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# COUNTING IMMIGRANTS AND EXPATRIATES IN OECD COUNTRIES: A NEW PERSPECTIVE*

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* The views expressed in the paper do not imply the expression of any opinion on the part of the United Nations Secretariat.

## 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 countries[10] 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).

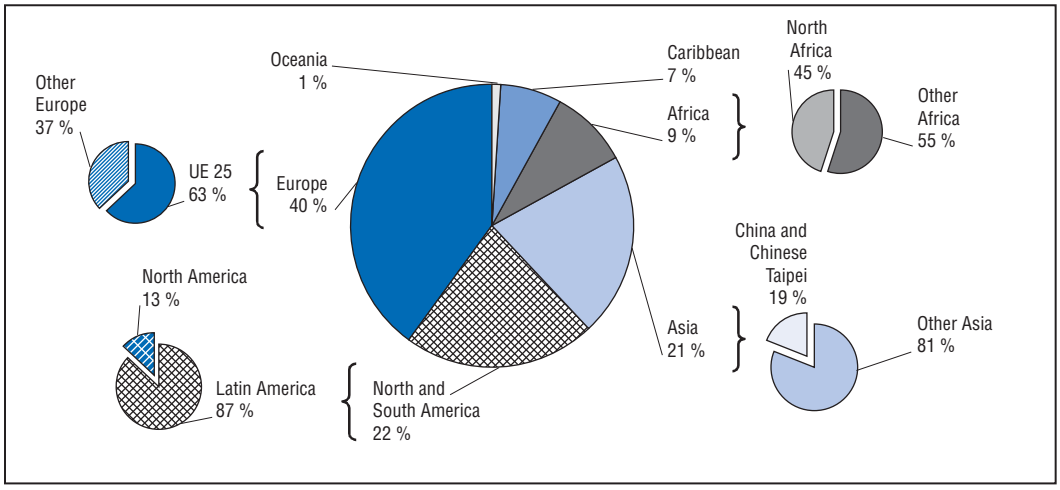
*Source:* See Annex II.A1, Secretariat calculations and OECD 2003 for the percentage of foreigners in the United Kingdom and Germany.

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 Netherlands[11] 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 form 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 consultates[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 Quarterlies 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.

