# EXECUTIVE SUMMARY

The United Nations Population Division monitors fertility, mortality and migration trends for all countries of the world, as a basis for producing the official United Nations population estimates and projections. Among the demographic trends revealed by those figures, two are particularly salient: population decline and population ageing.

Focusing on these two striking and critical trends, the present study addresses the question of whether replacement migration is a solution to declining and ageing populations. Replacement migration refers to the international migration that would be needed to offset declines in the size of population and declines in the population of working age, as well as to offset the overall ageing of a population.

The study computes the size of replacement migration and investigates the possible effects of replacement migration on the population size and age structure for a range of countries that have in common a fertility pattern below the replacement level. Eight countries are examined: France, Germany, Italy, Japan, Republic of Korea, Russian Federation, the United Kingdom of Great Britain and Northern Ireland and the United States of America. Two regions are also included: Europe and the European Union. The time period covered is roughly half a century, from 1995 to 2050.

According to the United Nations population projections (medium variant), Japan and virtually all the countries of Europe are expected to decrease in population size over the next 50 years. For example, the population of Italy, currently 57 million, is projected to decline to 41 million by 2050. The population of the Russian Federation is expected to decrease from 147 million to 121 million between 2000 and 2050. Similarly, the population of Japan, currently 127 million, is projected to decline to 105 million by 2050.

In addition to the decrease in population size, Japan and the countries of Europe are undergoing a relatively rapid ageing process. In Japan, for example, over the next half century the median age of the population is expected to increase by about eight years, from 41 to 49 years. In addition, the proportion of the Japanese population 65 years or older is expected to increase from its current 17 per cent to 32 per cent. Similarly, in Italy the median age of the population is expected to increase from 41 years to 53 years, and the proportion of the population 65 years or older is projected to rise from 18 per cent to 35 per cent.

Building upon these estimates and projections, the present study considers six different scenarios with regard to the international migration streams needed to achieve specific population objectives or outcomes for the eight countries and two regions mentioned above. These are not meant to be recommendations in any way, but illustrations of hypothetical scenarios. The six scenarios are described below:

Scenario I. This scenario is based on the medium variant of the projections from the United Nations *World Population Prospects: 1998 Revision* (henceforth referred to as the *1998 Revision*).

Scenario II. This scenario is based on the medium variant of the *1998 Revision*, amended by assuming zero migration after 1995.

Scenario III. This scenario computes and assumes the migration required to maintain the size of the total population at the highest level it would reach in the absence of migration after 1995.

Scenario IV. This scenario computes and assumes the migration required to maintain the size of the working-age population (15 to 64 years) at the highest level it would reach in the absence of migration after 1995.

Scenario V. This scenario computes and assumes the migration required to prevent the ratio of the size of the population aged 15-64 to the size of the population aged 65 or over, called the potential support ratio (PSR), from declining below the value of 3.0.

Scenario VI. This scenario computes and assumes the migration required to maintain the potential support ratio (PSR), at the highest level it would reach in the absence of migration after 1995.

The total and average annual numbers of migrants for the period 2000-2050 for each scenario are presented in table 1. Scenario I shows the numbers of migrants assumed for the eight countries and two regions in the medium variant of the United Nations projections. For example, the total number of migrants for the United States for the fifty-year period is 38 million; and the average annual number is 760,000. Scenario II assumes zero migration for the entire period; the resulting populations and age structures are given in the text of this report.

TABLE 1. NET NUMBER OF MIGRANTS BY COUNTRY OR REGION AND SCENARIO, 2000-2050
(*Thousands*)

