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Jean-Christophe Dumont and Georges Lemaitre

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SUMMARY

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 other reasons, 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. Despite these increased movements and the heightened policy interest in this area, the quality and comparability of international data on migration have scarcely kept pace.

In particular, data that are generally available on migration flows do not provide a clear idea of the relative scale of movements across countries and data on total immigrant stocks have suffered from differing national views concerning who is an “immigrant”. In addition to the lack of comparability on immigrant populations, most OECD member countries have little information at their disposal on their expatriates. In developing countries, the question of the international mobility of highly-qualified workers is generally manifested through a concern about the so called “brain drain” and the loss of economic potential which could result from this.

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 area over the past decades. And with additional information on the educational attainment of migrants, the cumulative impact of flows of human capital can be depicted and, in particular, the conventional wisdom on the brain drain confronted with actual data.

Results presented in this paper based on the new database on immigrants and expatriates in OECD countries, show that (i) the percentage of the foreign-born in European OECD countries is generally higher than the percentage of foreigners; (ii) international migration is quite selective towards highly skilled migrants; (iii) in most OECD countries, the number of immigrants with tertiary education exceeds the number of highly qualified expatriates to other OECD countries; (iv) 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 while some of the smallest countries, especially in the Caribbean and in Africa, face significant ‘emigration rates’ of their elites.

RESUME

Depuis la fin des années 90, les migrations internationales, et plus particulièrement la mobilité internationale des travailleurs hautement qualifiés, retiennent l'attention des décideurs politiques. Cette tendance tient entre autres à l'importance prise par les mouvements de personnes suite à la chute du Rideau de fer et aussi en relation avec la mondialisation croissante des économies. Malgré cet accroissement important des mouvements migratoires et l'intérêt politique qu'ils suscitent, la qualité et la comparabilité des données statistiques sur ces mouvements restent encore limitées.

Les statistiques généralement disponibles sur les flux migratoires ne donnent pas une idée précise de l'importance de ces mouvements à travers les pays. Par ailleurs, les données sur les effectifs d'immigrés souffrent du fait que les pays ne définissent pas de la même manière la notion d'immigré. Outre ce manque de comparabilité des données sur les populations immigrées, la plupart des pays de l'OCDE disposent de peu d'informations sur leurs expatriés. Dans les pays en développement, la question de la mobilité internationale des travailleurs hautement qualifiés se traduit le plus généralement par des préoccupations en matière de fuite des cerveaux et de la perte de potentiel économique qui peut en résulter.

Aux alentours de l'année 2000, presque tous les pays de l'OCDE ont procédé à un recensement des populations et y ont incorporé une question sur le pays de naissance des personnes interrogées, ainsi que sur leur nationalité. Grâce à cette information, il est possible de donner pour la première fois une image détaillée et fiable de la comparaison des populations immigrées établies dans les pays membres de l'OCDE, rendant compte des effets cumulés des mouvements entre et à destination de la zone OCDE au cours des décennies passées. On dispose aussi d'informations complémentaires sur le niveau d'éducation atteint par les migrants, et on peut ainsi mieux appréhender les flux de capital humain et, en particulier utiliser ces données pour éclairer les discussions sur la fuite des cerveaux.

S'appuyant sur ces informations, l'OCDE a créé une nouvelle base de données sur les immigrés et les expatriés. Les résultats présentés dans ce document montrent que i) le pourcentage des personnes nées à l'étranger dans les pays européens de l'OCDE est généralement plus élevé que celui des étrangers ; ii) les migrations internationales s'orientent de manière sélective vers les migrants hautement qualifiés ; iii) dans la plupart des pays de l'OCDE, le nombre d'immigrés possédant un niveau d'éducation de l'enseignement supérieur dépasse le nombre des expatriés hautement qualifiés vers d'autres pays de l'OCDE ; iv) parmi les pays non membres de l'OCDE, l'impact de la mobilité internationale des travailleurs immigrés hautement qualifiés est diversifié : les grands pays en développement semblent moins affectés et en fait pourraient même bénéficier des effets indirects associés à cette mobilité, alors que certains pays de plus petite taille, spécialement dans les Caraïbes et en Afrique, se trouvent confrontés à des taux d'émigration élevés de leurs élites.

COUNTING IMMIGRANTS AND EXPATRIATES IN OECD COUNTRIES: A NEW PERSPECTIVE[1]

Introduction

1. 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.

2. 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), the focus tends to be on "permanent" migrants, 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.

3. 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].

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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 to 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

4. 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.

5. 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.

6. 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.

7. 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.

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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.

8. 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.

9. 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.

10. 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

11. 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.

12. The new database on immigrants and expatriates in OECD countries (see Box 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.

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.

Box 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 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 1 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 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 second situation concerns Germany, where the available source was the Microcensus, a large-scale household sample survey[9]. 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 1 for more details).

2. Immigrants in OECD countries

The foreign and foreign-born populations

13. Table 1 shown below compares the incidence of the foreign and foreign-born populations for almost all OECD countries. As is evident, it is in three of the four settlement countries (i.e. Australia, Canada and New Zealand, but not the United States), 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 almost as high if not higher than that recorded in the United States (approximately 12%)[10]. 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.

9 The last German census was conducted in 1987.

10 The 2000 United States Census enumerated close to 8 million more persons than had been anticipated on the basis of the post-censal population projections. Most of these were believed to be undocumented aliens.

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

14. 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). 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.

15. 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 2 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]. Acquisition of citizenship is also high in the Czech and Slovak republics, Hungary and Poland, largely because immigrants to these countries were largely ethnic nationals who immigrated from neighbouring countries and for whom acquisition of citizenship was either automatic or facilitated.

16. Aside from the fact that statistics on the foreign-born population give a more accurate picture of the extent of migration in countries and of developments over time (unlike nationality, the place of birth is an unvarying characteristic) there are other reasons why they are to be preferred over those of the foreign population. One concerns the possible impact of statistics on the foreign population on public perception of migration. One might expect that, because naturalisation tends to be associated with a longer period of residence as well as certain legal advantages, among them access to civil service employment, statistics based on the foreign population would tend to give a less positive picture of the labour market outcomes of immigrants. Although in practice unemployment rates of foreigners are indeed higher than those of the foreign-born in most countries, the difference is generally not large (OECD 2004).

17. Still, the distinction between foreign-born and native-born is a useful one. Education, training and labour market policies will clearly not be the same for disadvantaged persons of immigrant background who have been born, raised and educated in the host country and for immigrants who arrive with language deficiencies and educational credentials and labour market experience obtained elsewhere and which may not always be recognised. Statistics that are able to distinguish between these two groups are clearly needed if appropriate diagnoses of labour market problems are to be made and the appropriate policies developed for addressing them.