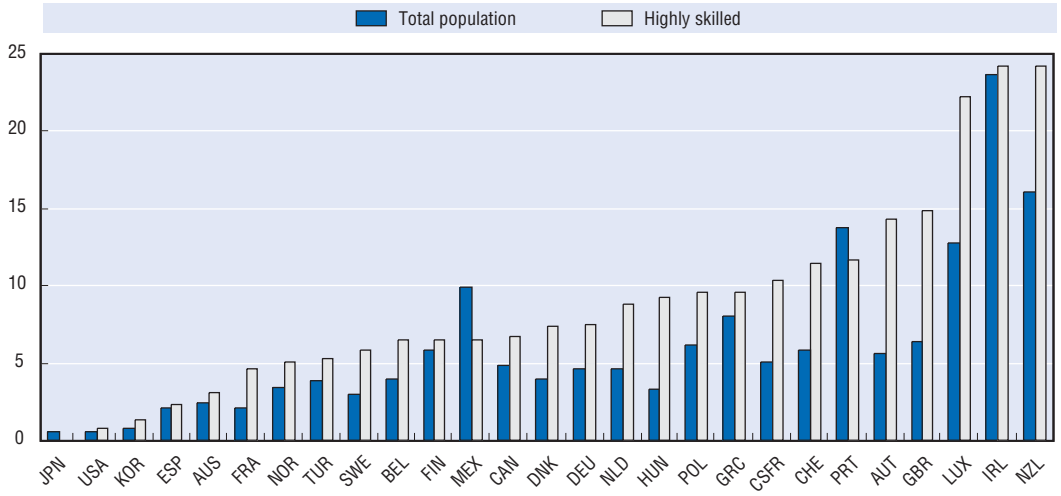
The largest expatriate group consists of persons born in Mexico, with nearly 9.5 million people, of whom the vast majority are resident in the United States. The number of persons born in Germany and in the United Kingdom residing in other OECD member countries is also large, more than 3 million people 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 | 84 091 | 53 308 | 13 402 | **267 314** |
| | *45.9* | *33.1* | *21.0* | | |
| Austria | 105 149 | 164 504 | 80 401 | 15 970 | **366 024** |
| | *30.0* | *47.0* | *23.0* | | |
| Belgium | 108 797 | 104 109 | 101 295 | 7 343 | **321 544** |
| | *34.6* | *33.1* | *32.2* | | |
| Canada | 417 750 | 411 595 | 200 175 | 15 458 | **1 044 978** |
| | *40.6* | *40.0* | *19.4* | | |
| Former CSFR | 32 796 | 46 232 | 29 781 | 1 175 | **109 984** |
| | *30.1* | *42.5* | *27.4* | | |
| Czech Republic | 53 084 | 106 613 | 51 239 | 4 943 | **215 879** |
| | *25.2* | *50.5* | *24.3* | | |
| Denmark | 59 905 | 61 958 | 38 317 | 12 829 | **173 009** |
| | *37.4* | *38.7* | *23.9* | | |
| Finland | 67 358 | 108 708 | 80 378 | 8 801 | **265 245** |
| | *26.3* | *42.4* | *31.3* | | |
| France | 348 432 | 313 538 | 294 700 | 56 911 | **1 013 581** |
| | *36.4* | *32.8* | *30.8* | | |
| Germany | 865 255 | 1 201 040 | 783 364 | 84 098 | **2 933 757** |
| | *30.4* | *42.1* | *27.5* | | |
| Greece | 118 318 | 190 647 | 405 698 | 20 767 | **735 430** |
| | *16.6* | *26.7* | *56.8* | | |
| Hungary | 90 246 | 129 452 | 85 451 | 9 773 | **314 922** |
| | *29.6* | *42.4* | *28.0* | | |
| Iceland | 7 792 | 8 552 | 5 223 | 1 503 | **23 070** |
| | *36.1* | *39.7* | *24.2* | | |
| Ireland | 186 554 | 143 679 | 347 073 | 115 010 | **792 316** |
| | *27.5* | *21.2* | *51.2* | | |
| Italy | 300 631 | 619 946 | 1 395 714 | 114 048 | **2 430 339** |
| | *13.0* | *26.8* | *60.3* | | |
| Japan | 281 664 | 220 158 | 64 529 | 9 641 | **575 992** |
| | *49.7* | *38.9* | *11.4* | | |
| Korea | 134 926 | 116 535 | 53 568 | 7 509 | **312 538** |
| | *44.2* | *38.2* | *17.6* | | |
| Luxembourg | 7 115 | 8 252 | 10 179 | 1 618 | **27 164** |
| | *27.9* | *32.3* | *39.8* | | |
| Mexico | 472 784 | 2 057 184 | 5 900 254 | 1 159 | **8 431 381** |
| | *5.6* | *24.4* | *70.0* | | |
| Netherlands | 209 988 | 203 897 | 168 284 | 34 740 | **616 909** |
| | *36.1* | *35.0* | *28.9* | | |
| New Zealand | 166 854 | 84 113 | 122 942 | 36 754 | **410 663** |
| | *44.6* | *22.5* | *32.9* | | |
| Norway | 39 152 | 45 054 | 31 263 | 6 610 | **122 079** |
| | *33.9* | *39.0* | *27.1* | | |
| Poland | 328 058 | 518 868 | 387 023 | 42 533 | **1 276 482** |
| | *26.6* | *42.0* | *31.4* | | |
| Portugal | 82 938 | 295 053 | 850 758 | 39 977 | **1 268 726** |
| | *6.7* | *24.0* | *69.2* | | |
| Slovak Republic | 51 798 | 168 803 | 150 445 | 3 524 | **374 570** |
| | *14.0* | *45.5* | *40.5* | | |
| Spain | 137 708 | 204 284 | 392 793 | 28 228 | **763 013** |
| | *18.7* | *27.8* | *53.5* | | |

