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Counting immigrants and expatriates in OECD countries: a new perspective

Submitted by the Organization for Economic Co-operation and Development (OECD)

PART II

**Counting Immigrants and
Expatriates in OECD Countries:
A New Perspective¹**

Introduction

Since the end of the 1990s, issues related to international migration, and more particularly to the international mobility of highly-qualified workers, are receiving increasing attention from policy-makers. This reflects among others the increasing international movements that have been taking place following the fall of the Iron Curtain and in conjunction with the growing globalisation of economic activity. In addition, demographic imbalances between developed and developing countries and large differences in wages have tended to encourage the movements of workers from economies where they are in surplus to those where they are most in need. Moreover, many OECD countries have been attempting to attract qualified human resources from abroad, which their increasingly knowledge-intensive economies need in order to sustain economic growth. Despite these increased movements and the heightened policy interest in this area, however, the quality and comparability of international data on migration have scarcely kept pace.

In particular, data that are generally available on migration movements do not provide a clear idea of the relative scale of movements across countries. In some countries, the so-called settlement countries (Australia, Canada, New Zealand and the United States), only “permanent” migrants are counted as immigrants, that is, persons who are admitted to the country and granted the right of permanent residence upon entry. Persons who are granted temporary permits may not even figure in the official migration statistics. In other countries, immigrants consist of persons who are enrolled onto a population register, which is a file of persons residing in the country that is generally maintained at the municipal level. To be registered, a person entering from outside the country must intend to stay in the country for more than a specified minimum period and have a residence permit (if required) of at least the minimum duration. In some countries (*e.g.* Belgium, Japan), the minimum period is three months, in others one year (Sweden, Finland). In practice, this means that international students, for example, will often be counted as immigrants in these countries. In the settlement countries, they would not figure in the official migration statistics. Although the solution would normally be to harmonise the statistics across countries, for a number of technical reasons, progress in this area is exceedingly slow.

As with international data on annual movements, those on the total immigrant population have suffered from differing national views concerning who is an “immigrant”. In the settlement countries, immigrants are considered to be persons who are foreign-born, that is, who at same stage have immigrated into the country of residence.² For these countries, the acquisition of nationality is relatively easy and it is rare to see statistics on persons of foreign nationality.³

In other countries immigrants are considered precisely to be persons of foreign nationality. However, because persons born abroad can acquire the nationality of the country of residence and because persons born in a country do not necessarily acquire

thereby the citizenship of the country of birth, statistics on the foreign population may not yield the same result as those on the foreign-born population. This would not be problematical if it were possible to produce data on both bases. But this was not the case for many countries until fairly recently, with the result that it was customary to see international statistics for two sets of generally non-overlapping countries, those applying the concept of a foreign country of birth to define the immigrant population and those for whom foreign nationality was the determining criterion.

As immigrant populations have grown in many countries and naturalisations have become more common, estimates based on these different concepts have become less and less comparable across countries. While new arrivals of foreign citizens tend to increase the size of the foreign population, those already there may acquire the citizenship of the host country and become nationals. As a result, the magnitude of the population of foreign citizenship may tend to remain more or less stable or to grow slowly, while the number of foreign-born persons continues to increase.

In addition to the lack of comparability on immigrant populations, most OECD member countries have little information at their disposal on their expatriates.⁴ And those which have some information do not necessarily have a clear picture of the countries of destination or of the exact magnitudes of persons who have left the country. Finally, rare are the countries which have a precise picture of their expatriates by duration of stay abroad, level of qualification, occupation or branch of industry.

In developing countries, the question of the international mobility of highly-qualified workers is generally manifested through a concern about brain drain and the loss of economic potential which could result from this. In OECD countries the retention of qualified persons and the return of expatriates constitute important challenges to which several countries have tried to respond.⁵ Several recent studies undertaken at the OECD have demonstrated that the question is more complex than is often depicted (OECD, 2002; Dumont and Meyer, 2003). These studies also highlight the deficiencies and the gaps in the statistical data available, making it difficult to grasp the complex international mobility patterns of highly skilled workers. To date, only one study has attempted to estimate rates of emigration by country of origin and by level of qualification (Carrington and Detragiache, 1998).⁶ This study is widely cited but is now somewhat dated (it uses data from the 1990s), and is subject to a number of biases which limit its usefulness.

As a result, current statistics tend to show a rather imperfect image of the actual extent of migration in general and of the movements of the highly skilled in particular, both with respect to movements from developing to developed countries but also within the OECD area as well.

With the 2000 round of censuses, however, virtually all OECD countries have incorporated in their census a question on the country of birth of persons enumerated, as well as on their nationality. With this information, it is possible to provide, for the first time, a detailed, comparable and reliable picture of immigrant populations within OECD countries, reflecting the cumulative effect of movements within and to the OECD zone over the past decades. Not only can immigrant populations be compared on a common basis across countries, but the extent of migration from a single source country to each OECD country as well as to OECD countries as a whole can be determined. And with additional information on the educational attainment of migrants, flows of human capital can be

depicted and, in particular, the conventional wisdom on the brain drain confronted with actual data.

This paper is divided into four sections. The first section describes the new database that is the source of the information in this chapter. The second section presents the basic results derived from the new database on immigrants and expatriates in OECD. The third and fourth sections will discuss in detail the results on expatriates from OECD and non-member countries. The fifth section provides an overview of recent policy measures related to movements of the highly skilled in OECD countries. A summary and conclusions follow.

1. A new database on international migrants

The information presented in this chapter is based on a data collection launched in July 2003, addressed to OECD National Statistical Offices (NSOs)⁷ and aimed at obtaining census data on the stock of the foreign-born population in OECD countries. The core objective of the project was to better measure and characterise foreign-born populations and especially, to obtain, by aggregating across OECD receiving countries, data on expatriates by country of origin.

The new database on immigrants and expatriates in OECD countries (see Box II.1) is the first internationally comparable data set with detailed information on the *foreign-born population* for almost all member countries of the OECD. In addition, using the data base, it is possible to calculate “emigration rates”⁸ to OECD countries by level of qualification and country of origin for approximately 100 countries. This provides a broad view of the significance of highly skilled emigration, for both OECD and less developed countries.

2. Immigrants and expatriates in OECD countries: first results

Table II.1 shown below compares the incidence of the foreign and foreign-born populations for almost all OECD countries. As is evident, it is in the settlement countries (i.e. Australia, Canada and New Zealand), as well as in Luxembourg and Switzerland, that the percentage of the foreign-born is highest, close to or exceeding 20% in all of these. In addition, certain European countries (e.g. Austria, Germany, the Netherlands and Sweden) have a percentage of immigrants at least as high as that recorded in the United States (approximately 12%).⁹ Likewise the percentage of the foreign-born population exceeds 10% of the total population in Belgium, France, Greece and Ireland. These figures are appreciably higher than those generally presented for the immigrant population, measured on the basis of foreign nationality and which never exceed 10%, except for Luxembourg and Switzerland. It is clear that many European countries have managed to admit and absorb immigrants in considerable numbers over the past decades, significantly more than is evident from looking at statistics of the resident foreign population.

Caution, however, needs to be exercised in interpreting the data for some countries. In France, but also in Portugal, for example, the foreign-born population includes a significant proportion of persons born abroad as citizens and repatriated from former colonies. Thus, about 1.6 million people born with French nationality outside of France (mainly in Algeria) are counted in the population census of 1999. A similar situation occurs for other countries and in particular the United States, because of persons born overseas of American parents (for instance, children born to military personnel stationed abroad). Unfortunately, few countries¹⁰ collect information on nationality at birth, which is what is needed to

Box II.1. **Development of a database on international migrants in OECD countries**

Most censuses in member countries were conducted around the year 2000 and the results are currently available for almost all of them. Due to their comprehensive coverage, censuses are particularly well-adapted to identifying and studying small population groups. In several countries, however, there is no population census and it has been necessary to turn to data from population registers or from large-sample surveys. Census data were actually used for 23 of the 29 participating countries and other sources for the remainder (see Annex II.A1 for more detailed information). The data base currently includes data on the foreign-born in OECD countries by detailed place of birth, nationality and educational attainment (three levels). The data are incomplete for two countries and will be available in a revised version of the database in the near future.

The database covers 227 countries of origin and 29 receiving countries within the OECD zone. Only 0.46% of the total population of all OECD countries did not report its place of birth and 0.24% did not report a specific country for the place of birth (either a region was specified or no answer was given). The level of education was reported for more than 98% of the population 15 years of age or older. Finally, complete information (i.e. detailed education and detailed place of birth) is available for 97.8% of the OECD population aged 15+. “Emigration rates” by level of qualification have been calculated for more than 100 countries.

Data adjustments have been necessary for only two situations. Firstly, data for Japan and Korea were not available by country of birth. For these two countries, it has been assumed that the country of nationality is the country of birth. This seems a reasonable assumption for the foreign-born, given the very low rate and number of naturalisations in these two countries. However, it will tend to overestimate the number of foreign-born relative to other countries, because persons born in Japan or Korea to foreigners will tend also to be recorded as foreign and thus be classified as foreign-born.

The same assumption could not be made for Germany, where the available source was the Microcensus, a large-scale household sample survey.^{*} This source identifies whether or not a person was born abroad, but not the country of birth. Equating country of birth and country of nationality for Germany would have attributed “Germany” as the country of birth to naturalised foreign-born persons, whose numbers are not negligible, and to the numerous “ethnic” German immigrants who obtained German nationality upon entry into Germany. Another data source (the German Socio-Economic Panel) was used to adjust the data for Germany where this was possible (see Annex II.A1 for more details).

* The last German census was conducted in 1987.

distinguish the immigration of non-citizens from the entries of persons born as citizens abroad. Estimates for the share of the foreign-born taking into account this phenomenon are presented in Table II.A2.1 in Annex II.A2.

For certain countries, in particular the United States, Australia or Canada, statistics on non-citizens are seldom published. Such statistics provide another perspective on migration. For example, 6.6% of the population of the United States does not have United States citizenship. The figure for Australia is 7.4%, that for Canada 5.3%, levels comparable to those recorded in some European countries such as France, Sweden, Denmark and the Netherlands. It is clear that for these settlement countries as well, data on persons of foreign citizenship would not give an accurate picture of the magnitude of their immigrant populations.

Table II.1. **Percentage of foreign-born and non-citizens in the total population in OECD countries**

	Percentage of foreign-born	Percentage of non-citizens
Mexico	0.5	..
Turkey	1.9	..
Poland	2.1	0.1
Slovak Republic	2.5	0.5
Finland	2.5	1.7
Hungary	2.9	0.9
Czech Republic	4.5	1.2
Spain	5.3	3.8
Portugal	6.3	2.2
Denmark	6.8	5.0
Norway	7.3	4.3
United Kingdom	8.3	..
France	10.0	5.6
Netherlands	10.1	4.2
Greece	10.3	7.0
Ireland	10.4	5.9
Belgium	10.7	8.2
Sweden	12.0	5.3
United States	12.3	6.6
Germany	12.5	..
Austria	12.5	8.8
Canada	19.3	5.3
New Zealand	19.5	..
Switzerland	22.4	20.5
Australia	23.0	7.4
Luxembourg	32.6	36.9
Japan ¹	..	1.0
Korea ¹	..	0.3
Weighted average for above countries	7.8	4.5

1. In the absence of place-of-birth data for Japan and Korea, it has been assumed that all non-citizens are foreign-born and that nationals are native-born (see Annex II.A1 for further details).

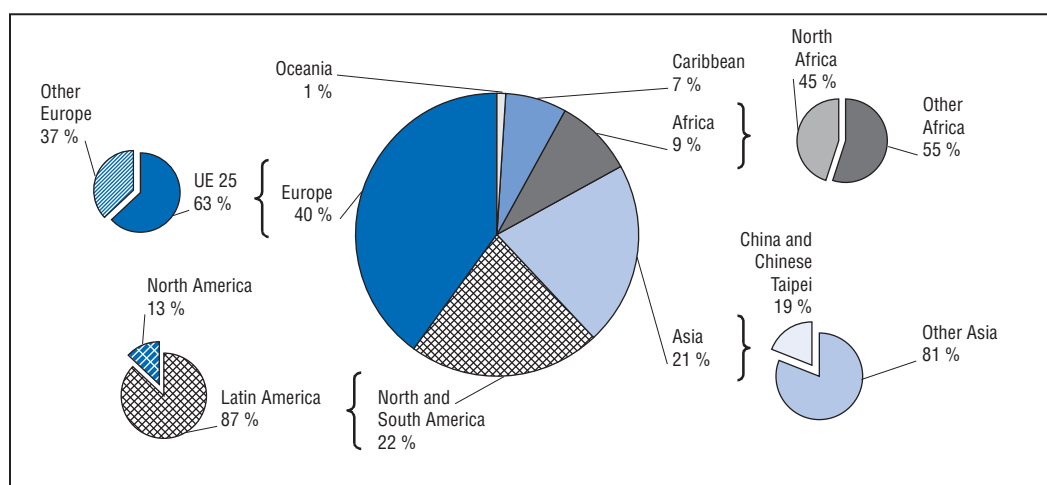
Source: See Annex II.A1, Secretariat calculations and OECD 2003 for the percentage of foreigners in the United Kingdom and Germany.

