

## V. INTERNATIONAL MIGRATION

International migration is the third of the demographic components that determine the size and structure of a population. By its very nature, international migration links populations across boundaries and thus has impacts beyond any single country. At a time of growing interdependency between countries and regions, international migration has become a central component of worldwide globalization trends. Today, more people are residing outside their country of birth than ever before, and since the underlying causes for such mobility are likely to continue, international migration will remain an important component of both demographic change and future globalization.

### A. MEASURING INTERNATIONAL MIGRATION

Compared to fertility and mortality, migration is a more complex and difficult demographic process to record, model and forecast accurately (Zlotnik, 1987; Plane and Rogerson, 1994). For example, birth and death occur only once in a person's lifetime, but migration can occur repeatedly. Thus, studying its patterns and trends requires a study of its occurrence over time as well as across space (Rogers and Castro, 1986). Since international migration involves the crossing of borders, its definition and measurement depend on the instruments and concepts used in many different national data collection systems.

International migration occurs as people move from a country of origin to a country of destination. Ideally, data on such movement should be recorded in both places, including information on the country of origin in the case of immigration and on the country of destination in the case of emigration. However, detailed data are available for only a few countries. When adequate data are studied, common patterns are often found. For example, as noted by Ravenstein (1885, 1989), migration often occurs in several stages, so the first destination of an emigrant might actually be temporary and not the ultimate destination of the

move. Ravenstein also noted that migration flows often generate counter flows.

In a majority of countries, migration flows are not completely recorded, if they are recorded at all. Migration data from many National Statistical Offices include only the total number of immigrants and emigrants, thereby giving but a hint of the complex web of links a particular country may have with the rest of the world. Monitoring and appraising international migration trends are thus hindered by lack of data; in addition, there are problems related to the quality, comparability and consistency of the data over time and space.

Because of these data limitations, international migration on a global scale can be assessed and discussed only in terms of net migration—the difference between the number of immigrants and emigrants. Many countries, especially in the less developed regions of the world, do not have adequate data even for arrivals and departures, so estimates of net migration must be calculated as a residual for changes in population size between two successive enumerations of the population that are not accounted for by natural increase, that is, the difference between births and deaths.

If more people enter a country than leave it during a specific period of time, net migration is positive and the country is gaining population through migration. When more people leave than enter, net migration is negative and the country is losing population through migration. In this chapter, positive net migration is called net immigration and negative net migration is called net emigration.

It is important to keep in mind that use of data on net migration masks the separate immigration and emigration flows. Thus, in the discussion below, countries with net immigration or net emigration will be identified as overall receiving or sending countries although they are undoubtedly losing or gaining at least some population due to

migration in the opposite direction. At the world level, net migration necessarily adds to zero, meaning that when the countries of the world are divided into two groups of mutually exclusive units, such as the more developed regions and the less developed regions, the net migration flows to one group balance the net migration flows to the other.

The data for the estimates of net migration presented in the *2004 Revision* come from various sources, including national figures on the number of immigrants and emigrants or on estimates of net migration, estimates of international labor migration recorded by countries, refugee stock data prepared by the Office of the United Nations High Commissioner for Refugees and other official sources and estimates of undocumented or irregular migration. (See chapter VII for sources of data and how net international migration is calculated for each country or area)