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

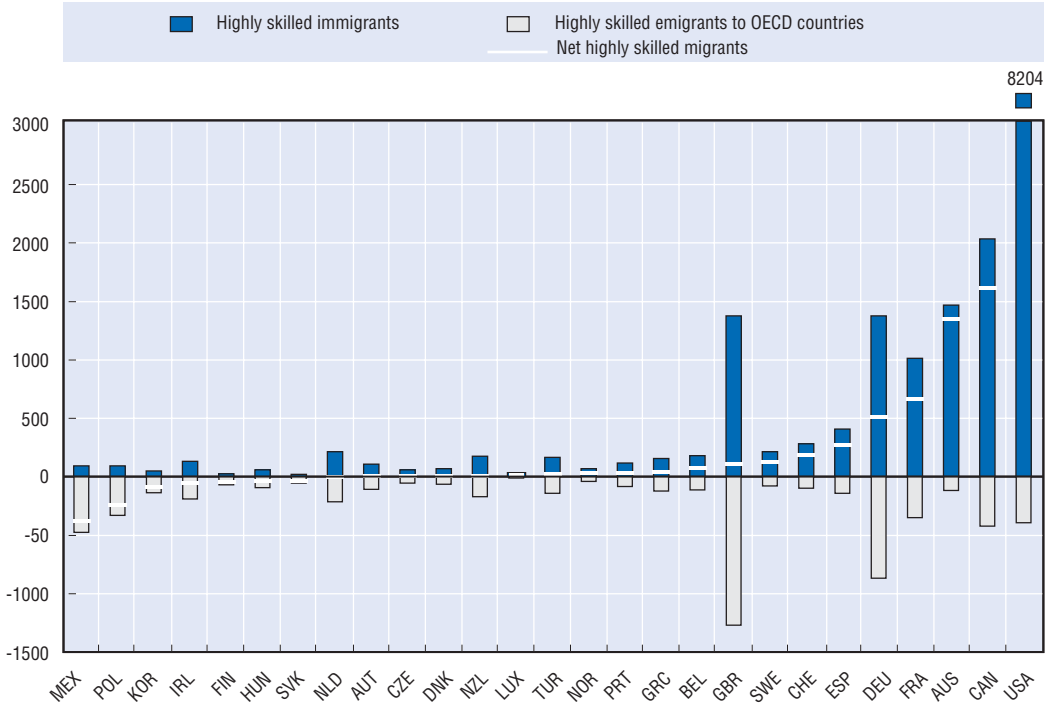
| | Tertiary | Upper secondary and post-secondary non-tertiary | Less than upper secondary | unspecified | Total |
|---|---|---|---|---|---|
| Sweden | 78 054 | 74 559 | 42 167 | 11 824 | **206 604** |
| | *40.1* | *38.3* | *21.6* | | |
| Switzerland | 93 859 | 94 918 | 68 182 | 5 497 | **262 456** |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

*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.


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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* |