The differences between the statistics on non-citizens and on the foreign-born are partly attributable to the varying requirements across countries for obtaining the citizenship of the country of residence, and to the fact that in many countries, persons born in the country of parents of foreign nationality do not automatically acquire the citizenship of the host country. Table II.A2.2 in Annex II.A2 confirms that in Australia and in Canada, but also in Sweden and the Netherlands¹¹ a large share of the foreign-born acquires the citizenship of the host country. On the other hand, the acquisition of citizenship is more difficult and less common in Luxembourg and Switzerland.¹²

The distribution of foreign-born residents in OECD countries by area of origin (see Figure II.1 and Table II.A2.3 in Annex II.A2) is equally informative. In the OECD zone, people born in North Africa (Algeria, Tunisia and Morocco) are at least as numerous as persons born in China. Migrants originating from North Africa are concentrated in three European countries (i.e. France, Spain and the Netherlands). On the whole, Asians and Latin Americans (excluding Caribbean countries) account for more than 15 million immigrants each. Spain, a recent immigration country, alone has received more than 740 000 people

Figure II.1. **Foreign-born by region of origin in OECD countries**

Percentages



Note: "Other Europe", "Other Asia" and "Other Africa" include data for not stated European countries, not stated Asian countries and not stated African countries, respectively.

Source: See Annex II.A1, Secretariat calculations.

from Latin America, and the United States, approximately 13.5 million. However, it is continental Europe (including Turkey and central Eastern Europe), which accounts for the largest number of expatriates to OECD countries. There are, for example, nearly 2 million immigrants from the enlarged European Union (EU25) in each of Canada Australia, France and Germany.

The countries which practice a selective immigration policy based on human capital criteria stand out in Table II.A2.4 in Annex II.A2 as the countries with the highest percentages of highly qualified immigrants.¹³ This is the case for example in Australia, Canada and to a lesser extent the United Kingdom, Ireland, Korea, Norway and New Zealand, where 30 to 42% of immigrants have a higher degree. In addition, in a number of countries, foreign-born persons with a doctoral degree account for a high proportion of all persons holding such degrees in the host country. In the United States, even if a significant part of the immigrants are not highly qualified, more than 440 000 foreign-born persons hold a PhD.¹⁴ This accounts for approximately 25% of the total stock of PhDs in the country. The proportion of foreign-born doctorates in Sweden is comparable and in Australia and Canada it stands even higher, at 45% and 54%, respectively.

The situation in Austria, Finland, France, the Netherlands, Portugal, Spain or Turkey, differs significantly. In these countries, at least 50% of the foreign-born have less than upper-secondary education. In Austria, the difference between the percentage of low-qualified among the foreign and native-born populations is particularly large (approximately 16 percentage points). This is also the case in Poland and the Czech Republic.

3. Expatriates of OECD member countries residing in another member country

Much attention has been directed in recent years within OECD countries at the emigration of highly qualified persons, attracted to countries where job opportunities are

more prevalent and research funding more generous. Solid evidence regarding the extent of this phenomenon has been notably absent from the public debate. Although the database described here does allow one to remedy this as yet with respect to recent departures, it does provide a broad overall picture of expatriation over the past decades.

Table II.A2.5 in Annex II.A2 presents the complete data on expatriates from OECD countries. It gives the stock of persons born in one OECD country and residing in another (see Box II.2 for more information on alternative methods for obtaining data on expatriates). In the 29 OECD countries currently under review, 36.3 million persons, i.e. 46% of the total foreign-born population, come from another OECD country. In certain host countries, such

Box II.2. Counting expatriates: Methods and limits

Identifying and counting expatriates abroad is not without difficulties and different methods may produce different estimates. There are three main types of estimates, each of them with its advantages and shortcomings: i) statistics of people registered in embassies and consulates overseas, ii) emigration surveys in origin countries and iii) compilation of statistics from receiving countries.

Administrative data from embassies and consulates provide an interesting source for estimating the stock of nationals abroad. Indeed in most cases expatriates need to register to receive social benefits or pension payments, to pay taxes, to vote overseas, to renew identity papers, or simply to report their presence in the country. Unfortunately, because registration is not always compulsory or enforced, the data coverage is not perfect and may vary a lot from one country to another. For instance, the estimate of French citizens living in other OECD countries by the Ministry of Foreign Affairs (1.4 million in 1999) is more than double the number of official registrations at consulates. Furthermore, because people do not necessarily deregister and because some people may register even for short stays abroad (especially in countries where there is some risk), overestimation is also a problem.

Several countries have included specific questions on residents temporarily overseas in Censuses or have implemented specific surveys to identify their nationals abroad. It is possible to ask an interviewed household member how many usual members of the household are currently abroad. This type of estimate, however, covers only short stays abroad (including those for reasons of tourism) and excludes many long-term emigrants, because the situations in which the entire household has settled overseas are not covered.

In this chapter, the expatriate community is identified by compiling the data on the foreign born by place of birth in all OECD countries. The estimate is thus based on the place of birth and is not directly comparable to the other sources mentioned previously (see Table II.2). One of the major problems with this approach is that it is not always possible to identify foreign-born persons who were citizens of their current country of residence at birth (e.g. children born overseas of national parents). This situation can be particularly problematic for countries which have had important communities abroad. Another problem arises from the fact that some people do not report their place of birth in censuses. Persons not specifying a place of birth represent 10% of the total population in the Slovak Republic, about 5.7% in Australia, and 4% in New-Zealand and Switzerland (see Table II.A2.1 in Annex II.A2). Furthermore, some censuses do not identify systematically all countries of origin (e.g. Korea only records 17 foreign nationalities in its Census). Consequently, the estimates presented in this chapter on expatriates by country of origin should be considered a lower bound.

Table II.2. **OECD expatriates in other OECD countries**

	Nationals registered abroad at embassies or consulates ¹	Native-born living abroad (OECD Censuses)
United States	3 071 167	1 227 249
France	1 392 764	1 119 130
Switzerland	828 036	319 176
Australia	562 668	328 405
Japan	556 561	656 690

1. 1999 for France and the United States; 2000 for Switzerland; 2001 for Australia and Japan.

Sources: *Nationals registered abroad at embassies or consulates*: Australia: ABS Australian Demographic Statistics Quarterly and Australian Department of Foreign Affairs and Trade; France: Ministère des Affaires étrangères, Direction des Français à l'étranger et des étrangers en France; Japan: Ministry of Foreign Affairs, Consular and Migration Affairs Department; Switzerland: DFAE, Service des Suisses de l'étranger; United States: US Census Bureau and Bureau of Consular Affairs; *Native-born living abroad*: OECD censuses (excluding Italy) and Secretariat calculations.

as Luxembourg, the Slovak Republic, Ireland, Mexico, the Czech Republic and to a lesser extent Switzerland and Belgium, the share of the foreign-born from other OECD countries is very high (between 65% and 85%). At the other extreme, it is close to 24% in Hungary, Poland and Korea and only 11% in Japan.

The largest expatriate group consists of persons born in Mexico, with nearly 9.5 million people, of whom the vast majority are resident in the United States. The number of persons born in Germany and in the United Kingdom residing in other OECD member countries is also large, more than 3 million people for each of them. The number of persons born in Turkey, Italy and Poland and residing in other OECD countries amounts to over 2 million persons each.

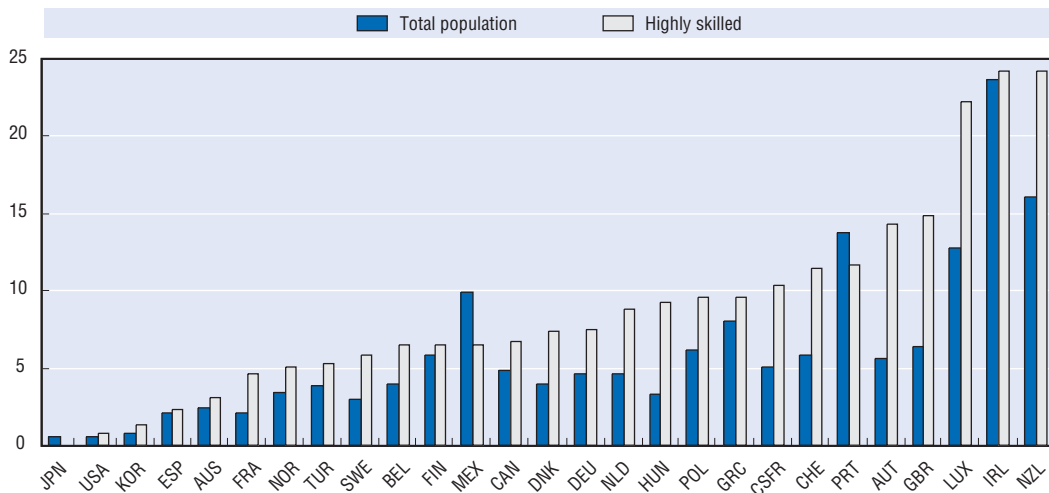
Expressed as a percentage of the total population of the given country, almost 24% of people born in Ireland are currently living in another OECD member country (see Figure II.2). Other significant expatriate communities include persons born in New Zealand (16%), Portugal (13.7%), Luxembourg (12.8%) and Mexico (9.9%).

A closer look at these first results reveals a number of other interesting findings. The Korean community in France for example, is larger than those of all the other European countries.¹⁵ the Dutch are more numerous in Canada than in the United States; there are nearly 110 000 British-born persons in Spain.¹⁶ there are approximately 450 000 people persons born in the United States living in Europe but 4.6 million persons born in Europe and living in the United States (of which 70 600 persons were born in Austria). Other examples include the high mobility among the Scandinavian countries, the high geographical dispersion of persons of German origin or the large numbers of persons born in France and living in Portugal or born in the United States and living in Mexico or Ireland. There are almost as many British – born persons in France (84 500) as there are French-born persons in the United Kingdom (96 300).

Even when information on the size of expatriate communities in member countries is available, there is not often information on the characteristics of this population. Speculation on the “brain drain” regularly feeds the media in certain countries, generally without credible statistical evidence. Some national studies exist (*e.g.* Hugo and alii, 2003 ; Barre and alii, 2003 ; Ferrand, 2001; Saint-Paul, 2004), but they do not always make it possible to cover the topic extensively.

Figure II.2. **Expatriates as a percentage of all native-born, OECD countries**

Total population and highly skilled



Note: CSFR stands for "Former Czechoslovakia". Data for Korea are partial as several OECD countries do not systematically distinguish between people born in the Democratic Republic of Korea and in the People's Republic of Korea.

Table II.3 shows the distribution of educational attainment for expatriates from each OECD country living in other OECD countries. It reveals the relative importance of the migration of highly qualified persons (*i.e.* persons with tertiary education). It is for the United States and Japan that the proportion of expatriates with tertiary education is highest (almost 50%). The selectivity of emigration with respect to qualifications, measured by the difference between the proportion of expatriates and that of the native-born with tertiary-level attainment, highlights several European countries, notably France, Austria and Switzerland (at least 20 percentage point difference). Hungary and Denmark also have a relatively significant proportion of their expatriates who are graduates of higher education institutions compared to the native-born. On the other hand, emigration originating from Portugal, Turkey, Mexico or the Slovak Republic is essentially not highly qualified.

With the notable exceptions of some Central and Eastern European Countries as well as Mexico, Ireland, Korea and Finland, highly skilled immigration towards OECD countries from the rest of the world systematically exceeds highly skilled emigration from OECD countries to other OECD countries (see Figure II.3).¹⁷ On this measure (and provided that expatriation of the highly skilled to non-OECD countries can be assumed to be relatively uncommon), most OECD countries would seem to benefit from the international mobility of the highly skilled.

