
TUR	Turkey	1,237.3	6.4	4.5	5.0	991.7	4.8	4.0	2.9
TWN	Chinese Taipei	246.5	67.5	1.3	2.9	237.9	59.2	2.7	7.0
TZA	United Rep. of Tanzania	35.0	43.2	0.3	18.9	34.7	36.6	0.4	21.0
UGA	Uganda	37.5	44.7	0.5	8.3	40.6	35.4	0.6	8.7
URY	Uruguay	78.1	24.6	5.5	13.1	37.9	27.0	2.8	9.8
USA	United States of America	480.2	50.9	0.4	0.6	438.8	46.3	0.4	0.4
USSR	Former USSR	3,139.0	28.3	2.4	3.6	1,897.0	25.6	1.5	2.2
VCT	Saint Vincent and Grenadi	19.3	32.0	31.2	..	19.9	27.1	33.7	..
VEN	Venezuela	185.0	45.2	2.0	4.8	125.2	36.5	1.5	3.5
VIR	United States Virgin Island	23.2	22.4	37.8	..	24.8	28.2	36.4	..
VNM	Viet Nam	903.1	24.4	2.9	16.6	768.5	20.3	2.8	19.8
VUT	Vanuatu	1.0	34.1	1.6	..	0.9	26.1	1.6	..
WSM	Samoa	38.5	9.9	42.4	..	37.2	8.9	42.5	..
YEM	Yemen	15.2	12.4	0.3	1.7	11.5	17.7	0.2	3.6
ZAF	South Africa	238.4	49.3	1.4	9.1	181.9	42.2	1.2	6.5
ZMB	Zambia	25.1	51.1	0.8	33.7	18.2	44.7	0.6	22.7
ZWE	Zimbabwe	72.8	45.0	1.8	61.2	40.9	39.0	1.1	41.3

Source: DIOC 2000, DIOC 2005/06, Barro and Lee (2010), Lutz et al. (2007)

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