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.

The geographic origins of immigrants

18. The distribution of foreign-born residents in OECD countries by area of origin (see Chart .1) 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. Geographic proximity to Europe and/or the existence of former colonial links undoubtedly have a lot to do with this. Migrants originating from North Africa are concentrated in three European countries (i.e. France, Spain and the Netherlands).

19. 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 from Latin America, and the United States, approximately 13.5 million. In the former case, migration has clearly been driven by the common language and the facilitated integration which it conveys, in the latter, by geographic proximity, historical ties and the pull of a dynamic labour market.

20. However, it is continental Europe (including Turkey and central Eastern Europe), which accounts for the largest number of immigrants in OECD countries. There are, for example, nearly 2 million immigrants from the enlarged European Union (EU25) in each of Canada, Australia, France and Germany and over four and one half million in the United States. Emigration from the United Kingdom accounts for over 20% of this and from Germany, Italy and Poland close to 15% each. Note the absence of France among the large European countries, which maintains its historical reputation as a country whose citizens do not emigrate and in these data have only about a three percent share of persons born in EU25 countries and residing in other OECD countries.

Chart 1. Foreign-born by region of origin in OECD countries, percentages

21. The countries which practice a selective immigration policy based on human capital criteria (Australia, Canada, New Zealand) stand out in Table 3 among the countries with the highest percentages of highly qualified immigrants[13]. But this is also the case in the United Kingdom, Ireland, Korea, Norway and New Zealand, where 30 to 41% 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.

22. The situation in Belgium, Finland, France, Italy, the Netherlands, Portugal and Spain 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

23. 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

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.

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.

24. Table A5 in Annex 2 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 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 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.

25. 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.

Box 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 paper, 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 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 A1 in Annex 2). 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 paper on expatriates by country of origin should be considered a lower bound.

Table II.2. OECD expatriates in other OECD countries

26. 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 Chart 2). Other significant

expatriate communities include persons born in New Zealand (16%), Portugal (13.7%), Luxembourg (12.8%) and Mexico (9.9%).

Chart II.2. Expatriates as a percentage of all native-born, OECD countries
Total population and highly skilled

27. 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).

28. 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.

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

29. Table 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.

30. 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 Chart 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.

31. 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

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, an analysis of net flows of migrants would produce a rather different picture, including for the highly skilled.

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 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.

Chart II.3. Immigrant and emigrant population 15+ with tertiary education in OECD countries
Thousands

32. 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 Chart 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 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.

Table II.4. Percentages of persons with tertiary education by place of birth, selected OECD countries

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

33. 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 A6 in Annex 2)

34. 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 3). The results are presented in Table 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 5, would tend to fall among countries having lower rates.

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

35. Among countries with low 'emigration rates' of highly qualified persons (ie. inferior to 5%), we find most of the large countries included in the database (ie. 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 Chart 4a).

36. 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].

Box 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 1 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 (ρ=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.

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

37. The world map (see Map 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 rates. Emigration of the highly skilled is also quite significant in

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.

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.

Map 1. Percentage of highly skilled expatriates to OECD countries among all highly skilled born in the country

38. 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. Charts 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, Chart. 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.

Chart 4. 'Emigration rates' for 15+ and highly skilled 15+ and demo-economic situation for non-OECD countries

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

39. 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.

40. 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 work force, some will also be filled by immigrants.

41. 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).

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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.

The recent economic downturn did not significantly affect this trend although some countries have reintroduced restrictions in some sectors.

42. 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].

43. 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.

44. 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.

45. 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.

46. In addition to immigration policy measures, some OECD countries have introduced specific fiscal incentives to attract highly skilled migrants (see Table 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.

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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).

Table 6. Fiscal incentives for highly skilled migrants

Conclusions

47. 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.

48. 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.

- 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.

49. No single, simple policy option could guarantee win-win outcomes, where all stakeholders (i.e. migrants, origin countries, receiving countries) would gain from the international mobility of the highly skilled workers in both the short and long run. Only broad-based approaches, which contribute to reducing

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.

push factors in origin countries, and to limit some of the adverse effects of international recruitment in receiving countries, can result in a significant sharing of the benefits attached to international mobility.

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Table 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 1 for further details).

Source: See Annex 1, Secretariat calculations and OECD 2003 for the percentage of foreigners in the United Kingdom and Germany.

Table 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.

Table 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	1201 040	783 364	84 098	**2933 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	2057 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*		
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.
Sources: See Annex 1, Secretariat calculations.

Table 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 1, Secretariat calculations.

Table 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*

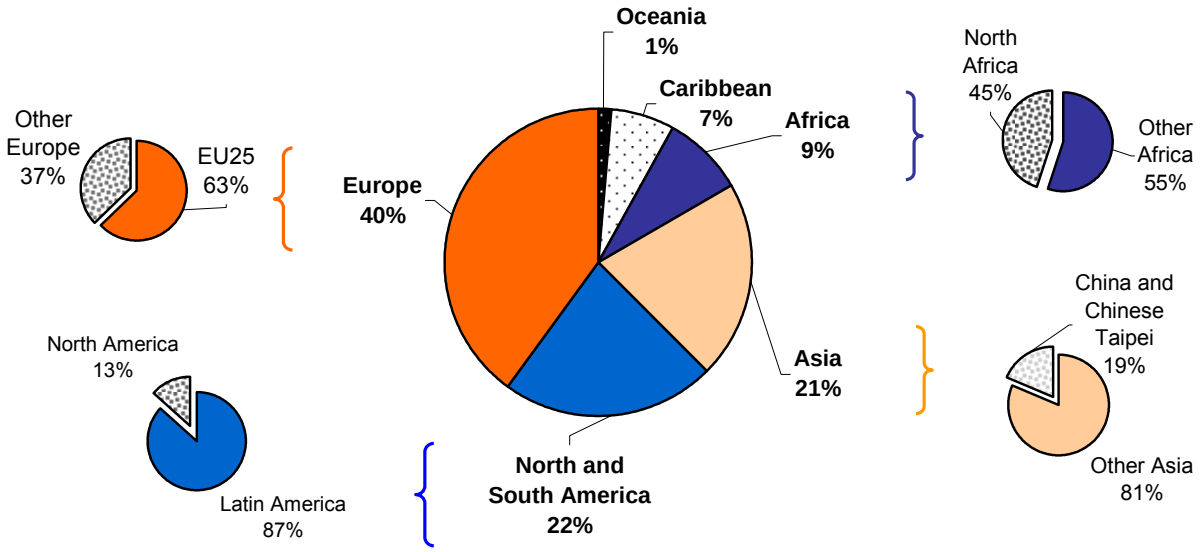
1. Two different sources for the educational attainment of non-OECD countries have been used. They are identified at the top of each column. See Box 3 and bibliography for the detailed references.