Within the OECD area, only the United States, Australia, Canada, Switzerland, Spain, Sweden, Luxembourg and Norway (in this order) are net beneficiaries of highly skilled migration from other OECD countries. The United Kingdom has 700 000 more highly skilled expatriates in OECD countries than it has highly skilled immigrants from other OECD countries. Comparable figures exceed 500 000 for Germany, 400 000 for Mexico, 300 000 for Poland. France and Belgium have almost as many highly skilled immigrants from, as expatriates to OECD countries. This of course gives only a partial picture of brain

Table II.3. Number and distribution of OECD expatriates by level of education

	Tertiary	Upper secondary and post-secondary non-tertiary	Less than upper secondary	unspecified	Total
Australia	116 513 45.9	84 091 33.1	53 308 21.0	13 402	267 314
Austria	105 149 30.0	164 504 47.0	80 401 23.0	15 970	366 024
Belgium	108 797 34.6	104 109 33.1	101 295 32.2	7 343	321 544
Canada	417 750 40.6	411 595 40.0	200 175 19.4	15 458	1 044 978
Former CSFR	32 796 30.1	46 232 42.5	29 781 27.4	1 175	109 984
Czech Republic	53 084 25.2	106 613 50.5	51 239 24.3	4 943	215 879
Denmark	59 905 37.4	61 958 38.7	38 317 23.9	12 829	173 009
Finland	67 358 26.3	108 708 42.4	80 378 31.3	8 801	265 245
France	348 432 36.4	313 538 32.8	294 700 30.8	56 911	1 013 581
Germany	865 255 30.4	1 201 040 42.1	783 364 27.5	84 098	2 933 757
Greece	118 318 16.6	190 647 26.7	405 698 56.8	20 767	735 430
Hungary	90 246 29.6	129 452 42.4	85 451 28.0	9 773	314 922
Iceland	7 792 36.1	8 552 39.7	5 223 24.2	1 503	23 070
Ireland	186 554 27.5	143 679 21.2	347 073 51.2	115 010	792 316
Italy	300 631 13.0	619 946 26.8	1 395 714 60.3	114 048	2 430 339
Japan	281 664 49.7	220 158 38.9	64 529 11.4	9 641	575 992
Korea	134 926 44.2	116 535 38.2	53 568 17.6	7 509	312 538
Luxembourg	7 115 27.9	8 252 32.3	10 179 39.8	1 618	27 164
Mexico	472 784 5.6	2 057 184 24.4	5 900 254 70.0	1 159	8 431 381
Netherlands	209 988 36.1	203 897 35.0	168 284 28.9	34 740	616 909
New Zealand	166 854 44.6	84 113 22.5	122 942 32.9	36 754	410 663
Norway	39 152 33.9	45 054 39.0	31 263 27.1	6 610	122 079
Poland	328 058 26.6	518 868 42.0	387 023 31.4	42 533	1 276 482
Portugal	82 938 6.7	295 053 24.0	850 758 69.2	39 977	1 268 726
Slovak Republic	51 798 14.0	168 803 45.5	150 445 40.5	3 524	374 570
Spain	137 708 18.7	204 284 27.8	392 793 53.5	28 228	763 013

Table II.3. **Number and distribution of OECD expatriates by level of education** (cont.)

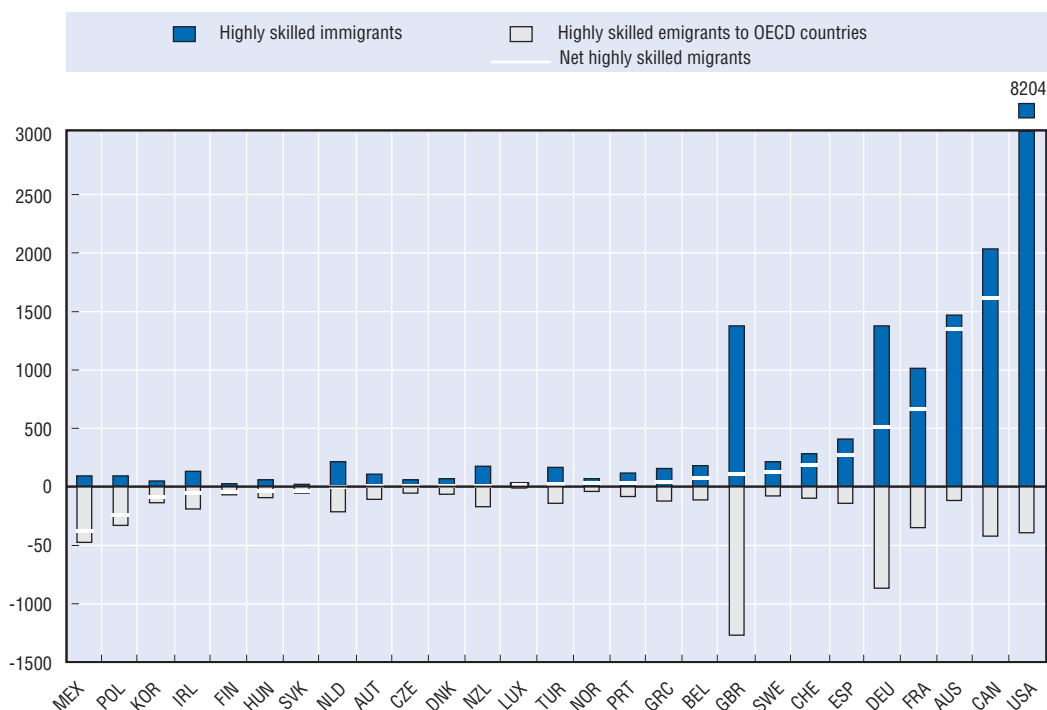
	Tertiary	Upper secondary and post-secondary non-tertiary	Less than upper secondary	unspecified	Total
Sweden	78 054 40.1	74 559 38.3	42 167 21.6	11 824	206 604
Switzerland	93 859 36.5	94 918 36.9	68 182 26.5	5 497	262 456
Turkey	138 323 6.4	467 630 21.7	1 547 933 71.9	41 759	2 195 645
United Kingdom	1 265 863 41.2	1 006 180 32.8	798 421 26.0	159 212	3 229 676
United States	390 244 49.9	220 869 28.3	170 665 21.8	27 762	809 540

Note: Population aged 15 and over. Percentage calculations do not take account of unspecified cases. Former CSFR stands for "former Czechoslovakia".

Sources: See Annex II.A1, Secretariat calculations.

 Figure II.3. **Immigrant and emigrant population 15+ with tertiary education in OECD countries**

Thousands



Note: Data for Korean emigrants are partial as several OECD countries do not systematically distinguish between the Democratic Republic of Korea and the People's Republic of Korea.

Source: See Annex II.A1, Secretariat calculations.

drain/brain exchange, because it does not include movements of the highly skilled between non-OECD and OECD countries. When movements from all countries to the OECD are included, the picture changes significantly.

Table II.4. **Persons with tertiary education by place of birth, selected OECD countries**

	Percentages		
	Native-Born	Foreign-Born	Expatriates
Canada	31.5	38.0	40.6
France	16.9	18.1	36.4
Germany	19.5	15.5	30.4
Hungary	10.7	19.8	29.6
Korea	26.7	32.2	44.2
New Zealand	27.2	31.0	44.6
Sweden	22.8	24.2	40.1
Switzerland	18.1	23.7	36.5
United States	26.9	24.8	49.9

Source: See Annex II.A1, Secretariat calculations.

The difference between the number of highly skilled emigrants to OECD countries and highly skilled immigrants from all countries is largely positive in the United States (+8.2 million), Canada and Australia, but also in France and Germany, even though these countries have a significant number of highly skilled expatriates in other OECD countries. Highly skilled immigration expressed as a percentage of the total highly skilled workforce is particularly significant (over 20%) in Australia, Luxembourg, Switzerland, Canada and New Zealand. The percentage of the highly skilled who are expatriates is below 10% for most OECD countries (see Figure II.2) and particularly low in Japan, the United States, Spain and Australia. Conversely, more than 10% of the highly skilled born in Switzerland, Portugal, Austria, or the United Kingdom are living in other OECD countries. This percentage is over 20% for three countries: Luxembourg (22.2%), Ireland (24.2%) and New Zealand (24.2%). Table II.4 clearly confirms the selective character of migration (in favour of the highly skilled) in OECD countries. This phenomenon is the result of pull factors attributable to selective migration policies in receiving countries, but also to other factors such as the fact that highly qualified persons are more tuned into the international labour market (because of social capital, language skills, access to information...) and have more resources to finance a move.

4. Highly skilled migration from non-member countries towards OECD countries: new evidence on the “brain drain”

Among non-member countries the biggest expatriate community is that originating in the former USSR with 4.2 million people, followed by the former Yugoslavia (2.2 million), India (1.9 million), the Philippines (1.8 million), China (1.7 million), Vietnam (1.5 million), Morocco (1.4 million) and Puerto Rico (1.3 million). Among persons with tertiary education, the former USSR still ranks first (1.3 million) with India having the second largest expatriate community (1 million) (see Table II.A2.6 in Annex II.A2).

To estimate “emigration rates” by level of qualification for non-member countries, information on the level of education of the relevant population in the country of origin is required. Two sets of estimates have been compiled for such countries, based on two data sources (see Box II.3). The results are presented in Table II.5 for the 15 countries with the lowest “emigration rates” for the highly qualified aged 15 and over as well as for the 15 countries with the highest rates. Most OECD countries, which are not included in Table II.5, would tend to fall among countries having lower rates.

Box II.3. Estimation of “emigration rates” by educational attainment and country of origin

Until the constitution of the data set described in this paper, there was limited data on the extent of international mobility of the highly skilled. One study by Carrington and Detragiache (1998), which has recently been updated by Adams (2003), relies on United States census data on the foreign-born and OECD immigrant stock data from the *Trends in International Migration* data base to construct a data base for emigration by level of education and by country of origin. The authors use the United States 1990 Census data to determine the educational profile of immigrants by country of birth and apply it to immigrants (in many cases, foreigners) living in other OECD countries to estimate the total stocks of migrants by level of education and country of origin. The Barro and Lee (1993) database on educational attainment levels is the source for the stock of the population by level of education in countries of origin. This then becomes the denominator of reference to estimate the emigration rates.

The estimates based on this methodology are subject to a number of limitations. One significant problem concerns the assumptions made because of data availability limitations. In particular, the foreign-born population in EU countries is assumed to be the foreign population and foreigners of a particular nationality are considered to have the same educational profile as the foreign-born of the United States. As a result the estimates tend to be problematical for small source countries and countries whose citizens tend to migrate to countries other than the United States. In addition, Cohen and Soto (2001) have shown that the Barro and Lee (1993) database on educational attainment is of uneven quality.

The database on immigrants and expatriates in OECD countries, which is the basis of this paper, has direct measures of the educational attainment of immigrants for all OECD receiving countries, and thus can avoid making the assumptions of previous studies. “Emigration rates” can be produced by level of qualification and country of origin. The “emigration rate” for country i and education level l (“emigration rate $_{i,l}$ ”) is calculated by dividing the expatriate population from the country of origin i and level of education l ($Expatriates_{i,l}$) by the total native-born population of the same country and level of education ($Native\ Born_{i,l} = Expatriates_{i,l} + Resident\ Native\ born_{i,l}$) (see also note 4). Three levels of qualification are considered (see Annex II.A1 for more details). Highly skilled persons correspond to those with a tertiary level of education.

Two sets of estimates of the $Resident\ Native\ born_{i,l}$ using two reference data bases for the structure of education of the population 15+ in origin countries have been produced. The first makes use of an updated version of Barro and Lee (1993) for the year 2000 which covers 113 countries (Barro and Lee, 2000). The second database covers 95 countries (Cohen and Soto, 2001). The authors of the latter have used the OECD education database plus some other sources for non-member countries to construct a new database on human capital stock in 2000. Data for the total population come from the World Development Indicators. A spearman rank correlation test confirms that the two calculations produce a similar classification ($\rho = 0.94$), despite significant differences for some countries (e.g. Argentina, Chile, Zimbabwe, Singapore and Uruguay).

Because of differences in the population stocks between the World Bank figures and those obtained directly from OECD censuses (partly attributable to differences in reference years) and differences in the specification of levels of education, some differences appear when comparing the “emigration rates” calculated for OECD countries from these two data sets with those discussed and presented earlier for OECD countries alone, based on census data.

Source: The OECD database is available at www.oecd.org/migration.