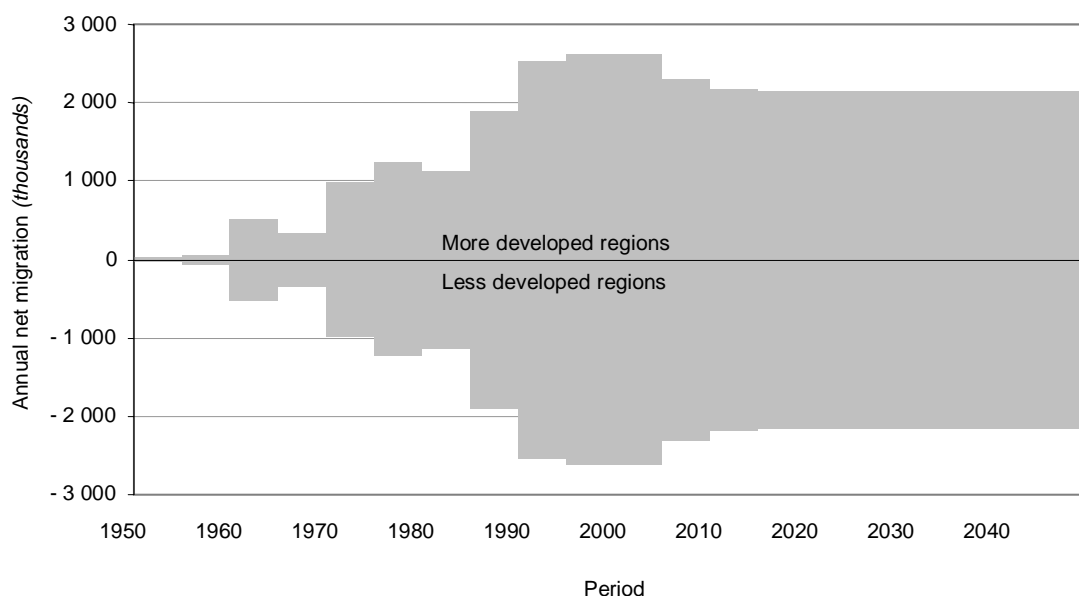
#### B. WORLDWIDE TRENDS IN INTERNATIONAL MIGRATION

In recent decades, the more developed regions have been gaining in population due to positive

net migration, whereas the less developed regions have been losing population due to negative net migration (figure V.1). Net migration numbers have been steadily increasing in the more developed regions and reached an all-time high of 2.6 million annually between 1990 and 2000. For the next 50 years, the average number of net migration being added to the populations in the more developed regions is projected to average about 2.2 million persons annually.

Within the less developed regions, the least developed countries have shown a more irregular pattern of net migration than the other less developed countries. After decades of negative levels, net migration for the least developed countries was slightly positive between 1990 and 2000 and is projected to remain positive in 2000-2010; thereafter net migration is expected to become negative once again (table V.1). Most of the net migration in the least developed countries has involved refugee flows; the positive balances for the 1990s are the result of large refugee repatriation flows that occurred during that decade and are expected to be largely completed by 2010. After 2010, the levels of net migration projected for the least developed countries are projected to be no

**Figure V.1. Annual net international migration flows by development group, estimates and medium variant, 1950-2050**  
(medium variant)



longer affected by repatriations and become consistently negative. Emigration from the least developed countries to more developed regions will dominate the net migration balance of this group of countries in the future.

Northern America and Europe are the two major areas that are currently gaining the most due to net immigration, whereas Africa, Asia and Latin America and the Caribbean are losing population due to net migration (table V.1). For the period 1950-2000, Northern America and Oceania were the only two areas that consistently added population due to international migration. Africa and Latin America and the Caribbean, on the other hand, consistently lost population. In the 1950s and 1960s, Europe had negative net migration, but since then net migration has been positive and is projected to remain so. Asia was just the opposite, with positive net migration in the 1950s and 1960s and subsequently negative net migration, which is expected to continue.

These general patterns mask substantial variation. Within Northern America, which has been adding around 1.3 million people annually to its population since 1990, the United States of America is the primary receiving country—accounting for more than 80 per cent of all the net migration estimated for Northern America since the 1950s. Large-scale immigration to the United States of America developed later in the twentieth century than it did in Western Europe, due to the country's restrictive immigration laws (Castles and Miller, 2003). Amendments to the Immigration and Nationality Act in 1965 following new civil rights legislation removed discriminatory national-origin quotas and led to large-scale non-European immigration, dominated by migrants from Asia and from Latin America and the Caribbean. Canada, the other Northern American country attracting large-scale immigration flows, also saw a change in the number and the national origin of immigrants. In the 1950s and 1960s, immigration to Canada was still mostly from Europe, but changes in immigration law in 1966 led to a greater inflow

of non-Europeans. Immigrants from Jamaica, Portugal, the Philippines, but also Greece and Italy dominated these immigration flows (Castles and Miller, 2003).