Table 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: • a narrow exemption that would apply for seven years and focus on those tax rules that are more comprehensive than the international norm; and • a second option that would apply for three years and provide eligible taxpayers with a broad exemption from paying New Zealand tax on all foreign-sourced income.
Norway	Expatriates expected to reside in Norway for 4 years or less may be allowed a 15 per cent standard deduction from their gross income instead of itemised personal deductions.
Canada	Researchers can benefit from 5-year tax relief in the province of Québec on 75% of their personal income if they settle in Quebec to work in R&D in a firm.
Sweden	Since 1st January 2001 foreign key personnel who are experts and scientists with knowledge and skills that are scarce in Sweden may benefit from a new expatriate regime. No taxes are paid for the first 25% of their income. This is valid for a maximum period of 10 years.
United Kingdom	Persons who are seconded to the UK and declare their intention to remain in the UK on a temporary basis, can claim tax relief on their housing costs and traveling costs. Non-ordinary residents can also claim tax relief for days worked outside the UK.

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

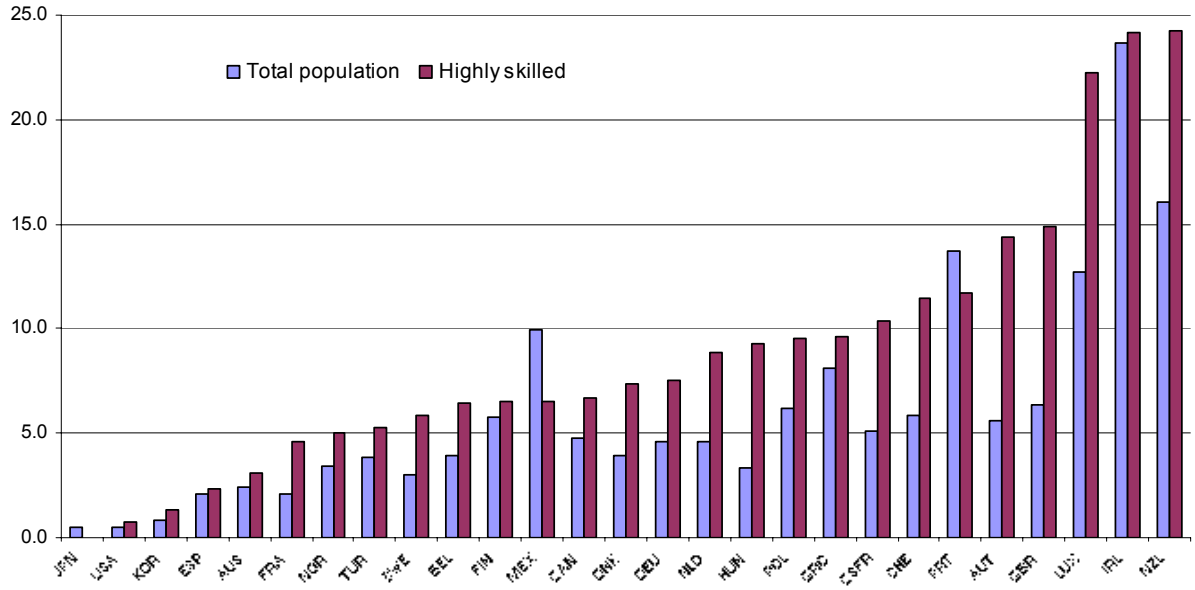
Chart 1. **Foreign-born by region of origin in OECD countries,** percentages



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

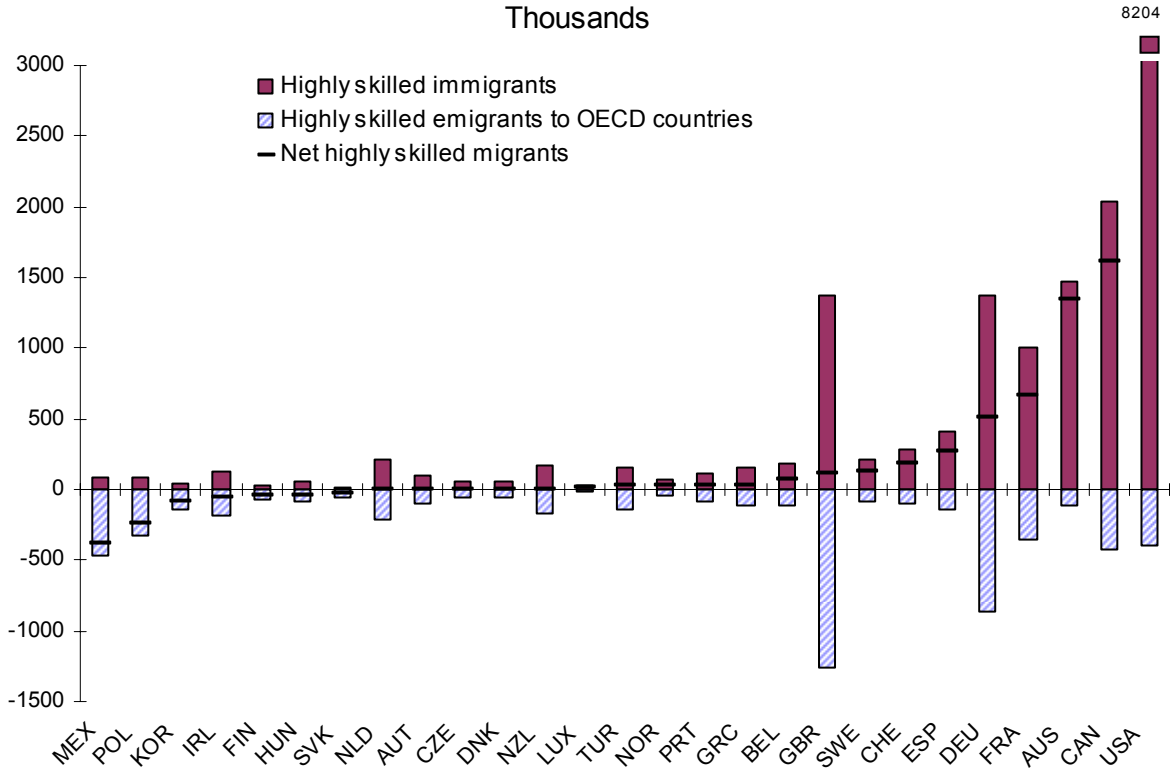
Source: See Annex 1, Secretariat calculations.