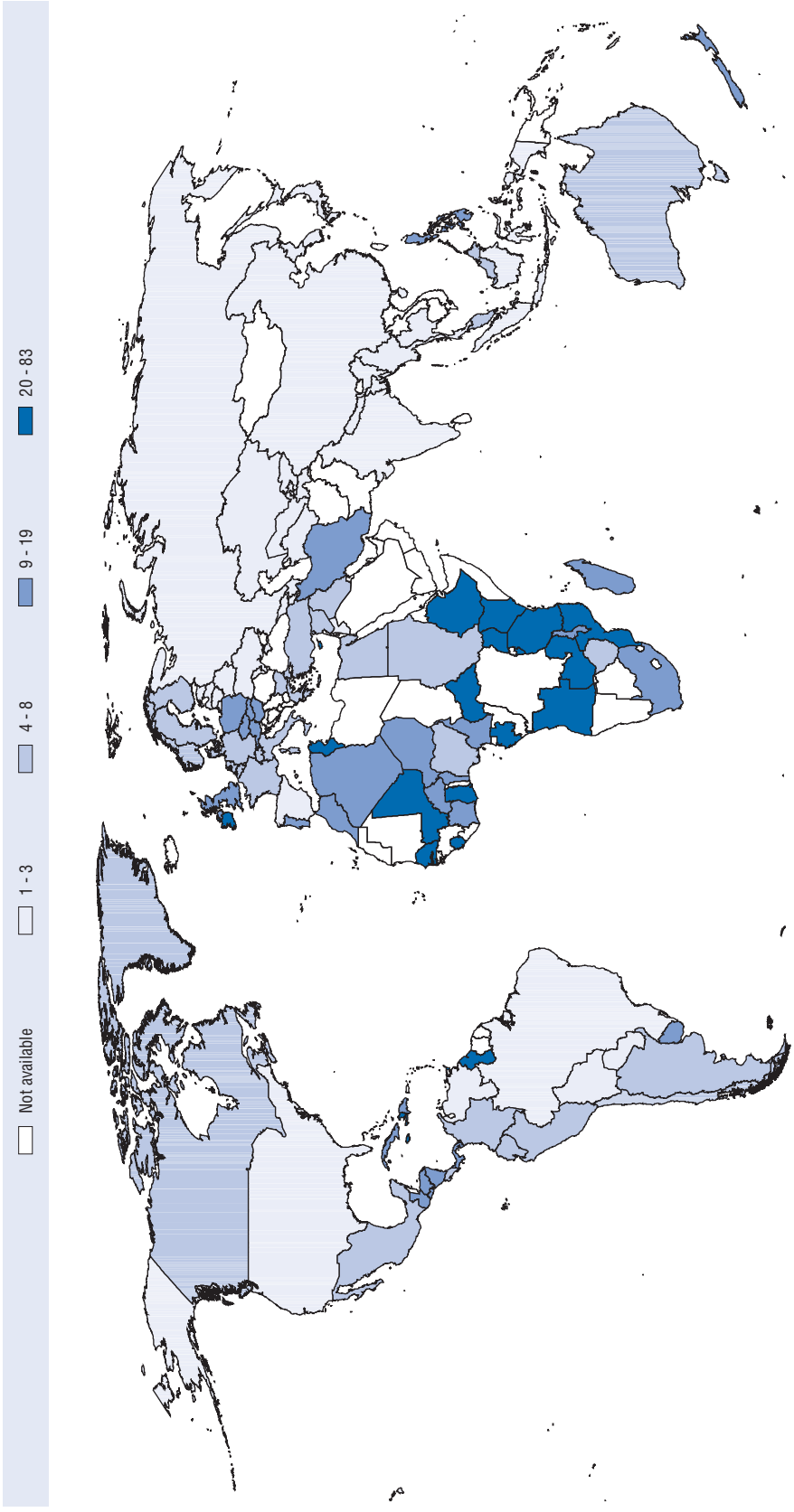
1. Two different sources for the educational attainment of non-OECD countries have been used. They are identified at the top of each column. See Box II.3 and bibliography for the detailed references.