Net emigration from Latin America and the Caribbean has been increasing over time (table V.1). Between 1990 and 2000, Latin America lost almost 800,000 people annually due to net migration. The major destinations of migrants from Latin America and the Caribbean are the United States of America and Canada, and, since the 1980s, countries in Southern Europe such as Spain and Italy (Castles and Miller, 2003). The declining economic performance of many countries in Latin America and the Caribbean has been the primary underlying factor for the rise in net emigration. Close traditional social and political ties and bilateral labor recruitment between countries in Latin America and the United States of America, Canada and some European countries, however, have also contributed to the high level of net emigration from Latin America and the Caribbean.

With regard to Africa, it is important to note that most of the international migration occurs within the continent and thus appears in country-level data but not in area data. Important emigration flows to other major areas have included the outflow of workers and their families from Northern Africa to Europe and to the oil-producing countries of Western Asia. During the 1960s and 1970s, negative net migration balances for Africa resulted mainly from repatriation flows of colonial cadres after the independence of some countries and from the outflow of workers from the Maghreb region in Northern Africa to Europe. In the 1980s, the drop in net emigration was due to the effects of lower emigration of workers from the Maghreb to Europe, important repatriation flows from Europe to the countries of the Maghreb, reduced outflows of workers from Northern Africa to the oil-producing countries of Western Asia and the end of large repatriation flows.

TABLE V.1. ANNUAL NET MIGRATION PER DECADE, BY DEVELOPMENT GROUP AND MAJOR AREA, ESTIMATES AND MEDIUM VARIANT, 1950-2050

<i>Development group or major area</i>	<i>1950-1960</i>	<i>1960-1970</i>	<i>1970-1980</i>	<i>1980-1990</i>	<i>1990-2000</i>	<i>2000-2010</i>	<i>2010-2020</i>	<i>2020-2030</i>	<i>2030-2040</i>	<i>2040-2050</i>
<i>Annual net migration (thousands)</i>										
More developed regions .....	5	431	1 104	1 521	2 569	2 462	2 168	2 158	2 158	2 158
Less developed regions.....	-5	-431	-1 104	-1 521	-2 569	-2 462	-2 168	-2 158	-2 158	-2 158
Least developed countries.....	-95	-140	-462	-766	9	81	-247	-270	-270	-270
Other less developed countries.....	90	-291	-642	-755	-2 578	-2 543	-1 920	-1 888	-1 888	-1 888
Africa .....	-116	-220	-293	-244	-269	-410	-308	-322	-322	-322
Asia.....	165	77	-416	-595	-1 434	-1 244	-1 200	-1 204	-1 204	-1 204
Europe.....	-480	-64	304	479	1 139	937	704	699	699	699
Latin America and the Caribbean.....	-58	-288	-388	-649	-798	-740	-592	-567	-567	-567
Northern America .....	403	387	748	924	1 277	1 360	1 305	1 300	1 300	1 300
Oceania .....	85	109	44	84	86	98	92	94	94	94

By the 1990s, increased emigration from a number of countries in sub-Saharan Africa to Europe and to the traditional countries of immigration, such as Australia, Canada and the United States of America, and labor flows directed toward the oil-producing countries in Western Asia contributed to the rise in the net emigration for Africa. In addition, large refugee flows have for a long time originated in and been received by countries in Africa (box V.1).

Before the 1970s, Europe was an area of net emigration. Population dislocations that occurred during and after the Second World War resulted in major resettlement flows. Many refugees and displaced persons returned to their home countries in Europe, but others resettled elsewhere. Preferred destinations were the traditional countries of immigration as well as countries in Latin America and the Caribbean, such as Argentina, Brazil and Venezuela, and Israel and South Africa. Since the 1970s, however, Europe has been an area of net immigration and in 1990-2000 added 1.1 million persons annually to its population through immigration.

Within Europe there were variations in migration patterns. With the economies in Northern and Western Europe recovering from the devastating impact of the Second World War, many countries in these regions became net recipients of migrants from Southern Europe and from colonies or former colonies in Africa and Asia—Algeria in the case of France, and India, Pakistan and the West Indies in the case of the United Kingdom. Foreign labor was recruited to help ease a shortage of workers in an era of full employment. However, because of the 1973 increase in oil prices and the subsequent economic recession, official recruitment of foreign workers ceased in 1973-1974, and several Western European countries adopted measures to foster return migration. Consequently net migration declined during the late 1970s and early 1980s in many Western European countries. Later, newly enacted family reunification policies contributed to maintaining a positive net migration from countries in the less developed regions. By the 1980s, Southern Europe was changing from an origin of international migration to a destination for migration

from countries in less developed regions. Historical ties of countries in Southern Europe to certain countries in less developed regions, the end of major guest-worker programs in Northern and Western Europe and changes in the economic and political landscape of the receiving and sending countries can be listed as the main reasons for the transformation of these countries from emigration to immigration countries.