Chart 2. **Expatriates as a percentage of all native-born, OECD countries**
Total population and highly skilled



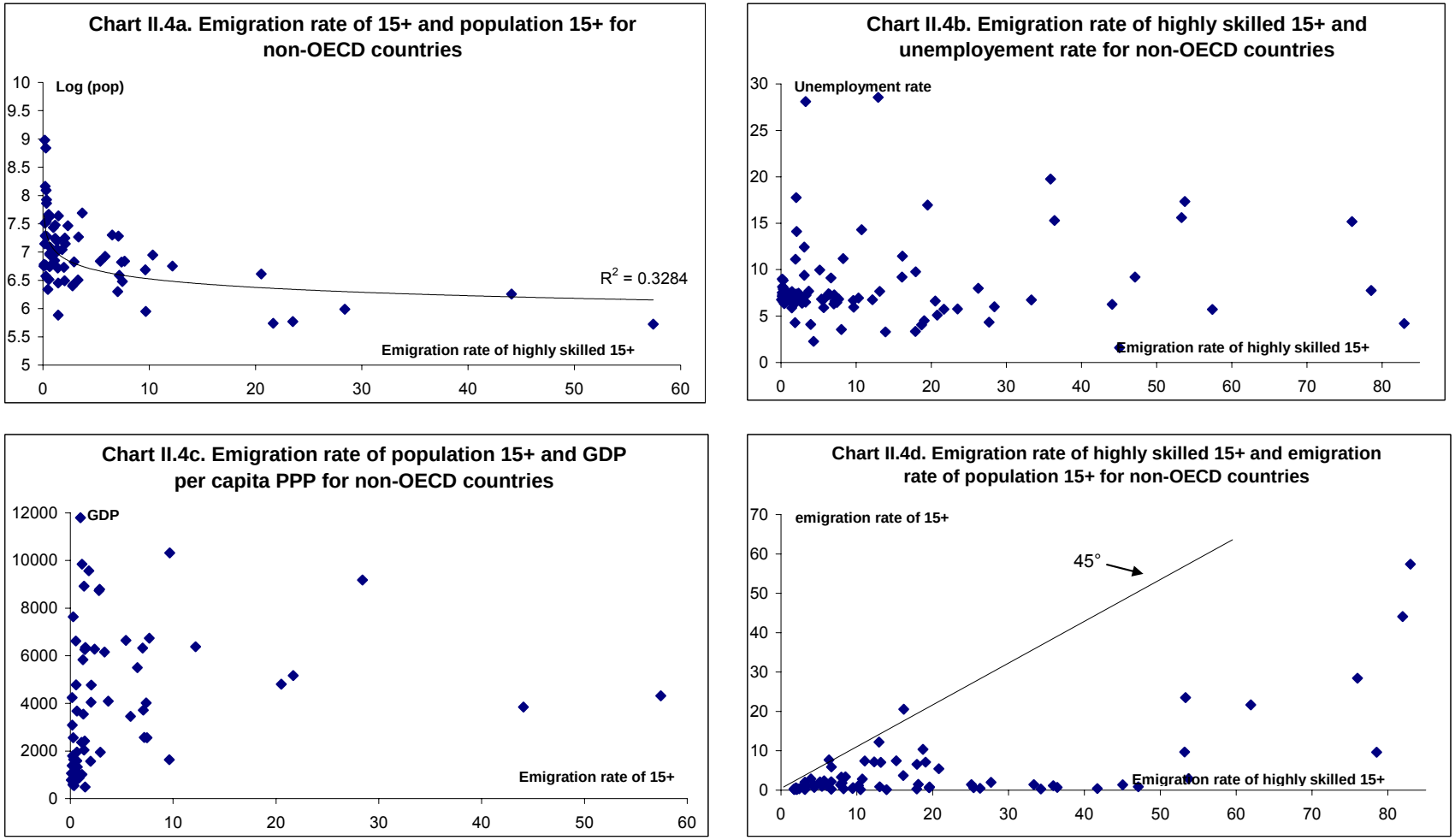
Note: CSFR stands for "Former Czechoslovakia". Data for Korea are partial as several OECD countries do not systematically distinguish betw een people born in the Democratic Republic of Korea and in the People's Republic of Korea.

Chart 3. **Immigrant and emigrant population aged 15+ with tertiary education in OECD countries**



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 1, Secretariat calculations.

Chart 4. **Emigration rates for total and highly skilled populations and various socio-economic characteristics for non-OECD countries**



Note: Calculations are made on population 15 and over. The regression curves represent a power regression in Chart 4a and a logarithmic regression in Chart II.4c.
Sources: Emigration rates are calculated with Cohen and Soto (2001) data. Data on unemployment come from the ILO (Laborsta) and data on GDP per capital at PPP (2001) from World Bank (WDI).

ANNEX 1. 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 (ie. "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[24], 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[25]
• Heard & McDonald Islands	• Faeroe Islands • Greenland	• French southern territories • Tromelin Island • Guadeloupe • Martinique • Reunion • Juan De Nova Island • Guyane • Mayotte • Saint-Pierre-et-Miquelon	• Channel Islands • Isle of Sark • Isle of Man	• Madeira Islands • Azores Islands	• US minor island • Christmas isle • Wake Island • Palmyra Atoll • Navassa Island • Midway Islands • Johnston Atoll • Howland Island • Baker Island

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

[25] People born in Puerto Rico are considered as foreign born in the United States.

Data sources

Country	Data year(s)	ISO code	Type of source	Source description
Australia	2001	AUS	CEN	Australian Census of Population & 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 2

Table A1. **Stocks and percentages of non-citizens and foreign-born in OECD countries** (Total population)