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. **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.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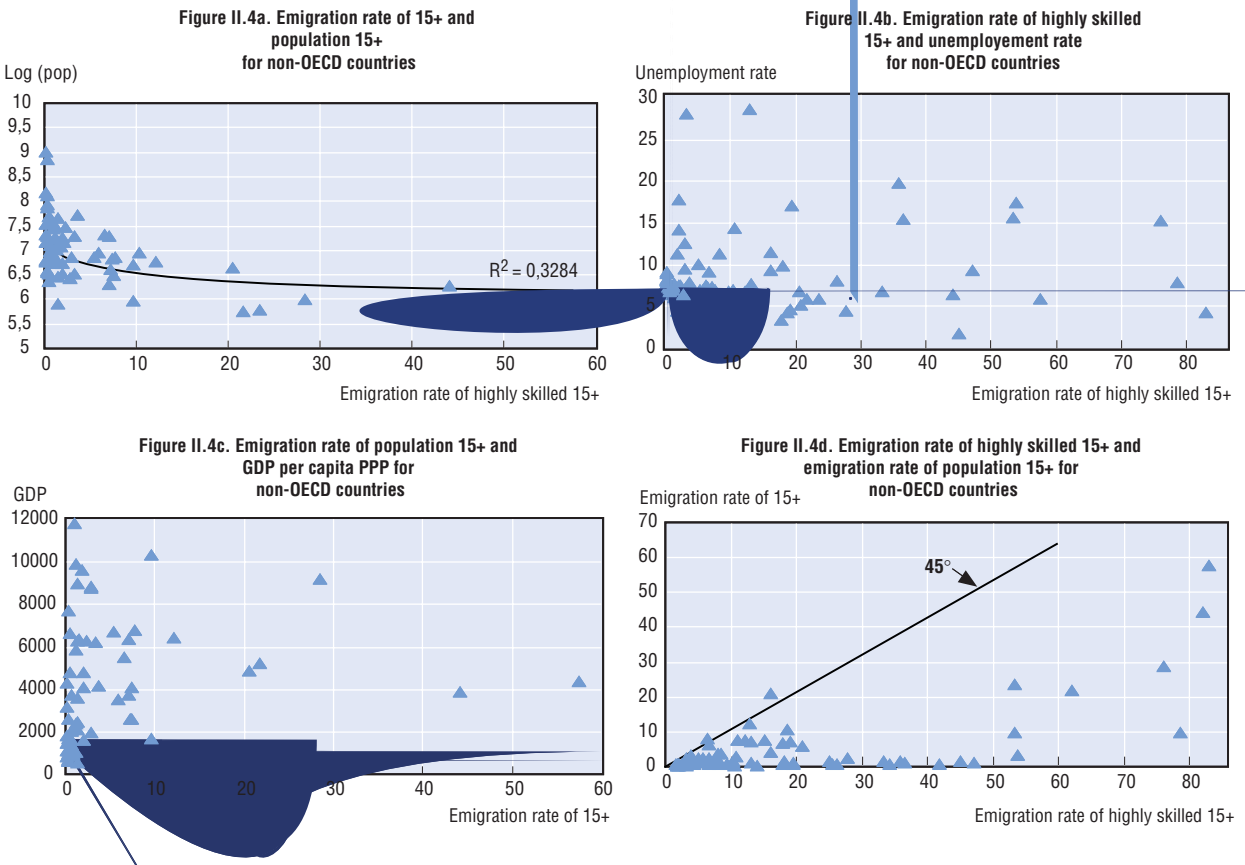
rates. Emigration of the highly skilled is also quite significant in Central America but more moderate in Asia, with the relative exceptions of Hong Kong and Singapore. The former USSR faces intensive migration from former soviet republics towards Russia, which unfortunately it is not possible to illustrate 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 Zealand[22] 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 a 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 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)* employed under a tax-exempt technology-inducement contract or *ii)* 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:<br>• a narrow exemption that would apply for seven years and focus on those tax rules that are more comprehensive than the international norm; and<br>• 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 citizenshipis 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 of the basis of the post-decenial population projections. Most of these were believe 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 statististics |
| 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**

| | Africa | *Of which*: North African countries | % | Asia | *Of which*: China and Chinese Taipei | % | Latin America | North America | Caribbean | Oceania | EU25 | Other Europe | Unspecified | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 1136 | 20155 | 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 | 181984 | 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.A1, 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* |

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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).