As some countries in Eastern and Central Europe relaxed their restrictions on emigration, a further flow of international migrants toward Western Europe and Southern Europe occurred. With the political, economic and social disintegration of the Soviet Union and countries in Eastern and Central Europe, net migration directed toward Western Europe and Southern Europe increased further from 1990 to 2000.

Migration flows originating in Asia have traditionally been complex, encompassing very different types of migration. Asian migration to other parts of the world started to increase in the 1960s (Castles and Miller, 2003), and Asia changed from a net recipient to a net supplier of international migrants in the 1970s. Currently Asia is losing about 1.2 million people annually due to net emigration. More relaxed immigration laws in traditional immigration countries, such as the United States of America, Canada and Australia, as well as increased military, economic and political linkages led to higher levels of net emigration to traditional immigration countries.

Lately, rapid economic growth in several Asian countries has led to a redistribution of international migrants within and from Asia. There have been labor flows toward oil-rich countries within Western Asia; labor flows followed by family reunification of Turks migrating to Europe, primarily Germany; and migration from former colonies (primarily India, Pakistan, Indonesia and Vietnam) to the United Kingdom, Netherlands and France. Western Asia with its oil-exporting industries has thus been continuously gaining population due to net immigration since the 1960s, whereas Eastern Asia, South-central Asia and South-eastern Asia have been losing population due to net emigration over the same period. Fili-

#### BOX V.1. REFUGEES WORLDWIDE

At the end of 2004, the United Nations High Commissioner for Refugees (UNHCR) reported an estimated 9.2 million refugees worldwide<sup>1</sup> (UNHCR, 2005). The largest number of refugees originated in Asia (5.2 million persons) and Africa (3.7 million persons). Afghanistan, the source of a total of 2.1 million refugees at the end of 2004, 22.6 per cent of the global refugee population, was by far the largest country of origin for refugees under the care of UNHCR. Afghanistan was followed by Sudan (730,600 persons) and Burundi (485,800 persons), together accounting for more than 13 per cent of all refugees worldwide. Most beneficiaries of UNHCR programmes were hosted by countries in the less developed region; within this region, refugees were heavily concentrated within a small number of countries. In fact, more than 2 million refugees were residing in just two countries, the Islamic Republic of Iran and Pakistan, together accounting for 21.7 per cent of all refugees globally.

pinos, Chinese and Indians have also been migrating to the traditional countries of immigration. As noted, these movements have been facilitated by more relaxed family reunification provisions in the destination countries and by the emergence of global labor markets for highly skilled persons. Asia has now become a major supplier of such labor. In addition, war and civil strife and subsequent repatriation have caused many refugee flows within Asia (box V.1).

Other important migration flows negatively affecting the migration balance for Asia involve emigration from countries with economies in transition, such as Kazakhstan and Kyrgyzstan. Since the breakup of the former Soviet Union there has been repatriation of Russians from the Asian republics to the Russian Federation and other European republics as well as migration of ethnic Germans to Germany.

Oceania, especially Australia and New Zealand, added 86,000 persons annually through net migration over the 1990-2000 period (table V.1). Both countries have provided permanent settlement opportunities for immigrants for many decades. Immigration to these countries has for a long time been shaped by admission policies that favored certain national origins. In the case of Australia, there was for many years a strong preference for British immigrants, with severe restrictions on immigration of non-Europeans. By the 1970s, these laws were replaced by new regulations based on skills and family ties (Inglis, 2004). New Zealand also favored immigration from the United Kingdom for a long time (Castles and Miller, 2003). Moreover, New Zealand had traditionally close ties to its neighbors in the Pacific Ocean,

such as Tonga and Cook Islands, and had relied on unskilled labor from these countries for its agricultural sector and manufacturing industries (Bedford, 2005). Immigration legislation that was enacted in 1987 brought New Zealand in line with other traditional immigration countries, such as Australia and the United States of America, that no longer relied on national origin quotas but employed skill and family-reunification criteria for admission of immigrants. In addition, immigrants intending to invest capital in New Zealand have been especially encouraged to settle in recent years.