Table II.5. **Highly skilled expatriates from selected non-OECD countries**¹

Percentages of total expatriates

	Cohen and Soto (2001)	Highly skilled aged 15+	Barro and Lee (2000)	Highly skilled aged 15+
15 non-OECD countries with the lowest percentage of highly skilled 15+ expatriates in OECD countries	Brazil	1.7	Brazil	1.2
	Myanmar	1.7	Thailand	1.4
	Indonesia	1.9	Indonesia	1.5
	Thailand	1.9	Paraguay	1.8
	Bangladesh	2.0	Argentina	1.8
	Paraguay	2.0	China	2.4
	Nepal	2.1	Myanmar	2.4
	India	3.1	Peru	2.7
	Bolivia	3.1	Nepal	2.9
	China	3.2	Bangladesh	3.0
	Jordan	3.2	Bolivia	3.1
	Venezuela	3.3	India	3.4
	Costa Rica	4.0	Egypt	3.4
	Syria	4.3	Venezuela	3.5
	Egypt	4.4	Swaziland	3.5
15 non-OECD countries with the highest percentage of highly skilled 15+ expatriates in OECD countries	Guyana	83.0	Guyana	76.9
	Jamaica	81.9	Jamaica	72.6
	Haiti	78.5	Guinea-Bissau	70.3
	Trinidad and Tobago	76.0	Haiti	68.0
	Fiji	61.9	Trinidad and Tobago	66.1
	Angola	53.7	Mozambique	52.3
	Cyprus	53.3	Mauritius	50.1
	Mauritius	53.2	Barbados	47.1
	Mozambique	47.1	Fiji	42.9
	Ghana	45.1	Gambia	42.3
	United Rep. of Tanzania	41.7	Congo	33.7
	Uganda	36.4	Sierra Leone	32.4
	Kenya	35.9	Ghana	31.2
	Burundi	34.3	Kenya	27.8
	Sierra Leone	33.3	Cyprus	26.0

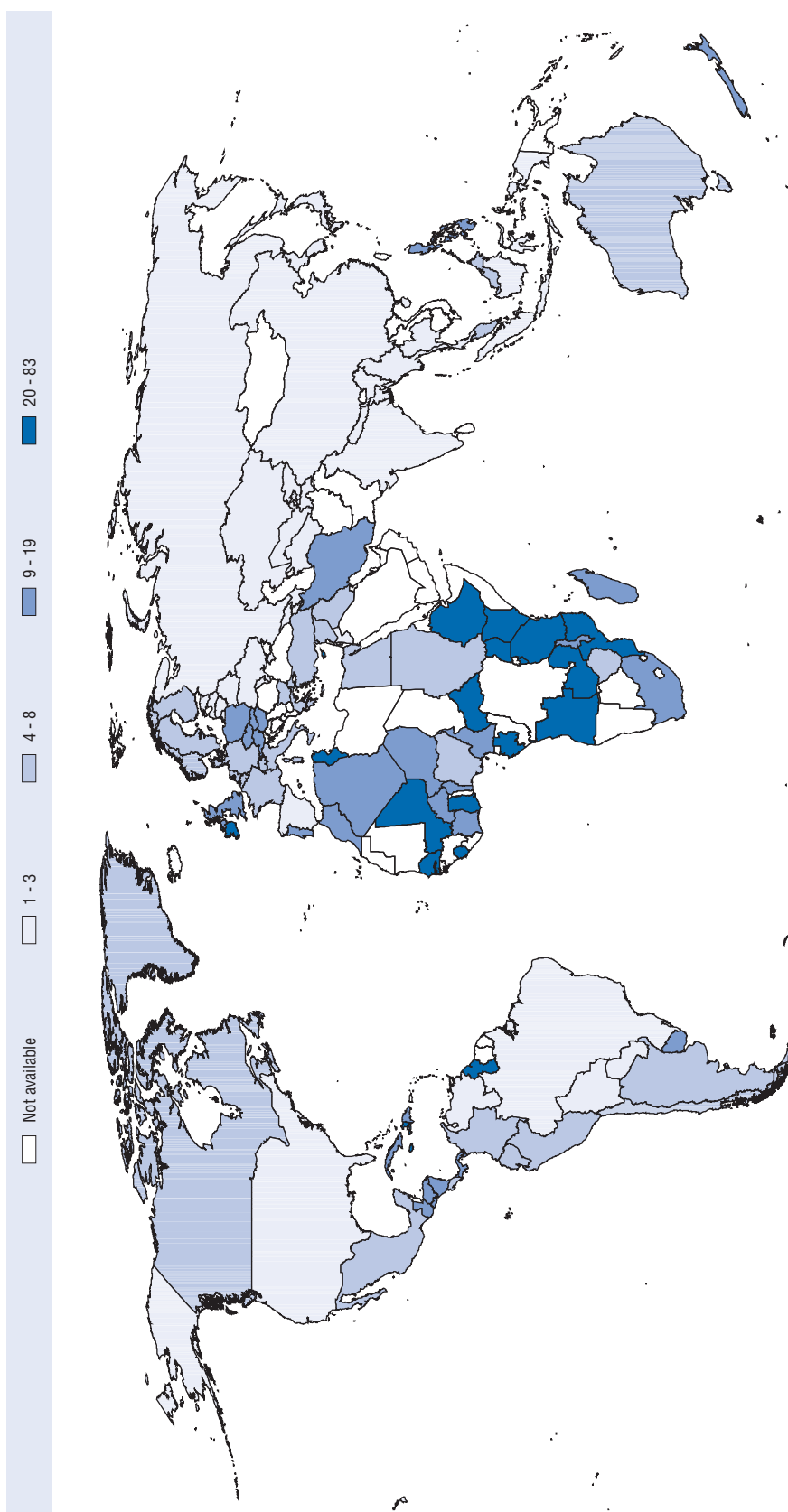
1. Two different sources for the educational attainment of non-OECD countries have been used. They are identified at the top of each column. See Box II.3 and bibliography for the detailed references.

Among countries with low “emigration rates” of highly qualified persons (*i.e.* inferior to 5%), we find most of the large countries included in the database (*i.e.* Brazil, Indonesia, Bangladesh, India and China). At the other end of the spectrum, smaller countries, a number of which are islands such as Jamaica, Haiti, Trinidad and Tobago, Mauritius or Fiji, have more than 40% of their highly skilled populations abroad and sometimes as much as 80%. The importance of the size of the origin country is confirmed by simple correlation analysis (see Figure II.4a).

This first result stresses the heterogeneity of situations among non-member countries and the possibility that emigration of highly skilled workers may adversely affect small countries, preventing them from reaching a critical mass of human resources, which would be necessary to foster long-term economic development.¹⁸

The world map (see Map II.1) presents “emigration rates” of the highly skilled for all countries, with African countries standing out as those having particularly high “emigration rates”. Anglophone African countries as well as Portuguese-speaking countries (*e.g.* Mozambique and Angola, but also Cape Verde) record the highest brain drain

Map II.1.1. Percentage of highly skilled expatriates to OECD countries among all highly skilled born in the country

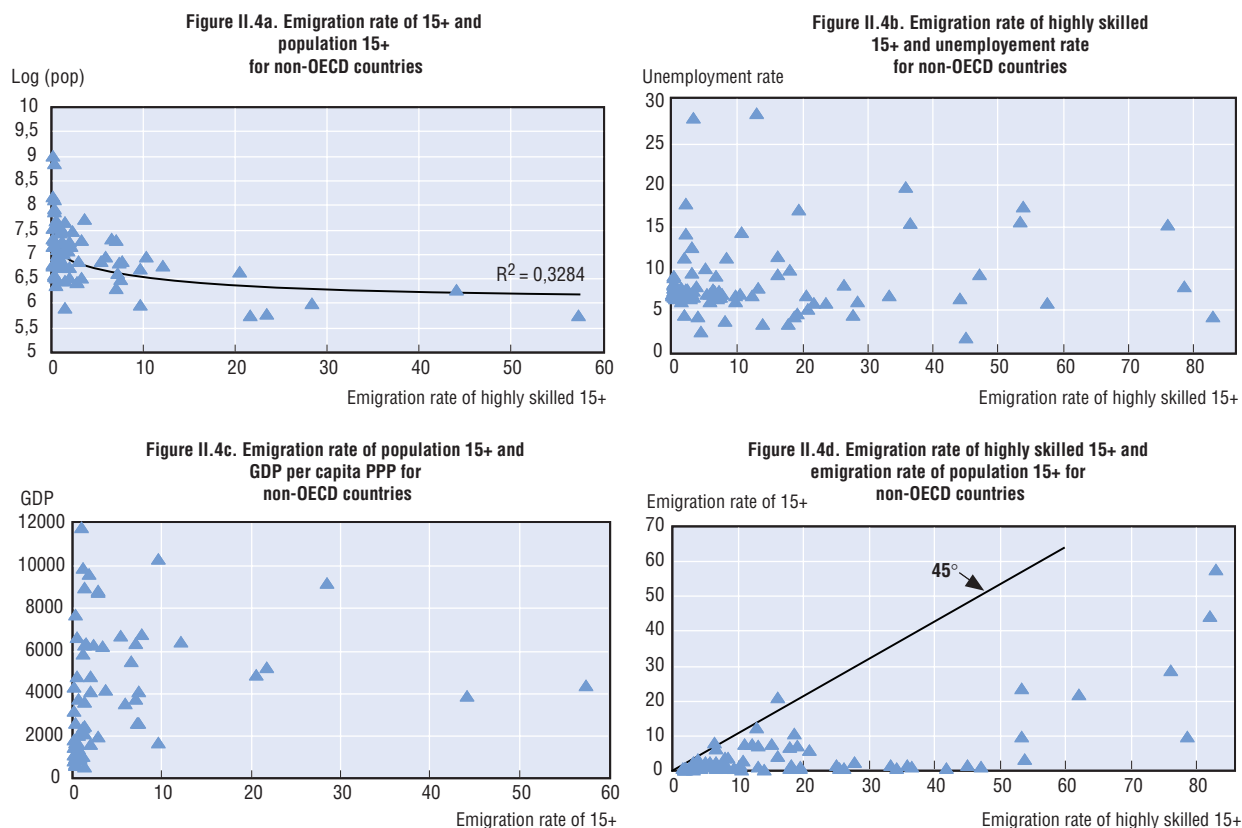


Source: See Annex II.A1, Secretariat calculations based on Cohen and Soto (2001) for highly skilled stocks in countries of origin.

rates. Emigration of the highly skilled is also quite significant in Central America but more moderate in Asia, with the relative exceptions of Hong Kong and Singapore. The former USSR faces intensive migration from former soviet republics towards Russia, which unfortunately it is not possible to illustrate here.¹⁹ However, emigration of the highly skilled from countries of the former USSR, considered as a whole, towards OECD countries remains moderate relative to the total stock of qualified persons in these countries.

Determinants of emigration of the highly skilled are not self-evident. Economic theory would predict that differences in wage levels and in returns to education between sending and receiving countries are significant elements. Figures II.4b and c show that the correlation between the “emigration rate” of people aged 15+ or of the highly skilled is not strongly correlated to the unemployment rate in origin countries or to GDP per capita at PPP.²⁰ On the other hand, Figure II.4d clearly illustrates the strong selectivity of migration in favour of the highly skilled. For almost all countries reviewed, the “emigration rate” of the highly skilled exceeds that of persons 15 and over as a whole.

Figure II.4. “Emigration rates” for 15+ and highly skilled 15+ and demo-economic situation for non-OECD countries



Note: Calculations are made on population 15 and over. The regression curves represent a power regression in Figure II.4a.

Sources: Emigration rates are calculated with Cohen and Soto (2001) data. Data on unemployment come from the ILO (Laborsta) and data on GDP per capita at PPP (2001) from World Bank (WDI).

5. Recent policy measures in OECD countries for facilitating the international recruitment of the highly skilled

The above paragraphs have provided a descriptive overview of, among others, movements of the highly skilled from and to OECD countries. The development of information technology and the growing role of human capital in economic growth have contributed to increasing the demand for skilled labour significantly in most OECD countries during the 1990s (OECD, 2002). IT competencies and skills, however, are not the only ones in demand. Population ageing in most OECD countries and the related increase in health care requirements are increasing the demand for medical personnel. Doctors, nurses, nursing auxiliaries and care assistants are particularly sought after in several member countries. The same applies to teachers, translators, human resources in science and technology (HRST) or in the biomedical or agro-food sectors, for example.

In the medium term in several OECD countries, retiring baby-boomers will generate relatively high demand for replacement labour in these and other specific occupations. While some and perhaps many of these vacancies will be filled by native-born new entrants and re-entrants to the workforce, some will also be filled by immigrants.

Competition is keen among OECD member countries to attract human resources they lack and to retain those who might emigrate. Many countries amended their legislation in the late 1990s to facilitate the entry of skilled foreign workers and to allow foreign students to access their labour markets (under certain conditions and for specific occupations) upon graduation (see Tremblay, 2001 and OECD, 2004). Most countries introduced more flexibility into their existing labour migration policies, while others also launched more specific recruitment programmes to meet labour shortages (Doudeijns and Dumont, 2002). The recent economic downturn did not significantly affect this trend although some countries have reintroduced restrictions in some sectors.

In Denmark, France, Ireland, the Netherlands and the United Kingdom, the application of labour-market testing criteria has been relaxed for those occupations reflecting current labour market needs. These occupations include IT specialists, highly skilled workers and, in some cases, biotechnology, medicine, healthcare and education professionals, as specified, for example, in the United Kingdom's *Shortage Occupation List*.²¹

Although family preference is the cornerstone of permanent immigration policy in the United States, the country nonetheless admits a large number of permanent highly skilled foreign professionals (almost 180 000 in 2002), as well as highly skilled workers on renewable three-year visas (H-1B visas). This temporary immigration is subject to an annual quota which was set at 195 000 until the end of 2003 (it has been reduced to 65 000 since then). In 2001 in Switzerland, the quota for highly skilled workers was increased by almost 30% even though it had remained unchanged for more than 10 years prior to this. Japan and Korea share a determination to confine immigration to highly skilled workers. In the past ten years, high-skilled immigration has increased by 40% in Japan and more than ten-fold in Korea.

Some OECD countries have also created new programmes to facilitate the international recruitment of highly skilled workers. Norway and the United Kingdom, for instance, have introduced programmes to allow highly skilled foreign workers to come to seek work for a limited period of time. Although these programmes are still limited (approximately 5 000 persons for each country), they represent a significant change with regard to the usual migration policies of European countries, which generally require a job offer as a

prerequisite for labour migration. Germany on its side has developed a special programme to recruit IT specialists, which has been extended until January 2005. Approximately 15 800 permits have been granted between August 2000 and January 2004. In addition, the German authorities have recently reformed their immigration law to facilitate the entry of highly skilled workers, such as engineers, computer technicians, researchers and business leaders.