	Native-born				Foreign-born						Percentage of foreign-born [1]	Percentage of non citizens		
	Citizens	**Non-Citizens**	**Unspecified**	**Total**	**Citizens**	**Non-Citizens**	**Unspecified**	**Total**	Unspecified place of birth	**Grand Total**				**Year**
AUS	13411351	34173	183963	13629487	2739559	1263728	69926	4073213	1066542	**18769242**	*23.0*	*7.4*	**AUS**	2001
AUT	6913512	115840	175	7029527	408093	593420	1019	1002532	867	**8032926**	*12.5*	*8.8*	**AUT**	2001
BEL	9001480	194443	514	9196437	447555	650705	935	1099195	718	**10296350**	*10.7 (9.3)*	*8.2*	**BEL**	2002
CAN	23920315	1725		23922040	4150095	1566920		5717015		**29639055**	*19.3 (19.0)*	*5.3*	**CAN**	2001
CHE	5109295	338107		5447402	459569	1111187		1570756	269852	**7288010**	*22.4 (20.2)*	*20.5*	**CHE**	2000
CZE	9556459	20018	607	9577084	357355	90411	711	448477	204499	**10230060**	*4.5*	*1.2*	**CZE**	2001
DEU			71973166.2	71973166			10256083.8	10256084		**82229250**	*12.5*		**DEU**	1999-2002
DNK	4939264	42973		4982237	145508	215545		361053	25064	**5368354**	*6.8*	*5.0*	**DNK**	2002
ESP	38603844	71326		38675170	671514	1500687		2172201		**40847371**	*5.3*	*3.8*	**ESP**	2001
FIN	5031826	12928	158	5044912	54131	75867	1450	131448	4755	**5181115**	*2.5*	*1.7*	**FIN**	2000
FRA	52142848	509598		52652446	3114654	2753588		5868242		**58520688**	*10.0 (7.4)*	*5.6*	**FRA**	1999
GBR			53923642	53923642			4865563	4865563		**58789205**	*8.3*		**GBR**	2001
GRC	9705670	105248	285	9811203	466165	656382	93	1122640	254	**10934097**	*10.3*	*7.0*	**GRC**	2001
HUN	9896815	8520	49	9905384	208259	84485	187	292931		**10198315**	*2.9*	*0.9*	**HUN**	2001
IRL	3405941	7290	45248	3458479	179034	216971	4011	400016		**3858495**	*10.4*	*5.9*	**IRL**	2002
JPN [2]	125625759			1.26E+08		1294341		1294341		**126920100**		*1.0*	**JPN (2)**	2001
KOR [2]	45985289			45985289		135105	15707	150812		**46136101**		*0.3*	**KOR (2)**	2000
LUX	257446	37249		294695	18590	124062		142652	2192	**439539**	*32.6*	*36.9*	**LUX**	2001
MEX			94925622	94925622			492617	492617	2065173	**97483412**	*0.5*		**MEX**	2000
NLD	14268673	103025		14371698	1050600	564777		1615377		**15987075**	*10.1*	*4.2*	**NLD**	2001
NOR	4195719	22752	12	4218483	158865	174875	29	333769		**4552252**	*7.3 (6.7)*	*4.3*	**NOR**	2003
NZL	2890869			2890869	22212		676335	698547	147813	**3737229**	*19.5*		**NZL**	2001
POL	36765038	10135	96108	36871281	741880	29748	3654	775282	583517	**38230080**	*2.1*	*0.1*	**POL**	2002
PRT	9692065	11987	593	9704645	431357	219633	482	651472		**10356117**	*6.3*	*2.2*	**PRT**	2001
SVK	4673150	5888	41592	4720630	98392	18403	2277	119072	539753	**5379455**	*2.5*	*0.5*	**SVK**	2001
SWE	7826472	71123		7897595	672990	404606		1077596	479	**8975670**	*12.0*	*5.3*	**SWE**	2003
TUR			66525256	66525256	997314	262061		1259375	1155	**67785786**	*1.9*		**TUR**	2000
USA	246787150			2.47E+08	16069523	18565268		34634791		**281421941**	*12.3 (11.1)*	*6.6*	**USA**	2000
Total	**690606250**	**1724348**	**287716990**	**9.8E+08**	**33663214**	**32572775**	**16391079.8**	**82627069**	**4912633**	**1067587290**	***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 1 for further details).

Table A2. **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 1, Secretariat calculations.

Table A3. **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.

Table A4. 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	4282959	*45.8*	1467214	*15.7*	3610692	*38.6*	145112	*1.6*	890502	1310051	*38.3*	643732	*18.8*	1465733	*42.9*	120729	*3.5*	442044	743848	**AUS**
AUT	1924574	*33.4*	3203774	*55.7*	626609	*10.9*				456032	*49.4*	362918	*39.3*	104742	*11.3*				795	**AUT**
BEL	3209646	*46.8*	2078319	*30.3*	1570363	*22.9*	30180	*0.4*	613374	443045	*54.2*	197573	*24.2*	176917	*21.6*	9099	*1.1*	201779	513	**BEL**
CAN	5864360	*31.6*	6847165	*36.9*	5834055	*31.5*	59365	*0.3*		1612380	*30.1*	1709705	*31.9*	2033490	*38.0*	69300	*1.3*			**CAN**
CHE	1024780	*25.6*	2252546	*56.3*	723364	*18.1*			337712	485466	*41.6*	405183	*34.7*	276791	*23.7*			286745	250763	**CHE**
CZE	1809625	*22.8*	5310328	*67.0*	806551	*10.2*	29446	*0.4*	38276	164538	*38.4*	208718	*48.8*	54766	*12.8*	3037	*0.7*	4212	178184	**CZE**
DEU	13011570	*23.7*	31154820	*56.8*	10675988	*19.5*				3870908	*43.7*	3612460	*40.8*	1372254	*15.5*					**DEU**
DNK	1648305	*41.0*	1613993	*40.2*	753930	*18.8*	7895	*0.2*		155216	*48.6*	101842	*31.9*	62243	*19.5*	637	*0.2*		23089	**DNK**
ESP	19127995	*63.9*	4993877	*16.7*	5789438	*19.4*	153138	*0.5*		1029435	*55.4*	423225	*22.8*	404387	*21.8*	18407	*1.0*			**ESP**
FIN	1662854	*40.3*	1497548	*36.3*	967291	*23.4*	22117	*0.5*		59374	*52.7*	31940	*28.4*	21322	*18.9*	1097	*1.0*		4453	**FIN**
FRA	19433046	*45.8*	15874617	*37.4*	7160516	*16.9*				3066864	*54.8*	1521910	*27.2*	1011424	*18.1*					**FRA**
GBR	18424701	*51.2*	10314951	*28.7*	7232100	*20.1*			7209262	1602168	*40.6*	968116	*24.5*	1374370	*34.8*			558667		**GBR**
GRC	4498041	*54.4*	2662076	*32.2*	1112057	*13.4*	73774	*0.9*		448046	*44.8*	399653	*39.9*	153083	*15.3*	9112	*0.9*		242	**GRC**
HUN	3711782	*45.1*	3636532	*44.2*	879571	*10.7*				113250	*41.1*	107779	*39.1*	54465	*19.8*					**HUN**
IRL	1228075	*47.8*	758006	*29.5*	584325	*22.7*	6739	*0.3*	131206	92939	*29.6*	92011	*29.3*	128762	*41.0*	3655	*1.2*	19292		**IRL**
KOR	13132782	*36.1*	13498737	*37.2*	9703531	*26.7*	568042	*1.6*	11483	33433	*23.8*	61950	*44.0*	45355	*32.2*			78		**KOR**
LUX	55971	*28.7*	114240	*58.6*	24890	*12.8*			29853	40499	*36.7*	45807	*41.6*	23916	*21.7*			19539	1627	**LUX**
MEX	44760651	*72.3*	10380897	*16.8*	6757285	*10.9*	373353	*0.6*	528077	86732	*36.5*	60946	*25.7*	89689	*37.8*	14139	*6.0*	4095	174266	**MEX**
NLD	4534737	*40.7*	4426572	*39.8*	2169015	*19.5*				629462	*53.0*	349889	*29.4*	208863	*17.6*				148818	**NLD**
NOR	677175	*21.2*	1776416	*55.6*	739122	*23.2*	10074	*0.3*	210377	38466	*18.3*	106590	*50.6*	65535	*31.1*	3049	*1.4*	80830		**NOR**
NZL	578331	*30.1*	819588	*42.7*	521349	*27.2*			226410	102603	*18.7*	276585	*50.4*	170082	*31.0*			74688	119859	**NZL**
POL	9321483	*31.2*	17427397	*58.4*	3111488	*10.4*	101047	*0.3*	173876	348750	*47.9*	293537	*40.3*	86385	*11.9*	6248	*0.9*	9067	516445	**POL**
PRT	6494230	*80.0*	991642	*12.2*	627711	*7.7*	10223	*0.1*		320778	*54.7*	151806	*25.9*	113348	*19.3*	3039	*0.5*			**PRT**
SVK	1057596	*28.0*	2342010	*62.0*	378694	*10.0*			19483	32933	*29.3*	63013	*56.1*	16424	*14.6*			805	405480	**SVK**
SWE	1375361	*25.0*	2868919	*52.2*	1252919	*22.8*	38438	*0.7*	32452	253195	*29.6*	395962	*46.2*	207558	*24.2*	13107	*1.5*	75394	359	**SWE**
TUR	36721637	*79.4*	7030720	*15.2*	2497755	*5.4*				479520	*49.3*	331728	*34.1*	161557	*16.6*	10988	*1.1*		456	**TUR**
USA	41438103	*21.9*	97004014	*51.2*	50983357	*26.9*	1317999	*0.7*		12632924	*39.8*	10885700	*34.3*	8204473	*25.9*	443152	*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 1, Secretariat calculations.