| *Scenario* | *I* | *II* | *III* | *IV* | *V* | *VI* |
|---|---|---|---|---|---|---|
| *Country or region* | *Medium variant* | *Medium variant with zero migration* | *Constant total population* | *Constant age group 15-64* | *Ratio 15-64/65+ not less than 3.0* | *Constant ratio 15-64/65 years or older* |
| | | | *A. Total number* | | | |
| France | 325 | 0 | 1 473 | 5 459 | 16 037 | 89 584 |
| Germany | 10 200 | 0 | 17 187 | 24 330 | 40 481 | 181 508 |
| Italy | 310 | 0 | 12 569 | 18 596 | 35 088 | 113 381 |
| Japan | 0 | 0 | 17 141 | 32 332 | 94 837 | 523 543 |
| Republic of Korea | -350 | 0 | 1 509 | 6 426 | 11 595 | 5 128 147 |
| Russian Federation | 5 448 | 0 | 24 896 | 35 756 | 26 604 | 253 379 |
| United Kingdom | 1 000 | 0 | 2 634 | 6 247 | 13 674 | 59 722 |
| United States | 38 000 | 0 | 6 384 | 17 967 | 44 892 | 592 572 |
| Europe | 18 779 | 0 | 95 869 | 161 346 | 235 044 | 1 356 932 |
| European Union | 13 489 | 0 | 47 456 | 79 375 | 153 646 | 673 999 |
| | | | *B. Average annual number* | | | |
| France | 7 | 0 | 29 | 109 | 321 | 1 792 |
| Germany | 204 | 0 | 344 | 487 | 810 | 3 630 |
| Italy | 6 | 0 | 251 | 372 | 702 | 2 268 |
| Japan | 0 | 0 | 343 | 647 | 1 897 | 10 471 |
| Republic of Korea | -7 | 0 | 30 | 129 | 232 | 102 563 |
| Russian Federation | 109 | 0 | 498 | 715 | 532 | 5 068 |
| United Kingdom | 20 | 0 | 53 | 125 | 273 | 1 194 |
| United States | 760 | 0 | 128 | 359 | 898 | 11 851 |
| Europe | 376 | 0 | 1 917 | 3 227 | 4 701 | 27 139 |
| European Union | 270 | 0 | 949 | 1 588 | 3 073 | 13 480 |

Except for the United States, the numbers of migrants needed to maintain the size of the total population (scenario III) are considerably larger than those assumed in the medium variant of the United Nations projections (scenario I). In Italy, for example, the total number of migrants is 12.6 million (or 251 thousand per year) in scenario III versus 0.3 million (or 6 thousand per year) in scenario I. For the European Union, the respective numbers are 47 million versus 13 million (or 949 thousand per year versus 270 thousand per year).

In scenario IV, in order to keep constant the size of the working-age population (15 to 64 years), the numbers of migrants are even larger than those in scenario III. In Germany, for instance, the total number of migrants is 24 million (or 487 thousand per year) in scenario IV versus 17 million (or 344 thousand per year) in scenario III.

Figure 1 provides a standardized comparison by presenting the migration flows expressed in per million inhabitants in 2000. This comparison shows that relative to country size the number of migrants needed between 2000-2050 to maintain the size of the working-age population (scenario IV) is the highest for Italy, with 6,500 annual immigrants per million inhabitants, followed by Germany, with 6,000 annual immigrants per million inhabitants. Among the countries and regions studied in this report, the United States would require the smallest number of immigrants, approximately 1,300 per million inhabitants, to prevent the decline of its working-age population.

In scenario V, to prevent the potential support ratio from reaching below 3.0, the dates when migrants would be needed would occur later than in scenario IV, but the numbers of migrants that would be needed are much larger than that in scenario IV. In France, for instance, the total number of migrants is 16 million in scenario V versus 5 million in scenario IV, and in Japan it is 95 million versus 32 million.

The numbers in scenario VI, which keeps the potential support ratio constant, are extraordinarily large. In Japan, for example, the total number of migrants in scenario VI is 524 million (or 10.5 million per year). For the European Union, the total number of migrants in this scenario is 674 million (or 13 million per year).

Readers should keep in mind that the results of scenario VI are for illustrative purposes only. Given the assumption that the current age structure of the population would remain unchanged in the future, the resulting large number of migrants needed should be considered totally unrealistic.

Major findings of this study include the following:

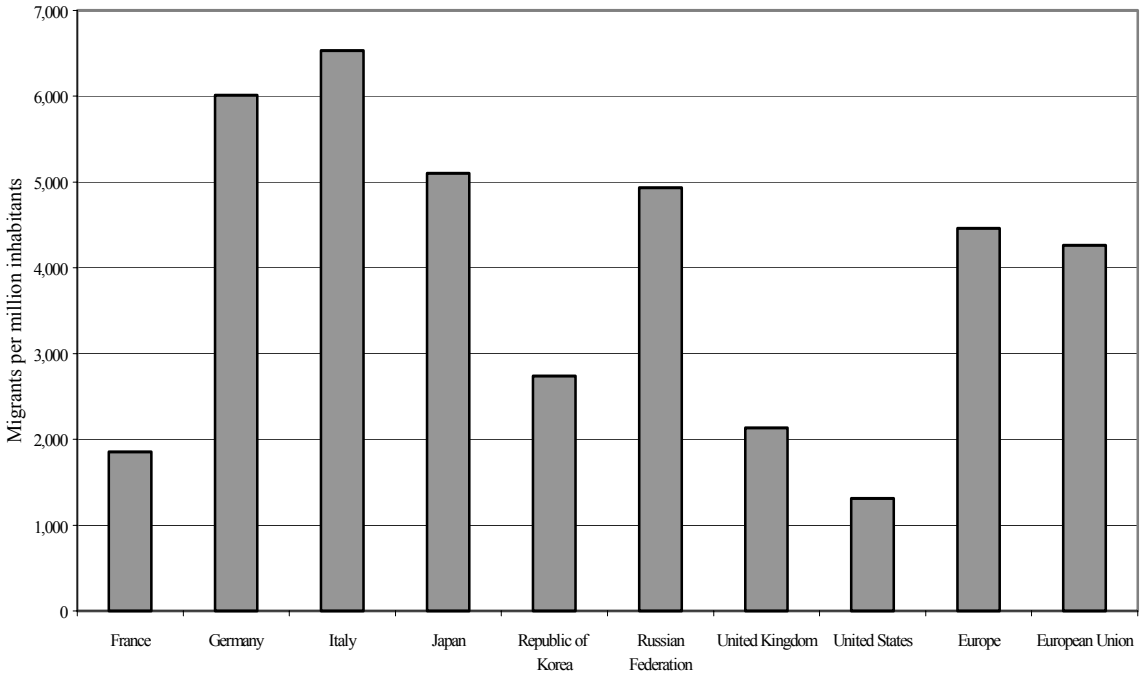
1. During the first half of the twenty-first century, the populations of most developed countries are projected to become smaller and older as a result of below-replacement fertility and increased longevity.

2. In the absence of migration, the declines in population size will be even greater than those projected, and population ageing will be more rapid.

3. Although fertility may rebound in the coming decades, few believe that fertility in most developed countries will recover sufficiently to reach replacement level in the foreseeable future, thus making population decline inevitable in the absence of replacement migration.

4. The projected population decline and population ageing will have profound and far-reaching consequences, forcing Governments to reassess many established economic, social and political policies and programmes, including those relating to international migration.

**Figure 1. Average annual net number of migrants between 2000 and 2050 to maintain size of working-age population, per million inhabitants in 2000**




5. For France, the United Kingdom, the United States and the European Union, the numbers of migrants needed to offset population decline are less than or comparable to recent past experience. While this is also the case for Germany and the Russian Federation, the migration flows in the 1990s were relatively large due to reunification and dissolution, respectively.

6. For Italy, Japan, the Republic of Korea and Europe, a level of immigration much higher than that experienced in the recent past would be needed to offset population decline.

7. The numbers of migrants needed to offset declines in the working-age population are significantly larger than those needed to offset total population decline. Whether those larger numbers of migrants are within the realm of options open to Governments depends to a great extent on the social, economic and political circumstances of the particular country or region.

8. If retirement ages remain essentially where they are today, increasing the size of the working-age population through international migration is the only option in the short to medium term to reduce declines in the potential support ratio.

9. The levels of migration needed to offset population ageing (i.e., maintain potential support ratios) are extremely high, and in all cases entail vastly more immigration than has occurred in the past.

10. Maintaining potential support ratios at current levels through replacement migration alone seems out of reach, because of the extraordinarily large numbers of migrants that would be required.

11. Possible future increases in economic activity rates for people aged less than 65 years cannot, on their own, be a solution to the decline in the active support ratios caused by population ageing.

12. In most cases, the potential support ratios could be maintained at current levels by increasing the upper limit of the working-age population to roughly 75 years of age.

13. The new challenges being brought about by declining and ageing populations will require objective, thorough and comprehensive reassessments of many established economic, social and political policies and programmes. Such reassessments will need to incorporate a long-term perspective. Critical issues to be addressed in those reassessments include (a) appropriate ages for retirement; (b) levels, types and nature of retirement and health-care benefits for the elderly; (c) labour-force participation; (d) assessed amounts of contributions from workers and employers to support retirement and health-care benefits for the increasing elderly population; and (e) policies and programmes relating to international migration, in particular replacement migration, and the integration of large numbers of recent migrants and their descendants.