In settlement countries, such as Australia, Canada and New Zealand²² permanent immigration is subject to a points system with an increasing emphasis on the potential immigrant's profile (age, education, skills, work experience). Permanent skilled immigration to these countries has significantly increased in the last four years (by almost 25%) and temporary immigration of highly skilled workers is facilitated more and more. More or less in the same vein, the Czech Republic has recently implemented a programme aiming at recruiting highly skilled workers through a point system.

In addition to immigration policy measures, some OECD countries have introduced specific fiscal incentives to attract highly skilled migrants (see Table II.6). Some of these offer virtual income-tax-free status for up to 5 years for certain categories of highly qualified personnel most in need, or large tax deductions (*e.g.* 25% in Sweden, 30% in the Netherlands, 35% in Austria or 40% in Korea). New legislation along the same lines has been recently adopted in France and is under consideration in New Zealand.

Conclusions

If receiving countries and migrants are generally believed to profit from the opening up of borders to international migration of highly skilled human capital, the impact on sending countries is not so clear. For instance, some observers have claimed that the increase in the expected return on human capital as a result of expatriation increases incentives to invest in human capital in sending countries and that this increase is sufficient to off-set the depletion effect of emigration on human resources in these countries. This argument seems problematical, both theoretically and empirically.²³ On the other hand, the potential negative impact of emigration on the supply of human capital needs to be seen in the context of the employment situation in the origin country (the extent of participation and unemployment, the productivity of human capital). In many cases, expatriated professionals would have had few opportunities to work at home in their field.

Results presented in this paper based on the new database on immigrants and expatriates in OECD countries, show that:

- The percentage of the foreign-born in European OECD countries is generally higher than the percentage of foreigners. Migration to a number of European countries (*e.g.* Sweden, Germany, Austria, Greece or France) is significantly higher than is generally reported and approaches levels that are as high in relative terms as observed, for example, in the United States.
- The stock figures shown here reflect migration waves over a long period. Although recent migration to OECD countries tends to come largely from non-OECD countries, migration between OECD countries continues to have a significant impact. This migration is quite selective towards highly skilled migrants, underlining the effects of the current competition between member countries to attract “the best and the brightest” from other countries, both inside and outside the OECD area.

Table II.6. **Fiscal incentives for highly skilled immigrants**

Australia	In order to encourage businesses requiring a skilled labour force to locate in Australia, since July 1, 2002, foreign source income of eligible temporary residents is exempt from tax for 4 years.
Austria	An individual who has not had a residence in Austria during the past 10 years, who maintains his primary residence abroad and has an assignment with an Austrian employer for less than 5 years benefits from tax deductions for up to 35% of the taxable salary income for expenses incurred in maintaining a household in Austria, educational expenses and leave allowances.
Belgium	Certain foreign executives, specialists and researchers residing temporarily in Belgium are eligible for a special tax regime that treats them as non-residents. Taxable income is calculated by adjusting the remuneration according to the number of days spent outside Belgium. Reimbursements of expenses incurred by an employee as a result of his temporary stay in Belgium are not subject to personal income tax.
Denmark	A special expatriate tax regime applies to foreigners employed by Danish-resident employers. Under qualifying contracts, salary income is taxed at a flat rate of 25% instead of the usual rates of 39% to 59%. To qualify, expatriates must reside in Denmark and earn more than 50 900 DKK a month in 2001. This tax regime is valid for up to 36 months.
Finland	A foreigner working in Finland may qualify for a special tax at a flat rate of 35% during a period of 24 months if he receives any Finnish-source income for duties requiring special expertise and earns a cash salary of € 5 800 or more per month. This law provides that the expert has not been resident in Finland any time during the five preceding years.
France	Recent legislation changes which aim at encouraging foreign professionals to work in France include a 5-year tax exemption for bonuses paid to foreign expatriates where these are directly related to their assignment in France, and tax deductions for social security payments made by the expatriates in their home countries. A deduction will also be available for pension and health care payments made outside France. It applies to foreign professionals (including French nationals with a foreign labour contract who have been residing out of France for at least 10 years) coming to France from 1 January 2004.
Japan	For expatriates living in Japan, relocation allowances and once-a-year home-leave allowances are generally tax-free
Korea	Since January 2003, tax-free allowances of up to 40 per cent of salary to cover cost of living, housing, home leave and education. Tax-exempt salary for certain sectors for up to 5 years if the individual is <i>i</i>) employed under a tax-exempt technology-inducement contract or <i>ii</i>) a foreign technician with experience in certain industries.
Netherlands	Expatriates may qualify for a special facility called the “30 per cent” (previously the “35 per cent”). This enables an employer to pay, for up to 10 years, employees seconded in the Netherlands a tax-free allowance of up to 30% of regularly received employment income and a tax-free reimbursement of school fees for children attending international schools.
New Zealand	A government discussion document, released in November 2003, outlines proposals to exempt the foreign-sourced income of certain migrants and returning New Zealanders from New Zealand’s international tax regime. It is aimed at ensuring that New Zealand’s tax system does not discourage the recruitment of overseas employees. The Government has proposed two possible approaches: <ul style="list-style-type: none"> • a narrow exemption that would apply for seven years and focus on those tax rules that are more comprehensive than the international norm; and • a second option that would apply for three years and provide eligible taxpayers with a broad exemption from paying New Zealand tax on all foreign-sourced income.
Norway	Expatriates expected to reside in Norway for 4 years or less may be allowed a 15 per cent standard deduction from their gross income instead of itemised personal deductions.
Canada	Researchers can benefit from 5-year tax relief in the province of Québec on 75% of their personal income if they settle in Quebec to work in R&D in a firm.
Sweden	Since 1st January 2001 foreign key personnel who are experts and scientists with knowledge and skills that are scarce in Sweden may benefit from a new expatriate regime. No taxes are paid for the first 25% of their income. This is valid for a maximum period of 10 years.
United Kingdom	Persons who are seconded to the UK and declare their intention to remain in the UK on a temporary basis, can claim tax relief on their housing costs and traveling costs. Non-ordinary residents can also claim tax relief for days worked outside the UK.

Sources: UK Home Treasury (2003), Ernst and Young (2001) and national ministries.

- In most OECD countries, the number of immigrants with tertiary education exceeds the number of highly qualified expatriates to other OECD countries. On this measure, most OECD countries would appear to benefit from the international mobility of the highly skilled. This conclusion, however, must be considered as tentative, because the database described here does not cover expatriates to OECD non-member countries.
- Among non-member countries the impact of the international mobility of the highly skilled is diverse. The largest developing countries seem not be significantly affected and indeed may benefit from indirect effects associated with this mobility (return migration, technology transfers, remittances...). At the other end of the spectrum, some of the

smallest countries, especially in the Caribbean and in Africa, face significant “emigration rates” of their elites. Further analysis is needed to better understand the determinants, the dynamics and the impact of the international mobility of the highly skilled on these countries.

Notes

1. This document has been prepared by J.C. Dumont (OECD) and G. Lemaître (OECD). The authors would like to acknowledge the contribution of national participants in the data collection effort and of John Martin, Martine Durand and Jean-Pierre Garson, who have provided comments and advice on a preliminary version of this paper.
2. Some foreign-born persons were born abroad with the citizenship of the current country of residence; these persons would not normally be considered as immigrants. This phenomenon is common only in a certain number of countries; it can generally be ignored in most countries without risk of providing a distorted picture of the immigrant population.
3. There are connotational differences between the terms “nationality” and “citizenship”. They refer to more or less the same notion, but the former tends to be used in countries where citizenship at birth is based on that of the parents (*jus sanguinis*), whereas the latter is common in countries where citizenships granted to persons born in the country (*jus soli*). Hereafter, we will use the two terms interchangeably.
4. The term “expatriates” is used in this paper to refer to all foreign-born persons living abroad, regardless of the current or eventual duration of their stay abroad. Obviously, many and perhaps most will never return to their country of birth to live.
5. Some of the measures adopted include reinforcing tax incentives to promote return migration, seeking to enhance the environment for scientific and technical research or improving the status of certain professions.
6. See also Adams (2003), who applied the methodology developed by Carrington and Detragiache (1998) to more recent data.
7. The network created associates statisticians from NSOs in 29 member countries, as well as observers from several multilateral organisations (the ILO, Eurostat, the European Commission, the UN statistics division, the UN Economic Commission for Europe).
8. “Emigration rates” are calculated by dividing the number of foreign-born residing in OECD countries and originating in a particular country by the total number of natives from that country, including those no longer living in the country. It does not correspond to the usual definition of an emigration rate, which relates flows of migrants over a certain period of time to the initial stock of persons in the origin country.
9. The 2000 United States Census enumerated close to 8 million more persons than had been anticipated on the basis of the post-decenial population projections. Most of these were believed to be undocumented aliens.
10. Six countries have provided detailed information on nationality at birth (Belgium, Canada, France, Norway, Switzerland and the United States).
11. Portugal could have been added to this list, but in this case the result would be largely attributable to persons repatriated from Angola in the mid-1970s.
12. In a recent referendum in Switzerland, a proposal to facilitate the acquisition of nationality for “third-generation” immigrants was rejected.
13. There is, to a certain extent, an implicit assumption here, which is that persons born abroad were educated abroad. This is obviously not always the case.
14. The figure is approximately 422 000 if one excludes the foreign-born offspring of American parents.
15. There are also a significant number of Japanese born-persons in France (14 300), i.e. more than Korean-born persons born in France (13 400), but fewer than Japanese-born persons living in the United Kingdom (37 500).
16. These are likely to be mostly retired.

17. Stocks of persons, both emigrants and immigrants, are being considered here. In the case of Ireland, for instance an analysis of net flows of migrants would produce a rather different picture, including for the highly skilled.
18. Dumont (1999) shows that “convergence groups” can be identified based on the human capital stock (education and health) available at the beginning of the period considered.
19. As the database only covers OECD countries, it is not possible to evaluate migration from former soviet Republics to Russia. For more information and estimates on this issue, see Eisenbaum (2005 forthcoming).
20. Since current migrant stocks reflect the cumulative impact of different historical migration waves, it is not entirely surprising to find no strong correlation with recent GDP per capita at PPPs or unemployment rates in origin countries. Ideally this analysis would be carried out using the difference in receiving and host-country unemployment rates together with the wage gap minus the expected cost of migration. Further analysis is needed to better understand the main determinants of international migration in general and of highly skilled migration in particular.
21. IT occupations were withdrawn from the list in the UK in 2002 because of the economic downturn in this sector. A special regulation for IT specialists was also rescinded in 2004 in France.
22. Following a comprehensive review of its skilled immigration policy, New Zealand has recently introduced a new Skilled Migrant Category to replace the General Skills Category. This change is a deliberate policy shift to promote the active recruitment of the skilled migrants that New Zealand needs (see Little 2004 for details).
23. Commander, Kangasniemi and Winters (2004) show that the conditions to be met to reach such a result are indeed very restrictive and depend on the size of migration flows, the type of selection process in receiving countries as well as the functioning of the education system in source countries.

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ANNEX II.A1

Data Sources and Data Availability

Of the 29 countries taking part in the project, 23 have population censuses and seven have population registers. Other sources were identified by some countries but the census or the population register is generally the most suitable source (see attached table on data sources).

For the great majority of the countries involved, data by country of birth are available. For some countries the situation is, however, more problematic. In the cases of Japan, for example, the data by country of origin and level of education were not published or processed at the time of the drafting of this note even if they appear in the census. In the case of the Netherlands, the data on education are not available from the population register and it was thus necessary to use the labour force survey averaged over several years (2000-2002), in order to estimate the foreign-born by level of education and country of birth (for those countries of birth for which there were samples large enough to support reliable estimates).

Korea and Japan do not identify the foreign-born in their censuses. For these countries, because naturalisations are rare, nationality can serve as a reasonable proxy for country of birth. This approximation was not possible, however, in the case of Germany where the only data available, from the annual Microcensus (1999-2002), does not record the place of birth, although it does record the nationality and whether or not a person was born in Germany. In this case to compile data on expatriates the following assumptions and adjustments were made: i) for non-German citizens born abroad, it was assumed that their place of birth was the same as their nationality, ii) for "unknown" place of birth or nationality in the Microcensus, a response was attributed according to the distribution observed when a response was available, iii) for German citizens born abroad, the German Socioeconomic Panel, which does identify the place of birth, was used for those countries for which the sample was large enough to produce reliable estimates. The data included in the publicly available file, however, does not include the adjustments which were made through the GSOEP.