Table A5. **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**
Origin country	**AUS**		1686	1136	20155	3420	230		1663	3913	656	4216	107871	20449	258
	AUT	19313		3166	22585	54616	7358	133341	1464	4100	312	12171	19503	2252	3716
	BEL	4900	1523		20990	10738	755	22702	1249	28200	206	124709	21668	4671	520
	CAN	27289	1658	4145		7519	490		2752	3810	1181	18913	72518	12477	632
	CHE	10753	11713	4274	21595		385	28945	1910	53484	615	75598	16010	3567	616
	CZE	6973	54627	77	16500	11021			292	1891	39	3438	12220	3725	2494
	DEU	108220	140099	83386	191140	181984	9647		26559	135638	3582	215167	266136	101425	10173
	DNK	9089	1090	2973	18400	4122	136	17594		5749	708	5482	18695	830	100
	ESP	12662	2072	36840	10785	61679	170	86160	2851		779	342071	54482	972	139
	FIN	8258	1300	2761	14395	3842	332	11067	3575	5378		3525	11322	849	343
	FRA	18827	5903	151976	80965	98352	3633	74131	4038	156681	1089		96281	6723	1738
	GBR	1036245	6786	26176	624305	25378	1436	85058	13615	107794	2731	84493		13303	1186
	GRC	116431	3060	15089	76900	6295	1806	261329	1066	1132	468	11872	35169		1228
	HUN	22752	30953	5486	50830	12403	6200	38309	1604	1460	873	10543	13159	1586	
	IRL	50235	546	2999	26430	1542	67	7946	1091	4342	200	5316	537108	498	48
	ISL	463	135	164	500	151	20		5855	306	120	333	1552	32	5
	ITA	218718	26099	132466	319230	234634	1035	429313	3364	26578	958	409190	107244	5929	935
	JPN	25471	1957	3850	27245	4388	193		1364	3154	640	14261	37535	560	324
	KOR	38900	1446	4049	82890	1613	76		8056	2158	132	15852	12310	204	144
	LUX	141	514	10459	560	1436	15	4540	245	1029	32	9895	1222	99	17
	MEX	1154	721	1150	44190	2863			524	20949	153	6360	5049	363	45
	NLD	83324	5248	97165	119310	16771	549	68459	4833	23153	731	27618	40438	3083	513
	NOR	4324	742	1295	6505	1818	107		16386	5922	954	2838	13798	459	288
	NZL	355765	245	301	9920	1148	35		538	331	86	1071	58286	506	35
	POL	58110	41671	19894	182155	10679	24707	1170711	10723	16423	1173	106650	60711	15468	2685
	PRT	15441	950	21371	155980	100975	39	94258	686	56359	141	579465	36555	292	28
	SVK	2984	15981	30	10740	3736	285372		135	1217	17	2149	5273	411	37439
	SWE	6818	3214	3991	7725	6878	210	10783	18706	9424	28040	8658	22525	5428	394
	TUR	29821	125026	70793	17810	58546	222	1610735	30175	986	2150	179392	54079	76561	696
	USA	53694	7371	13925	278570	21775	2197	81308	8367	21320	2903	39464	158434	23091	2567
	CSFR			3152	13415			36877	2320		298	6262			
OECD foreign-born		**2347075**	**494336**	**724539**	**2472720**	**950322**	**347422**	**4273566**	**176006**	**702881**	**51967**	**2326972**	**1897153**	**305813**	**69306**
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*