Over the next 50 years, current international migration patterns at the level of the major areas are expected to change very little. Africa and Latin America and the Caribbean are projected to remain suppliers of international migrants, whereas Northern America, Europe and Oceania are expected to continue as primary recipients. On balance, Northern America is projected to see its positive net migration remain at 1.3 million persons annually with almost the same, but negative balance, -1.2 million, expected for Asia. Net immigration to Europe is projected to be level at about 700,000 thousand persons annually, Latin America and the Caribbean will have a net emigration balance of about 570,000 persons a year, Africa a net emigration of about 320,000 persons and Oceania a net immigration of somewhat more than 90,000 persons annually.

At the country level, 83 countries gained population from net migration during 1990-2000, including 33 of the 44 more developed countries. Among them were traditional countries of immigration, such as Australia, Canada, New Zealand

and the United States of America; most of the populous countries in Northern, Southern and Western Europe; and the Russian Federation and Japan (table V.2). Over the same period, 50 of the 178 countries in the less developed regions also experienced net immigration. Traditional labor-recruiting countries, such as United Arab Emirates, Singapore and Hong Kong, China SAR, were among this group of countries, as well as countries repatriating refugees, such as Afghanistan, Mozambique and Ethiopia. In contrast, 103 countries, the majority in the less developed regions, had negative net migration in 1990-2000. Some of these countries are among the most populous in the world, such as Mexico, China, India, Pakistan, Philippines and Indonesia.

For the period 2005-2050, the United States of America, Germany, Canada, United Kingdom, Italy and Australia are projected to gain the most due to net migration (table V.3). China, Mexico, India, Philippines, Indonesia and Pakistan are expected to be the major countries of net emigration.

Migration is a volatile process, with flows changing in direction and countries moving from a position of net immigration to one of net emigration. Since 1950, migration changed sign or became zero at least once in 149 out of 191 countries<sup>2</sup> (table V.4). In the remaining 42 countries, net migration was consistently negative or consistently positive. Of these 42 countries, 14 experienced continuous positive net migration since 1950. Among these were the traditional immigration countries and labor-importing countries in Asia, such as Qatar, Brunei Darussalam, Singapore and the United Arab Emirates. For 28 countries, net migration has been consistently negative since 1950; the majority of these countries were in the less developed regions.

Among the group of countries whose net migration had changed direction or became zero at least once between 1950 and 2005 are several that since 1985 experienced continuous positive net migration. Many of these are countries that were formerly countries sending labor migrants to Western and Northern Europe, such as Greece, Italy and Spain, but that more recently have become receiv-

ing countries. Also in this group are those that have experienced the repatriation of ethnic groups, such as Japanese returning from Latin America and Asia to Japan and ethnic Russians returning from other member States of the Commonwealth of Independent States (CIS) to the Russian Federation.

### C. CONTRIBUTION OF INTERNATIONAL MIGRATION TO POPULATION CHANGE

Change in the size of a population between any two points in time equals the sum of natural increase (births minus deaths) and net migration (immigrants minus emigrants). By calculating natural increase and net migration for each development group and major area, one can identify the contribution of each component to the population growth or decline of the areas.

Migration affects population change directly by the sheer number of immigrants and emigrants. Migration also affects population change indirectly, by the impact of migration on mortality and fertility in the countries of origin and destination (National Research Council, 2000). For example, immigrants will bear children and they will die in their new country, perhaps at different rates than the native-born. Fertility in the country of origin might be affected negatively due to the departure of young adults, while remittances and the transmission of ideas and practices back to the country of origin might affect mortality. The spread of diseases such as HIV/AIDS can also be linked to people migrating. The following paragraphs will focus on the direct impact of net migration on population growth. For a discussion of the indirect effects, see National Research Council, 2000.

Net international migration numbers have been and are expected to remain substantial in all major areas (table V.1). However, when net migration rates are calculated, relating migration numbers to the size of the affected populations, their values are generally low. For most development groups and major areas of the world, the effect of international migration on overall population growth is minor compared to that of natural increase.