With regard to the structure of the levels of qualification retained, it was decided to take into consideration five levels compatible with the International Standard Classification of Education (ISCED): ISCED 0/1/2: Less than upper secondary; ISCED 3/4: Upper secondary and post-secondary non-tertiary; ISCED 5A: "Academic" tertiary; ISCED 5B: "Vocational" tertiary; ISCED 6: Advanced research programmes. The detail at the higher levels, however, was available only for a subset of countries. For France, Switzerland, Luxembourg and Austria 5A and 6 are not distinguishable; for the United States, Turkey,

Mexico and Spain 5A and 5B are not distinguishable; for the Slovak Republic, Korea, Netherlands and Hungary 5A, 5B and 6 are not distinguishable.

The objective was to minimize residual (i.e. "other") categories, with regard to the coding of countries of birth. An attempt was made to preserve the maximum information available while distinguishing between continental/regional residual categories whenever this was possible (i.e. "other Africa", "other Europe", "other Asia", "other South and Central America and Caribbean", "other Oceania", "other North America").

With regard to split, recomposed or newly constituted countries, there was little choice but to respect the coding in the national data collection, which varies from one country to another. In the United States, for example, people born in Korea have the choice of three ways to indicate their country of birth: Korea, North Korea or South Korea. More than 80% of them (80% of the nationals and 85% of foreigners) indicated having been born in Korea,* without further specification. In the censuses of many member countries the Czech Republic and Slovak Republic are aggregated under the name of the former Czechoslovakia. The same applies to the former USSR and the former Yugoslavia and Yemen.

To produce a consistent list of countries of birth across receiving countries, some minor adjustments had to be made, especially with respect to small islands and overseas territories. This recoding explains the small differences that might exist with national estimates for foreign born and native born populations. The following recodings were carried out.

AUS	DNK	FRA	GBR	PRT	USA ¹
• Heard and McDonald Islands	• Faeroe Islands	• French southern territories	• Channel Islands	• Madeira Islands	• US minor island
	• Greenland	• Tromelin Island	• Isle of Sark	• Azores Islands	• Christmas isle
		• Guadeloupe	• Isle of Man		• Wake Island
		• Martinique			• Palmyra Atoll
		• Reunion			• Navassa Island
		• Juan De Nova Island			• Midway Islands
		• Guyane			• Johnston Atoll
		• Mayotte			• Howland Island
		• Saint-Pierre-et-Miquelon			• Baker Island

1. People born in Puerto Rico are considered as foreign born in the United States.

* It is not possible to distinguish between Koreans who emigrated to the United States before and after 1953.

Data sources

	Data year(s)	ISO code	Type of source	Source description
Australia	2001	AUS	CEN	Australian Census of Population and Housing
Austria	2001	AUT	CEN	Census of Population
Belgium	2001	BEL	GSS	General Socio-Economic Survey
Canada	2001	CAN	CEN	Census of Population
Czech Rep	2001	CZE	CEN	Census of population
Denmark	Yearly since 1981	DNK	REG	Register-based population and labour force statistics
Finland	Yearly	FIN	REG	Population statistics
France	1999	FRA	CEN	Census of Population
Germany	Yearly	DEU	LFS	Microcensus
Greece	2001	GRC	CEN	Census of population
Hungary	2001	HUN	CEN	Census of Population
Ireland	2002	IRL	CEN	Census of Population
Italy	2001	ITA	CEN	Census of Population
Japan	2000	JPN	CEN	Census of Population
Korea	2000	KOR	CEN	Census of population
Luxembourg	2001	LUX	CEN	Census of Population
Mexico	2000	MEX	CEN	Census of population
Netherlands	1995-2000	NDL	REG	Matched data from the Population Registers, the Tax Department and the Ministry of Justice
Netherlands	Yearly	NDL	LFS	Labour Force Survey
New Zealand	2001	NZL	CEN	Census of Population and Dwellings
Norway	Varies	NOR	REG	Various administrative and statistical registers
Poland	2001	POL	CEN	Census of population
Portugal	2001	PRT	CEN	Census of population
Slovak Rep	2001	SVK	CEN	Census of population
Spain	2001	ESP	CEN	Census of Population
Sweden	Yearly	SWE	REG	Total Population Register TPR
Sweden	Yearly	SWE	EDU	Education register
Switzerland	2000	CHE	CEN	Census of Population
Turkey	2000	TUR	CEN	Census of Population
United Kingdom	2001	GBR	CEN	Census of Population
United States	2000	USA	CEN	Census 5% Public Use Microdata Sample

ANNEX II.A2

Table II.A2.1. **Stocks and percentages of non-citizens and foreign-born in OECD countries**

Total population

	Native-born			Total	Foreign-born			Total	Unspecified place of birth	Grand total	Percentage of foreign-born ¹	Percentage of non-citizens		
	Citizens	Non-citizens	Unspecified		Citizens	Non-citizens	Unspecified							
AUS	13 411 351	34 173	183 963	13 629 487	2 739 559	1 263 728	69 926	4 073 213	1 066 542	18 769 242	23.0	7.4	AUS	2001
AUT	6 913 512	115 840	175	7 029 527	408 093	593 420	1 019	1 002 532	867	8 032 926	12.5	8.8	AUT	2001
BEL	9 001 480	194 443	514	9 196 437	447 555	650 705	935	1 099 195	718	10 296 350	10.7 (9.3)	8.2	BEL	2002
CAN	23 920 315	1 725		23 922 040	4 150 095	1 566 920		5 717 015		29 639 055	19.3 (19.0)	5.3	CAN	2001
CHE	5 109 295	338 107		5 447 402	459 569	1 111 187		1 570 756	269 852	7 288 010	22.4 (20.2)	20.5	CHE	2000
CZE	9 556 459	20 018	607	9 577 084	357 355	90 411	711	448 477	204 499	10 230 060	4.5	1.2	CZE	2001
DEU			71 973 166	71 973 166			10 256 083	10 256 084		82 229 250	12.5		DEU	1999-2002
DNK	4 939 264	42 973		4 982 237	145 508	215 545		361 053	25 064	5 368 354	6.8	5.0	DNK	2002
ESP	38 603 844	71 326		38 675 170	671 514	1 500 687		2 172 201		40 847 371	5.3	3.8	ESP	2001
FIN	5 031 826	12 928	158	5 044 912	54 131	75 867	1 450	131 448	4 755	5 181 115	2.5	1.7	FIN	2000
FRA	52 142 848	509 598		52 652 446	3 114 654	2 753 588		5 868 242		58 520 688	10.0 (7.4)	5.6	FRA	1999
GBR			53 923 642	53 923 642			4 865 563	4 865 563		58 789 205	8.3		GBR	2001
GRC	9 705 670	105 248	285	9 811 203	466 165	656 382	93	1 122 640	254	10 934 097	10.3	7.0	GRC	2001
HUN	9 896 815	8 520	49	9 905 384	208 259	84 485	187	292 931		10 198 315	2.9	0.9	HUN	2001
IRL	3 405 941	7 290	45 248	3 458 479	179 034	216 971	4 011	400 016		3 858 495	10.4	5.9	IRL	2002
JPN ²	125 625 759			1.26E+08		1 294 341		1 294 341		126 920 100		1.0	JPN ²	2001
KOR ²	45 985 289			45 985 289		135 105	15 707	150 812		46 136 101		0.3	KOR ²	2000
LUX	257 446	37 249		294 695	18 590	124 062		142 652	2 192	439 539	32.6	36.9	LUX	2001
MEX			94 925 622	94 925 622			492 617	492 617	2 065 173	97 483 412	0.5		MEX	2000
NLD	14 268 673	103 025		14 371 698	1 050 600	564 777		1 615 377		15 987 075	10.1	4.2	NLD	2001
NOR	4 195 719	22 752	12	4 218 483	158 865	174 875	29	333 769		4 552 252	7.3 (6.7)	4.3	NOR	2003
NZL	2 890 869			2 890 869	22 212		676 335	698 547	147 813	3 737 229	19.5		NZL	2001
POL	36 765 038	10 135	96 108	36 871 281	741 880	29 748	3 654	775 282	583 517	38 230 080	2.1	0.1	POL	2002
PRT	9 692 065	11 987	593	9 704 645	431 357	219 633	482	651 472		10 356 117	6.3	2.2	PRT	2001
SVK	4 673 150	5 888	41 592	4 720 630	98 392	18 403	2 277	119 072	539 753	5 379 455	2.5	0.5	SVK	2001
SWE	7 826 472	71 123		7 897 595	672 990	404 606		1 077 596	479	8 975 670	12.0	5.3	SWE	2003
TUR			66 525 256	66 525 256	997 314	262 061		1 259 375	1 155	67 785 786	1.9		TUR	2000
USA	246 787 150			2.47E+08	16 069 523	18 565 268		34 634 791		281 421 941	12.3 (11.1)	6.6	USA	2000
Total	690 606 250	1 724 348	287 716 990	9.8E+08	33 663 214	32 572 775	16 391 079	82 627 069	4 912 633	1 067 587 290	7.8	4.5	Total	

1. Figures in parentheses indicate the percentage of foreign-born in total population after excluding foreign-born citizens at birth.

2. In the absence of place of birth for Japan and Korea, it has been assumed that all non-citizens are foreign-born and that nationals are native-born (see Annex II.A1 for further details).

Sources: See Annex II.A1, Secretariat calculations.

Table II.A2.2. **Acquisition of citizenship in receiving countries**

	Total number of foreign-born	Foreign-born with the citizenship of the country of residence	Percentage of foreign-born with the citizenship of the country of residence
AUS	4 003 287	2 739 559	68.4
AUT	1 001 513	408 093	40.7
BEL	1 098 260	447 555	40.8
CAN	5 717 015	4 150 095	72.6
CHE	1 570 756	459 569	29.3
CZE	447 766	357 355	79.8
DNK	361 053	145 508	40.3
ESP	2 172 201	671 514	30.9
FIN	129 998	54 131	41.6
FRA	5 868 242	3 114 654	53.1
GRC	1 122 547	466 165	41.5
HUN	292 744	208 259	71.1
IRL	396 005	179 034	45.2
LUX	142 652	18 590	13.0
NLD	1 615 377	1 050 600	65.0
NOR	333 740	158 865	47.6
POL	771 628	741 880	96.1
PRT	650 990	431 357	66.3
SVK	116 795	98 392	84.2
SWE	1 077 596	672 990	62.5
USA	34 634 791	16 069 523	46.4

Sources: See Annex II.A1, Secretariat calculations.

Table II.A2.3. **Stocks of total foreign-born by region of origin, OECD countries**

	<i>Of which:</i>			<i>Of which:</i>			Latin America	North America	Caribbean	Oceania	EU25	Other Europe	Unspecified	
	Africa	North African countries	%	Asia	China and Chinese Taipei	%								
AUS	191 501	2 573	1.3	1 115 655	232 320	20.8	74 893	81 018	32 000	423 428	1 889 893	264 819	6	AUS
AUT	19 934	3 560	17.9	57 236	8 254	14.4	6 054	9 029		1 931	364 624	527 007	16 717	AUT
BEL	247 515	139 799	56.5	68 494	9 410	13.7	20 387	18 071	3 976	1 468	621 471	117 787	12	BEL
CAN	323 580	52 485	16.2	2 040 590	657 930	32.2	336 570	287 465	285 295	53 215	2 014 255	375 710	335	CAN
CHE	68 801	21 153	30.7	101 599	8 318	8.2	48 327	29 319	8 834	4 787	854 305	352 962	101 822	CHE
CZE	2 374	588	24.8	21 365	1 251	5.9	870	2 687	595	341	344 256	75 989		CZE
DEU	175 665	51 230	29.2	567 021			47 578	81 308			2 552 578	5 244 548	1 587 387	DEU
DNK	31 875	6 520	20.5	110 454	4 590	4.2	9 208	11 123	785	2 249	118 004	77 355		DNK
ESP	423 082	343 819	81.3	86 669	28 848	33.3	744 221	25 141	95 979	4 443	597 948	194 676	42	ESP
FIN	9 713	1 783	18.4	18 375	2 120	11.5	1 817	4 086	261	750	51 681	44 764	1	FIN
FRA	2 862 569	2 296 979	80.2	444 774	36 831	8.3	79 987	58 398	24 836	6 211	1 978 923	412 539	5	FRA
GBR	838 459	26 088	3.1	1 579 133	154 111	9.8	95 357	238 043	232 940	170 278	1 493 235	175 577	42 541	GBR
GRC	58 275	1 416	2.4	75 854	671	0.9	5 486	35 683	1 128	21 111	191 038	733 183	882	GRC
HUN	2 687	517	19.2	10 730	4 002	37.3	773	3 199	367	298	65 057	209 815	5	HUN
IRL	26 650	1 238	4.6	27 768	7 449	26.8	2 793	25 624	688	8 406	291 340	16 408	339	IRL
JPN	5 742	421	7.3	969 799	253 096	26.1	232 248	45 871	482	8 801	25 299	6 098	1	JPN
KOR				116 732	56 272	48.2		14 408		719	3 246		15 707	KOR
LUX	5 692	1 134	19.9	4 382	1 202	27.4	1 562	1 399	274	133	116 309	11 855	1 046	LUX
MEX	1 214	262	21.6	10 765	2 001	18.6	71 644	349 366	9 922	811	44 396	4 096	403	MEX
NLD	280 007	163 658	58.4	367 987	34 754	9.4	221 626	29 826	93 326	13 226	340 220	269 158	1	NLD
NOR	31 278	5 665	18.1	100 274	5 869	5.9	15 133	17 017	1 268	1 489	116 637	49 868	805	NOR
NZL	39 351	273	0.7	175 302	62 736	35.8	3 651	21 126	17 100	156 078	271 008	14 724	207	NZL
POL	2 962	741	25.0	9 479	667	7.0	920	10 566	202	671	248 868	483 223	18 391	POL
PRT	349 859	1 596	0.5	16 859	2 397	14.2	74 949	14 627	914	1 256	159 008	34 000		PRT
SVK	404	50	12.4	1 400	142	10.1	154	945	77	64	99 931	16 097		SVK
SWE	78 039	9 962	12.8	244 246	12 106	5.0	59 965	17 627	2 840	3 376	456 262	215 241		SWE
TUR	12 686	1 627	12.8	83 657	1 802	2.2	1 010	15 006	216	3 265	447 739	695 795	1	TUR
USA	988 253	58 530	5.9	8 402 240	1 550 070	18.4	13 476 759	965 485	4 469 340	288 391	4 594 095	1 442 654	7 574	USA
Total	7 078 167	3 193 667	45.1	16 828 839	3 139 219	18.7	15 633 942	2 413 463	5 283 645	1 177 196	20 351 626	12 065 948	1 794 230	Total

Note: Data for EU25 are limited to three countries (DEU, FRA and GBR) in statistics provided by Korea and to 16 countries (BEL, DNK, FIN, FRA, GRC, IRL, ITA, LUX, NLD, AUT, PRT, SWE, POL, ESP, HUN and GBR) in data provided by Germany.