Table A5. **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**	6148	719	96	281	9529	1101	56142	608	1192	52	2525	2938	75314	**171760**
	AUT	293		624	500	6746	1040	1200	4312	391	808	5967	14335	70560	**284430**
	BEL	324		14770	735	46003	907	513	2797	2879	179	1356	8751	41705	**243972**
	CAN	7067	2468	305	5768	8427	2290	7770	1555	7326	115	2471	1427	945060	**157465**
	CHE	677		787	1478	5792	1507	2763	506	12897	51	2557	10369	49445	**230347**
	CZE	113		253	225	121	567	663	6200	130	75585	522	1026	24865	**114486**
	DEU	3407	920	12847	5595	123110	12880	8382	101633	24283	735	40217	273535	1241450	**1481926**
	DNK	311		1522	245	3242	23326	1446	704	387	17	40921	3372	34064	**85665**
	ESP	1183		2120	21114	18279	1782	339	1111	13966	30	5470	1209	114190	**616294**
	FIN	512		701	126	2379	7027	372	192	312	11	189341	1672	22865	**67634**
	FRA	3768	1142	18864	5751	19338	3069	2283	34647	95282	1393	6155	16048	204238	**707152**
	GBR	10411	1184	3167	2688	45691	14332	218394	2630	10068	87	16428	18939	823279	**2277021**
	GRC	165		865	298	7375	636	942	2793	125	26	10853	59217	178155	**532190**
	HUN	266		293	239	5333	1507	987	1344	217	17293	13794	520	94095	**196614**
	IRL	618		641	192	4425	499	6726	71	533	2	1349	538	164435	**638368**
	ISL	31		309	16	385	3941	84	41	34	1	3811	43	9805	**9691**
	ITA	1127		12254	3904	17207	1506	1440	4292	1958	117	6584	2843	536370	**1919398**
	JPN		13398	289	2936	5879	932	8622	230	280	16	2502	2003	497945	**121658**
	KOR			513	2100	5305	6347	17934	37	74	1	9574	513	156085	**167996**
	LUX	8			15	827	93	30	125	3313		139	46	2690	**30289**
	MEX	1222		61		1454	471	243	116	214	9	1328	154	9336530	**83835**
	NLD	604		3284	773		4389	22239	964	3250	32	5150	21823	105920	**494707**
	NOR	280		152	134	2499		465	315	283	9	45087	3554	36340	**55877**
	NZL	2401		33	77	3582	345		50	48	3	763	290	26350	**430523**
	POL	468		1006	971	17351	6702	1938		358	3473	41608	3415	477450	**1723927**
	PRT	368		41690	288	10218	760	141	60		4	2533	225	212115	**1063130**
	SVK	107		93	23	67	306	138	1514	30		374	315	15945	**365816**
	SWE	798		984	425	3642	32939	960	703	741	23		5335	54435	**134109**
	TUR	915		290	246	181865	8410	396	452	106	30	34083		90595	**2257537**
	USA	38804	11940	1094	343597	21356	14725	13344	9010	7301	829	15143	13579		**736527**
	CSFR					4984	317					7330		45245	**62324**
OECD foreign-born		**82396**	**31771**	**119907**	**400740**	**582411**	**154653**	**376896**	**179012**	**187978**	**100931**	**515935**	**468034**	**15687540**	**17462668**
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 1, Secretariat calculations.

Table A6. **Total number of highly skilled expatriates and percentage of highly skilled expatriates by country of birth**

	Total number of expatriates	*of which:* highly skilled (%)
Afghanistan	129211	*25.2*
Albania	389264	*9.1*
Algeria	1301076	*16.4*
American Samoa	30539	*10.4*
Andorra	3687	*23.1*
Angola	195674	*19.6*
Anguilla	1677	*30.9*
Antigua and Barbuda	24400	*26.5*
Argentina	266070	*37.8*
Armenia	80442	*30.1*
Aruba	5744	*47.1*
Australia	267314	*43.6*
Austria	366023	*28.7*
Azerbaijan	29263	*41.2*
Bahamas	30750	*29.2*
Bahrain	7424	*40.6*
Bangladesh	275770	*27.9*
Barbados	88895	*26.3*
Belarus	149935	*25.0*
Belgium	321544	*33.8*
Belize	43023	*20.2*
Benin	13669	*43.8*
Bermuda	19572	*34.8*
Bhutan	809	*25.5*
Bolivia	72400	*30.4*
Bosnia-Herzegovina	536327	*11.5*
Botswana	4298	*37.4*
Brazil	351878	*31.7*
British Indian Ocean Territory	36	*13.9*
British Virgin Islands	2252	*32.9*
Brunei Darussalam	9059	*39.3*
Bulgaria	527819	*14.5*
Burkina Faso	6237	*38.4*
Burundi	10095	*38.6*
Cambodia	238539	*15.7*
Cameroon	57050	*42.3*
Canada	1044978	*40.0*
Cape Verde	83291	*6.2*
Cayman Islands	2389	*19.5*
Central African Republic	9855	*32.7*
Chad	5836	*42.1*
Chile	200366	*33.0*
China	1649711	*39.6*
Cocos (Keeling) Islands	2	*0.0*
Columbia	682156	*25.1*
Comoros	17723	*10.7*
Congo	100052	*36.6*
Cook Islands	18002	*8.6*
Costa Rica	76112	*24.2*
Côte d'Ivoire	58843	*27.5*
Croatia	422277	*14.0*
Cuba	914501	*24.2*
Cyprus	138711	*25.2*
Czech Republic	215879	*24.6*
Democratic People's Republic of Korea	1919	*33.2*
Democratic Rep. of Congo	66488	*32.5*
Denmark	173009	*34.6*
Djibouti	5359	*29.7*
Dominica	25738	*21.7*
Dominican Republic	691884	*12.3*
East Timor	8994	*17.5*
Ecuador	490267	*15.4*
Egypt	274833	*51.2*
El Salvador	839511	*7.8*
Equatorial Guinea	12149	*22.7*
Eritrea	35127	*24.0*
Estonia	35077	*32.0*
Ethiopia	113838	*31.2*
Falkland Islands	1316	*22.5*
Federal Rep. Of Yugoslavia	1064580	*11.9*
Fiji	119400	*26.4*
Finland	265245	*25.4*
Former Czechoslovakia	109984	*29.8*
Former USSR	2222270	*29.0*
Former Yugoslavia (Others) [1]	54776	*11.8*
France	1013581	*34.4*
Gabon	10951	*35.8*
Gambia	20923	*16.9*
Georgia	83419	*25.0*
Germany	2933757	*29.5*
Ghana	150665	*34.0*
Gibraltar	11886	*23.3*
Greece	735430	*16.1*
Grenada	46825	*23.2*
Guam	57742	*26.1*
Guatemala	489772	*8.2*
Guinea	19684	*24.5*
Guinea-Bissau	29449	*12.7*
Guyana	305544	*24.9*
Haiti	466897	*19.8*
Holy See	93	*35.5*
Honduras	278593	*10.5*
Hong Kong, China	587400	*42.8*
Hungary	314923	*28.7*
Iceland	23070	*33.8*
India	1928199	*51.9*
Indonesia	289167	*34.3*
Iran	632980	*45.6*
Iraq	294967	*28.2*
Ireland	792316	*23.5*
Israel	162567	*42.9*
Italy	2430339	*12.4*
Jamaica	796046	*24.0*
Japan	575992	*48.9*
Jordan	62796	*41.0*
Kazakhstan	43226	*28.4*
Kenya	197445	*37.4*
Kiribati	1964	*22.4*
KOR+PRK	672755	*43.3*
Kuwait	37591	*44.1*
Kyrgyzstan	4640	*39.0*
Lao People's Democratic Republic	264864	*14.4*
Latvia	54153	*37.4*
Lebanon	332270	*32.9*
Lesotho	995	*45.7*
Liberia	41756	*33.0*
Libya	27481	*43.4*
Liechtenstein	3532	*19.3*
Lithuania	132843	*22.1*
Luxembourg	27164	*26.2*
Macao, China	18881	*36.0*
Macedonia	149014	*11.8*
Madagascar	75954	*32.0*
Malawi	15024	*35.2*
Malaysia	209910	*50.8*
Maldives	519	*34.5*
Mali	45034	*12.6*
Malta	96837	*19.5*
Marshall Islands	5446	*10.7*
Mauritania	14813	*18.5*
Mauritius	86410	*28.0*
Mexico	8431381	*5.6*
Micronesia (Federated States of)	6697	*13.3*
Monaco	11208	*24.6*
Mongolia	4709	*43.8*
Montserrat	11397	*16.7*
Morocco	1364754	*14.8*
Mozambique	85337	*26.5*
Myanmar	57962	*42.9*
Namibia	3390	*45.3*
Nauru	646	*30.7*
Nepal	23229	*39.9*
Netherlands	616910	*34.0*
Netherlands Antilles	68949	*15.5*
New Zealand	410663	*40.6*
Nicaragua	224531	*17.9*
Niger	4948	*38.0*
Nigeria	247497	*55.1*
Niue	5633	*10.0*
Norfolk Islands	269	*28.6*
Northern Mariana Islands	3647	*25.2*
Norway	122079	*32.1*
Occupied Palestinian Territory	14798	*43.8*
Oman	2753	*36.9*
Pakistan	655162	*30.8*
Palau	2187	*28.5*
Panama	140631	*32.6*
Papua New Guinea	26074	*43.9*
Paraguay	18504	*25.0*
Peru	361506	*30.2*
Philippines	1816418	*48.1*
Pitcairn	173	*42.2*
Poland	1276482	*25.7*
Portugal	1268726	*6.5*
Puerto Rico	1312753	*14.7*
Qatar	3384	*43.3*
Republic of Korea	312538	*43.2*
Republic of Moldova	35365	*36.7*
Romania	613168	*26.3*
Russia	580570	*43.0*
Rwanda	14832	*34.4*
Saint Helena	2460	*10.4*
Saint Kitts and Nevis	20078	*26.6*
Saint Lucia	24722	*20.3*
Saint Vincent and the Grenadines	34969	*24.5*
Samoa	71801	*10.3*
San Marino	775	*17.9*
Sao Tome and Principe	11732	*10.7*
Saudi Arabia	34646	*35.4*
Senegal	104715	*23.1*
Seychelles	7602	*22.5*
Sierra Leone	40556	*33.6*
Singapore	105805	*45.9*
Slovak Republic	374570	*13.8*
Slovenia	52271	*17.5*
Solomon Islands	1982	*45.0*
Somalia	131342	*11.9*
South Africa	342947	*47.9*
Spain	763014	*18.0*
Sri Lanka	292247	*29.7*
Sudan	42086	*40.5*
Suriname	186532	*14.6*
Svalbard and Jan Mayen Islands	23	*17.4*
Swaziland	2103	*41.7*
Sweden	206604	*37.8*
Switzerland	262456	*35.8*
Syria	126372	*34.1*
Taiwan Province of China	431462	*61.1*
Tajikistan	3094	*42.4*
Thailand	249951	*29.3*
Timor-Leste	2190	*20.8*
Togo	18024	*36.3*
Tokelau	1815	*11.3*
Tonga	41116	*11.2*
Trinidad and Tobago	276934	*29.5*
Tunisia	371274	*17.7*
Turkey	2195645	*6.3*
Turkmenistan	3269	*32.8*
Turks and Caicos Islands	1429	*18.2*
Tuvalu	1065	*8.0*
U. Rep. Of Tanzania	70006	*41.0*
Uganda	82232	*39.2*
Ukraine	753080	*27.2*
United Arab Emirates	14589	*23.9*
United Kingdom	3229676	*39.2*
United States of America	809540	*48.2*
Uruguay	70093	*29.9*
US virgin Island	48770	*25.0*
Uzbekistan	34123	*40.3*
Vanuatu	2002	*32.1*
Venezuela	200461	*40.2*
Vietnam	1507164	*23.6*
Western Sahara	158	*33.5*
Yemen	32428	*19.3*
Zambia	34825	*49.3*
Zimbabwe	77345	*43.3*

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. In that case, data are specified in this category.

Sources: See Annex 1, Secretariat calculations (not including Japan and Italy as receiving countries).

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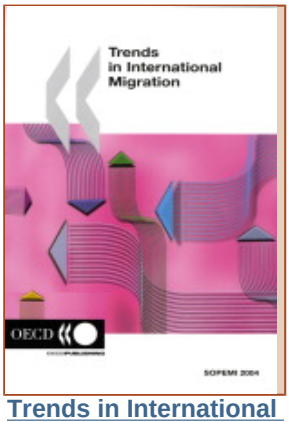

Trends in International Migration 2004
This annual publication analyses recent trends in migration movements and policies in all OECD member countries and selected non-member economies.

Just Published

New program on the integration of immigrants on the labour market

25-May-2004

The LEED Programme and the Non-Member Economies and International Migration Division (NEIM) have launched a joint activity related to the analysis of economic and social policies to foster labour market or overall social integration of immigrants and of persons of immigrant descent in host countries.

Trends in International Migration Reflect Increasing Labour-related Immigration and Persistent Integration Problems

21-Jan-2004

Record numbers of people are moving to many OECD countries in search of jobs and to join their families. The latest edition of OECD's annual Trends in International Migration notes that the economic down-turn in some OECD countries has not affected the upward trend in international migration which began in the mid-1990s.

The Economic and Social Aspects of Migration - Brussels, 21-22 January 2003

An International Conference on the Economic and Social Aspects of Migration, jointly organised by the European Commission and the OECD, took place in Brussels on 21 and 22 January 2003. This conference analysed the social and economic challenges of migration in relation to the demographic structure and the economic situation of OECD Member countries, as well as labour market needs, and the prospects for the integration of immigrants and equal opportunities.

The conference provided the opportunity to identify the implications for future migration policies of the economic and social dimensions of migration. Using a comparative approach between European and non-European OECD Member countries, the role that migration could play in alleviating labour shortages and the best practices in the successful integration of immigrants were highlighted, including the fundamental role played by women. The participants agreed on the need to improve communication, in order to better inform the public on the costs and benefits of immigration, to allow them to understand the grounds for the policies implemented by governments.

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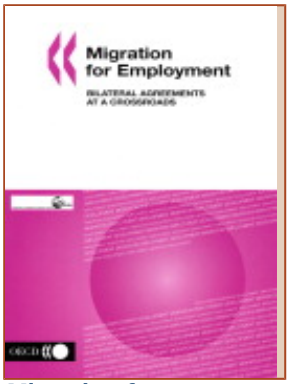

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