Sources: See Annex II.A1, Secretariat calculations.

Table II.A2.4. **Stocks and percentages of persons by education level and place of birth in OECD countries (people 15+)**

	Native-born					Foreign-born					Unspecified place of birth									
	Less than upper secondary (ISCED 0/1/2)	Upper secondary and post-secondary non-tertiary (ISCED 3/4)	Tertiary (ISCED 5/6)	of which: PhD (ISCED 6)	Unspecified	Less than upper secondary (ISCED 0/1/2)	Upper secondary and post-secondary non-tertiary (ISCED 3/4)	Tertiary (ISCED 5/6)	of which : PhD (ISCED 6)	Unspecified										
AUS	4 282 959	45.8	1 467 214	15.7	3 610 692	38.6	145 112	1.6	890 502	1 310 051	38.3	643 732	18.8	1 465 733	42.9	120 729	3.5	442 044	743 848	AUS
AUT	1 924 574	33.4	3 203 774	55.7	626 609	10.9				456 032	49.4	362 918	39.3	104 742	11.3				795	AUT
BEL	3 209 646	46.8	2 078 319	30.3	1 570 363	22.9	30 180	0.4	613 374	443 045	54.2	197 573	24.2	176 917	21.6	9 099	1.1	201 779	513	BEL
CAN	5 864 360	31.6	6 847 165	36.9	5 834 055	31.5	59 365	0.3		1 612 380	30.1	1 709 705	31.9	2 033 490	38.0	69 300	1.3			CAN
CHE	1 024 780	25.6	2 252 546	56.3	723 364	18.1			337 712	485 466	41.6	405 183	34.7	276 791	23.7			286 745	250 763	CHE
CZE	1 809 625	22.8	5 310 328	67.0	806 551	10.2	29 446	0.4	38 276	164 538	38.4	208 718	48.8	54 766	12.8	3 037	0.7	4 212	178 184	CZE
DEU	13 011 570	23.7	31 154 820	56.8	10 675 988	19.5				3 870 908	43.7	3 612 460	40.8	1 372 254	15.5					DEU
DNK	1 648 305	41.0	1 613 993	40.2	753 930	18.8	7 895	0.2		155 216	48.6	101 842	31.9	62 243	19.5	637	0.2		23 089	DNK
ESP	19 127 995	63.9	4 993 877	16.7	5 789 438	19.4	153 138	0.5		1 029 435	55.4	423 225	22.8	404 387	21.8	18 407	1.0			ESP
FIN	1 662 854	40.3	1 497 548	36.3	967 291	23.4	22 117	0.5		59 374	52.7	31 940	28.4	21 322	18.9	1 097	1.0		4 453	FIN
FRA	19 433 046	45.8	15 874 617	37.4	7 160 516	16.9				3 066 864	54.8	1 521 910	27.2	1 011 424	18.1					FRA
GBR	18 424 701	51.2	10 314 951	28.7	7 232 100	20.1			7 209 262	1 602 168	40.6	968 116	24.5	1 374 370	34.8			558 667		GBR
GRC	4 498 041	54.4	2 662 076	32.2	1 112 057	13.4	73 774	0.9		448 046	44.8	399 653	39.9	153 083	15.3	9 112	0.9		242	GRC
HUN	3 711 782	45.1	3 636 532	44.2	879 571	10.7				113 250	41.1	107 779	39.1	54 465	19.8					HUN
IRL	1 228 075	47.8	758 006	29.5	584 325	22.7	6 739	0.3	131 206	92 939	29.6	92 011	29.3	128 762	41.0	3 655	1.2	19 292		IRL
KOR	13 132 782	36.1	13 498 737	37.2	9 703 531	26.7	568 042	1.6	11 483	33 433	23.8	61 950	44.0	45 355	32.2			78		KOR
LUX	55 971	28.7	114 240	58.6	24 890	12.8			29 853	40 499	36.7	45 807	41.6	23 916	21.7			19 539	1 627	LUX
MEX	44 760 651	72.3	10 380 897	16.8	6 757 285	10.9	373 353	0.6	528 077	86 732	36.5	60 946	25.7	89 689	37.8	14 139	6.0	4 095	174 266	MEX
NLD	4 534 737	40.7	4 426 572	39.8	2 169 015	19.5				629 462	53.0	349 889	29.4	208 863	17.6				148 818	NLD
NOR	677 175	21.2	1 776 416	55.6	739 122	23.2	10 074	0.3	210 377	38 466	18.3	106 590	50.6	65 535	31.1	3 049	1.4	80 830		NOR
NZL	578 331	30.1	819 588	42.7	521 349	27.2			226 410	102 603	18.7	276 585	50.4	170 082	31.0			74 688	119 859	NZL
POL	9 321 483	31.2	17 427 397	58.4	3 111 488	10.4	101 047	0.3	173 876	348 750	47.9	293 537	40.3	86 385	11.9	6 248	0.9	9 067	516 445	POL
PRT	6 494 230	80.0	991 642	12.2	627 711	7.7	10 223	0.1		320 778	54.7	151 806	25.9	113 348	19.3	3 039	0.5			PRT
SVK	1 057 596	28.0	2 342 010	62.0	378 694	10.0			19 483	32 933	29.3	63 013	56.1	16 424	14.6			805	405 480	SVK
SWE	1 375 361	25.0	2 868 919	52.2	1 252 919	22.8	38 438	0.7	32 452	253 195	29.6	395 962	46.2	207 558	24.2	13 107	1.5	75 394	359	SWE
TUR	36 721 637	79.4	7 030 720	15.2	2 497 755	5.4				479 520	49.3	331 728	34.1	161 557	16.6	10 988	1.1		456	TUR
USA	41 438 103	21.9	97 004 014	51.2	50 983 357	26.9	1 317 999	0.7		12 632 924	39.8	10 885 700	34.3	8 204 473	25.9	443 152	1.4			USA

Note: For Finland, "less than upper secondary" includes "unspecified" educational attainment.
Educational levels for the United Kingdom are for people aged 16-74; other age groups are coded "unspecified".

Sources: See Annex II.A1, Secretariat calculations.

Table II.A2.5. **Stocks of persons originating in OECD countries and residing in another member country (total population)**

Country of residence:	AUS	AUT	BEL	CAN	CHE	CZE	DEU	DNK	ESP	FIN	FRA	GBR	GRC	HUN	IRL	ITA
Origin country:																
AUS		1 686	1 136	20 155	34 20	230		1 663	3 913	656	4 216	10 7871	20 449	258	6 107	
AUT	19 313		3 166	22 585	54 616	7 358	13 3341	1 464	4 100	312	12 171	19 503	2 252	3 716	533	
BEL	4 900	1 523		20 990	10 738	755	22 702	1 249	28 200	206	124 709	21 668	4 671	520	1 141	
CAN	27 289	1 658	4 145		7 519	490		2 752	3 810	1 181	18 913	72 518	12 477	632	4 081	
CHE	10 753	11 713	4 274	21 595		385	28 945	1 910	53 484	615	75 598	16 010	3 567	616	882	
CZE	6 973	54 627	77	16 500	11 021			292	1 891	39	3 438	12 220	3 725	2 494	1 189	
DEU	108 220	140 099	83 386	191 140	181 984	9 647		26 559	135 638	3 582	21 5167	26 6136	101 425	10 173	8 770	
DNK	9 089	1 090	2 973	18 400	4 122	136	17 594		5 749	708	5 482	18 695	830	100	697	
ESP	12 662	2 072	36 840	10 785	61 679	170	8 6160	2851		779	342 071	54 482	972	139	4 632	
FIN	8 258	1 300	2 761	14 395	3 842	332	11 067	3575	5 378		3 525	11 322	849	343	687	
FRA	18 827	5 903	15 1976	80 965	98 352	3 633	74 131	4038	156 681	1089		96 281	6723	1 738	6 815	
GBR	1 036 245	6 786	26 176	624 305	25 378	1 436	85 058	13615	107 794	2731	84 493		13303	1 186	248 515	
GRC	116 431	3 060	15 089	76 900	6 295	1 806	261 329	1066	1 132	468	11 872	35 169		1 228	345	
HUN	22 752	30 953	5 486	50 830	12 403	6 200	38 309	1604	1 460	873	10 543	13 159	1 586		456	
IRL	50 235	546	2 999	26 430	1 542	67	7 946	1091	4 342	200	5 316	537 108	498	48		
ISL	463	135	164	500	151	20		5855	306	120	333	1 552	32	5	55	
ITA	218 718	26 099	132 466	319 230	234 634	1 035	429 313	3364	26 578	958	409 190	107 244	5 929	935	3 705	
JPN	25 471	1 957	3 850	27 245	4 388	193		1364	3 154	640	14 261	37 535	560	324	716	
KOR	38 900	1 446	4 049	82 890	1 613	76		8056	2 158	132	15 852	12 310	204	144	166	
LUX	141	514	10 459	560	1 436	15	4 540	245	1 029	32	9 895	1 222	99	17	85	
MEX	1 154	721	1 150	44 190	2 863			524	20 949	153	6 360	5 049	363	45	314	
NLD	83 324	5 248	97 165	119 310	16 771	549	68 459	4833	23 153	731	27 618	40 438	3 083	513	3 512	
NOR	4 324	742	1 295	6 505	1 818	107		16386	59 22	954	2 838	13 798	459	288	441	
NZL	355 765	245	301	9 920	1 148	35		538	331	86	1 071	58 286	506	35	2 256	
POL	58 110	41 671	19 894	182 155	10 679	24 707	117 0711	10723	16 423	1 173	106 650	60 711	15 468	2 685	2 167	
PRT	15 441	950	21 371	155 980	100 975	39	94 258	686	56 359	141	579 465	36 555	292	28	590	
SVK	29 84	15 981	30	10 740	3 736	285 372		135	1 217	17	2 149	5 273	411	37 439	332	
SWE	6 818	3 214	3 991	7 725	6 878	210	10 783	18706	9 424	2 8040	8 658	22 525	5 428	394	1 315	
TUR	29 821	125 026	70 793	17 810	58 546	222	161 0735	30175	986	2 150	179 392	54 079	76 561	696	545	
USA	53 694	7 371	13 925	278 570	21 775	2 197	81 308	8367	21 320	2 903	39 464	158 434	23 091	2 567	2 1541	
CSFR			3 152	13 415			36 877	2320		298	6 262					
OECD foreign-born	2 347 075	494 336	724 539	2 472 720	950 322	347 422	4 273 566	176 006	702 881	51 967	2 326 972	1 897 153	305 813	69 306	322 590	
Percentage of total foreign-born from OECD countries	57.6	50.1	65.9	53.3	64.7	77.5	51.8	48.8	32.4	39.5	39.7	39.4	27.3	23.7	80.7	

Table II.A2.5. **Stocks of persons originating in OECD countries and residing in another member country (total population) (cont.)**

Country of residence:	JPN	KOR	LUX	MEX	NLD	NOR	NZL	POL	PRT	SVK	SWE	TUR	USA	Total
Origin country:														
AUS	6 148	719	96	281	9 529	1 101	56 142	608	1 192	52	2 525	2 938	75 314	328 405
AUT	293		624	500	6 746	1 040	1 200	4 312	391	808	5 967	14 335	70 560	391 206
BEL	324		14 770	735	46 003	907	513	2 797	2 879	179	1 356	8 751	41 705	364 891
CAN	7 067	2 468	305	5 768	8 427	2 290	7 770	1 555	7 326	115	2 471	1 427	945 060	1 149 514
CHE	677		787	1 478	5 792	1 507	2 763	506	12 897	51	2 557	10 369	49 445	319 176
CZE	113		253	225	121	567	663	6 200	130	75 585	522	1 026	24 865	224 756
DEU	3 407	920	12 847	5 595	123 110	12 880	8 382	101 633	24 283	735	40 217	273 535	1 241 450	3 330 920
DNK	311		1 522	245	3 242	23 326	1 446	704	387	17	40 921	3 372	34 064	195 222
ESP	1 183		2 120	21 114	18 279	1 782	339	1 111	13 966	30	5 470	1 209	114 190	797 087
FIN	512		701	126	2 379	7 027	372	192	312	11	189 341	1 672	22 865	293 144
FRA	3 768	1 142	18 864	5 751	19 338	3 069	2 283	34 647	95 282	1 393	6 155	16 048	204 238	1 119 130
GBR	10 411	1 184	3 167	2 688	45 691	14 332	218 394	2 630	10 068	87	16 428	18 939	823 279	3 444 319
GRC	165		865	298	7 375	636	942	2 793	125	26	10 853	59 217	178 155	793 640
HUN	266		293	239	5 333	1 507	987	1 344	217	17 293	13 794	520	94 095	332 502
IRL	618		641	192	4 425	499	6 726	71	533	2	1 349	538	164 435	818 397
ISL	31		309	16	385	3 941	84	41	34	1	3 811	43	9 805	28 192
ITA	1 127		12 254	3 904	17 207	1 506	1 440	4 292	1 958	117	6 584	2 843	536 370	2 509 000
JPN		13 398	289	2 936	5 879	932	8 622	230	280	16	2 502	2 003	497 945	656 690
KOR			513	2 100	5 305	6 347	17 934	37	74	1	9 574	513	156 085	366 479
LUX	8			15	827	93	30	125	3 313		139	46	2 690	37 575
MEX	1 222		61		1 454	471	243	116	214	9	1 328	154	9 336 530	9 425 637
NLD	604		3 284	773		4 389	22 239	964	3 250	32	5 150	21 823	105 920	663 135
NOR	280		152	134	2 499		465	315	283	9	45 087	3 554	36 340	144 995
NZL	2 401		33	77	3 582	345		50	48	3	763	290	26 350	464 465
POL	468		1 006	971	17 351	6 702	1 938		358	3 473	41 608	3 415	477 450	2 278 667
PRT	368		41 690	288	10 218	760	141	60		4	2 533	225	212 115	1 331 532
SVK	107		93	23	67	306	138	1 514	30		374	315	15 945	384 728
SWE	798		984	425	3 642	32 939	960	703	741	23		5 335	54 435	235 094
TUR	915		290	246	181 865	8 410	396	452	106	30	34 083		90 595	2 574 925
USA	38 804	11 940	1 094	343 597	21 356	14 725	13 344	9 010	7 301	829	15 143	13 579		1 227 249
CSFR					4 984	317					7 330		45 245	120 200
OECD foreign-born	82 396	31 771	119 907	400 740	582 411	154 653	376 896	179 012	187 978	100 931	515 935	468 034	15 687 540	36 350 872
Percentage of total foreign-born from OECD countries	10.8	23.5	84.7	81.4	36.1	46.5	54.0	23.7	28.9	84.8	47.9	37.2	47.5	46.5

Note: CSFR stands for "Former Czechoslovakia not included elsewhere". Data for Korea are partial as several OECD countries do not systematically distinguish the Democratic Republic of Korea and the People's Republic of Korea (e.g. 529 408 people in Japan and 743 260 in the United States).

Sources: See Annex II.A.1, Secretariat calculations.

Table II.A2.6. Total number of highly skilled expatriates and percentage of highly skilled expatriates by country of birth

	Total number of expatriates	of which: Highly skilled (%)		Total number of expatriates	of which: Highly skilled (%)		Total number of expatriates	of which: Highly skilled (%)		Total number of expatriates	of which: Highly skilled (%)		Total number of expatriates	of which: Highly skilled (%)
Afghanistan	129 211	25.2	Congo	100 052	36.6	Hong Kong, China	587 400	42.8	Myanmar	57 962	42.9	Slovenia	52 271	17.5
Albania	389 264	9.1	Cook Islands	18 002	8.6	Hungary	314 923	28.7	Namibia	3 390	45.3	Solomon Islands	1 982	45.0
Algeria	1 301 076	16.4	Costa Rica	76 112	24.2	Iceland	23 070	33.8	Nauru	646	30.7	Somalia	131 342	11.9
American Samoa	30 539	10.4	Côte d'Ivoire	58 843	27.5	India	1 928 199	51.9	Nepal	23 229	39.9	South Africa	342 947	47.9
Andorra	3 687	23.1	Croatia	422 277	14.0	Indonesia	289 167	34.3	Netherlands	616 910	34.0	Spain	763 014	18.0
Angola	195 674	19.6	Cuba	914 501	24.2	Iran	632 980	45.6	Netherlands Antilles	68 949	15.5	Sri Lanka	292 247	29.7
Anguilla	1 677	30.9	Cyprus	138 711	25.2	Iraq	294 967	28.2	New Zealand	410 663	40.6	Sudan	42 086	40.5
Antigua and Barbuda	24 400	26.5	Czech Republic	215 879	24.6	Ireland	792 316	23.5	Nicaragua	224 531	17.9	Suriname	186 532	14.6
Argentina	266 070	37.8	Democratic People's Republic of Korea	1 919	33.2	Israel	162 567	42.9	Niger	4 948	38.0	Svalbard and Jan Mayen Islands	23	17.4
Armenia	80 442	30.1	Democratic Rep. of Congo	66 488	32.5	Italy	2 430 339	12.4	Nigeria	247 497	55.1	Swaziland	2 103	41.7
Aruba	5 744	47.1	Denmark	173 009	34.6	Jamaica	796 046	24.0	Niue	5 633	10.0	Sweden	206 604	37.8
Australia	267 314	43.6	Djibouti	5 359	29.7	Japan	575 992	48.9	Norfolk Islands	269	28.6	Switzerland	262 456	35.8
Austria	366 023	28.7	Dominica	25 738	21.7	Jordan	62 796	41.0	Northern Mariana Islands	3 647	25.2	Syria	126 372	34.1
Azerbaijan	29 263	41.2	Dominican Republic	691 884	12.3	Kazakhstan	43 226	28.4	Norway	122 079	32.1	Taiwan Province of China	431 462	61.1
Bahamas	30 750	29.2	East Timor	8 994	17.5	Kenya	197 445	37.4	Occupied Palestinian Territory	14 798	43.8	Tajikistan	3 094	42.4
Bahrain	7 424	40.6	Ecuador	490 267	15.4	Kiribati	1 964	22.4	Oman	2 753	36.9	Thailand	249 951	29.3
Bangladesh	275 770	27.9	Egypt	274 833	51.2	KOR+PRK	672 755	43.3	Pakistan	655 162	30.8	Timor-Leste	2 190	20.8
Barbados	88 895	26.3	El Salvador	839 511	7.8	Kuwait	37 591	44.1	Palau	2 187	28.5	Togo	18 024	36.3
Belarus	149 935	25.0	Equatorial Guinea	12 149	22.7	Kyrgyzstan	4 640	39.0	Panama	140 631	32.6	Tokelau	1 815	11.3
Belgium	321 544	33.8	Eritrea	35 127	24.0	Lao People's Democratic Republic	264 864	14.4	Papua New Guinea	26 074	43.9	Tonga	41 116	11.2
Belize	43 023	20.2	Estonia	35 077	32.0	Latvia	54 153	37.4	Paraguay	18 504	25.0	Trinidad and Tobago	276 934	29.5
Benin	13 669	43.8	Ethiopia	113 838	31.2	Lebanon	332 270	32.9	Peru	361 506	30.2	Tunisia	371 274	17.7
Bermuda	19 572	34.8	Falkland Islands	1 316	22.5	Lesotho	995	45.7	Philippines	1 816 418	48.1	Turkey	2 195 645	6.3
Bhutan	809	25.5	Federal Rep. of Yugoslavia	1 064 580	11.9	Liberia	41 756	33.0	Pitcairn	173	42.2	Turkmenistan	3 269	32.8
Bolivia	72 400	30.4	Fiji	119 400	26.4	Libya	27 481	43.4	Poland	1 276 482	25.7	Turks and Caicos Islands	1 429	18.2
Bosnia-Herzegovina	536 327	11.5	Finland	265 245	25.4	Liechtenstein	3 532	19.3	Portugal	1 268 726	6.5	Tuvalu	1 065	8.0

Table II.A2.6. Total number of highly skilled expatriates and percentage of highly skilled expatriates by country of birth (cont.)

	Total number of expatriates	of which: Highly skilled (%)		Total number of expatriates	of which: Highly skilled (%)		Total number of expatriates	of which: Highly skilled (%)		Total number of expatriates	of which: Highly skilled (%)		Total number of expatriates	of which: Highly skilled (%)
Botswana	4 298	37.4	Former Czechoslovakia	109 984	29.8	Lithuania	132 843	22.1	Puerto Rico	1 312 753	14.7	U. Rep. of Tanzania	70 006	41.0
Brazil	351 878	31.7	Former USSR (Others) ¹	2 222 270	29.0	Luxembourg	27 164	26.2	Qatar	3 384	43.3	Uganda	82 232	39.2
British Indian Ocean Territory	36	13.9	Former Yugoslavia (Others) ¹	54 776	11.8	Macao, China	18 881	36.0	Republic of Korea	312 538	43.2	Ukraine	753 080	27.2
British Virgin Islands	2 252	32.9	France	1 013 581	34.4	Macedonia	149 014	11.8	Republic of Moldova	35 365	36.7	United Arab Emirates	14 589	23.9
Brunei Darussalam	9 059	39.3	Gabon	10 951	35.8	Madagascar	75 954	32.0	Romania	613 168	26.3	United Kingdom	3 229 676	39.2
Bulgaria	527 819	14.5	Gambia	20 923	16.9	Malawi	15 024	35.2	Russia	580 570	43.0	United States of America	809 540	48.2
Burkina Faso	6 237	38.4	Georgia	83 419	25.0	Malaysia	209 910	50.8	Rwanda	14 832	34.4	Uruguay	70 093	29.9
Burundi	10 095	38.6	Germany	2 933 757	29.5	Maldives	519	34.5	Saint Helena	2 460	10.4	US virgin Island	48 770	25.0
Cambodia	238 539	15.7	Ghana	150 665	34.0	Mali	45 034	12.6	Saint Kitts and Nevis	20 078	26.6	Uzbekistan	34 123	40.3
Cameroon	57 050	42.3	Gibraltar	11 886	23.3	Malta	96 837	19.5	Saint Lucia	24 722	20.3	Vanuatu	2 002	32.1
Canada	1 044 978	40.0	Greece	735 430	16.1	Marshall Islands	5 446	10.7	Saint Vincent and the Grenadines	34 969	24.5	Venezuela	200 461	40.2
Cape Verde	83 291	6.2	Grenada	46 825	23.2	Mauritania	14 813	18.5	Samoa	71 801	10.3	Vietnam	1 507 164	23.6
Cayman Islands	2 389	19.5	Guam	57 742	26.1	Mauritius	86 410	28.0	San Marino	775	17.9	Western Sahara	158	33.5
Central African Republic	9 855	32.7	Guatemala	489 772	8.2	Mexico	8 431 381	5.6	Sao Tome and Principe	11 732	10.7	Yemen	32 428	19.3
Chad	5 836	42.1	Guinea	19 684	24.5	Micronesia (Federated States of)	6 697	13.3	Saudi Arabia	34 646	35.4	Zambia	34 825	49.3
Chile	200 366	33.0	Guinea-Bissau	29 449	12.7	Monaco	11 208	24.6	Senegal	104 715	23.1	Zimbabwe	77 345	43.3
China	1 649 711	39.6	Guyana	305 544	24.9	Mongolia	4 709	43.8	Seychelles	7 602	22.5			
Cocos (Keeling) Islands	2	0.0	Haiti	466 897	19.8	Montserrat	11 397	16.7	Sierra Leone	40 556	33.6			
Columbia	682 156	25.1	Holy See	93	35.5	Morocco	1 364 754	14.8	Singapore	105 805	45.9			
Comoros	17 723	10.7	Honduras	278 593	10.5	Mozambique	85 337	26.5	Slovak Republic	374 570	13.8			

Note: KOR + PRK stands for the Democratic Republic of Korea and the People's Republic of Korea. OECD countries are identified with shaded areas. Percentages take into account data with unspecified country of birth.

1. Some host countries are not able to provide with figures for each Republics of Former Yugoslavia or of former USSR. In that case, data are specified in these categories.

Sources: See Annex II.A1, Secretariat calculations (not including Japan and Italy as receiving countries).