TABLE V.2. COUNTRIES AND AREAS WITH THE HIGHEST AND THE LOWEST LEVELS OF NET MIGRATION, ESTIMATES AND MEDIUM VARIANT,  
1950-1960, 1990-2000, 2000-2010 AND 2040-2050

Rank	Country or area	1950-1960	Rank	Country or area	1990-2000	Rank	Country or area	2000-2010	Rank	Country or area	2040-2050
<i>A. Countries with net immigration (in thousands)</i>											
1	United States of America	2 908	1	United States of America	11 400	1	United States of America	11 550	1	United States of America	11 000
2	Kazakhstan	1 640	2	Russian Federation	4 158	2	Afghanistan	3 034	2	Canada	2 000
3	Canada	1 120	3	Germany	3 822	3	Spain	2 625	3	Germany	2 000
4	Germany	996	4	Canada	1 375	4	Germany	2 200	4	United Kingdom	1 300
5	France	955	5	Spain	1 176	5	Canada	2 050	5	Italy	1 200
6	Australia	793	6	Italy	1 173	6	United Kingdom	1 336	6	Australia	1 000
7	Brazil	549	7	United Kingdom	955	7	Italy	1 200	7	Hong Kong, China SAR	600
8	Republic of Korea	539	8	Australia	900	8	United Arab Emirates	1 160	8	France	600
9	Israel	454	9	Greece	770	9	Australia	1 000	9	Spain	600
10	Argentina	450	10	France	643	10	Russian Federation	650	10	Japan	540
<i>B. Countries with net emigration (in thousands)</i>											
1	Russian Federation	-1 328	1	Mexico	-3 800	1	Mexico	-3 800	1	China	-3 200
2	Italy	-1 010	2	China	-3 231	2	China	-3 700	2	Mexico	-2 800
3	Dem. People's Rep. of Korea	-891	3	Kazakhstan	-2 830	3	Pakistan	-2 740	3	India	-2 400
4	Spain	-777	4	India	-2 807	4	India	-2 650	4	Philippines	-1 800
5	Algeria	-722	5	Pakistan	-2 651	5	Iran (Islamic Republic of)	-1 979	5	Indonesia	-1 600
6	China	-713	6	Iran (Islamic Republic of)	-1 968	6	Indonesia	-1 900	6	Pakistan	-1 500
7	Portugal	-631	7	Philippines	-1 800	7	Philippines	-1 800	7	Ukraine	-1 000
8	Belarus	-564	8	Indonesia	-1 625	8	Ukraine	-1 200	8	Egypt	-800
9	United Kingdom	-540	9	Somalia	-1 298	9	Kazakhstan	-1 000	9	Bangladesh	-600
10	Puerto Rico	-470	10	Egypt	-1 100	10	Egypt	-850	10	Kazakhstan	-600

TABLE V.3. TOP SIX NET IMMIGRATION COUNTRIES OR AREAS AND TOP SIX NET EMIGRATION COUNTRIES OR AREAS, MEDIUM VARIANT, 2005-2050

<i>Rank</i>	<i>Country or area</i>	<i>Annual net migration (thousands)</i>
<i>A. Net immigration countries or areas</i>		
1	United States of America .....	1 107
2	Germany .....	202
3	Canada .....	200
4	United Kingdom .....	130
5	Italy .....	120
6	Australia .....	100
<i>B. Net emigration countries or areas</i>		
1	China .....	-327
2	Mexico .....	-293
3	India .....	-241
4	Philippines .....	-180
5	Indonesia .....	-164
6	Pakistan .....	-154

TABLE V.4. NUMBER OF COUNTRIES OR AREAS, BY NET MIGRATION STATUS AND BY MAJOR AREA, 1950-2005

<i>Major area</i>	<i>Number of countries or areas</i>			
	<i>Net immigration</i>	<i>Net emigration</i>	<i>Recent net immigration</i>	<i>Other</i>
World .....	14	28	26	123
Africa .....	—	5	4	45
Asia .....	5	5	4	35
Europe .....	4	3	15	17
Latin America and the Caribbean ....	2	14	1	18
Northern America .....	2	—	—	—
Oceania .....	1	1	2	8

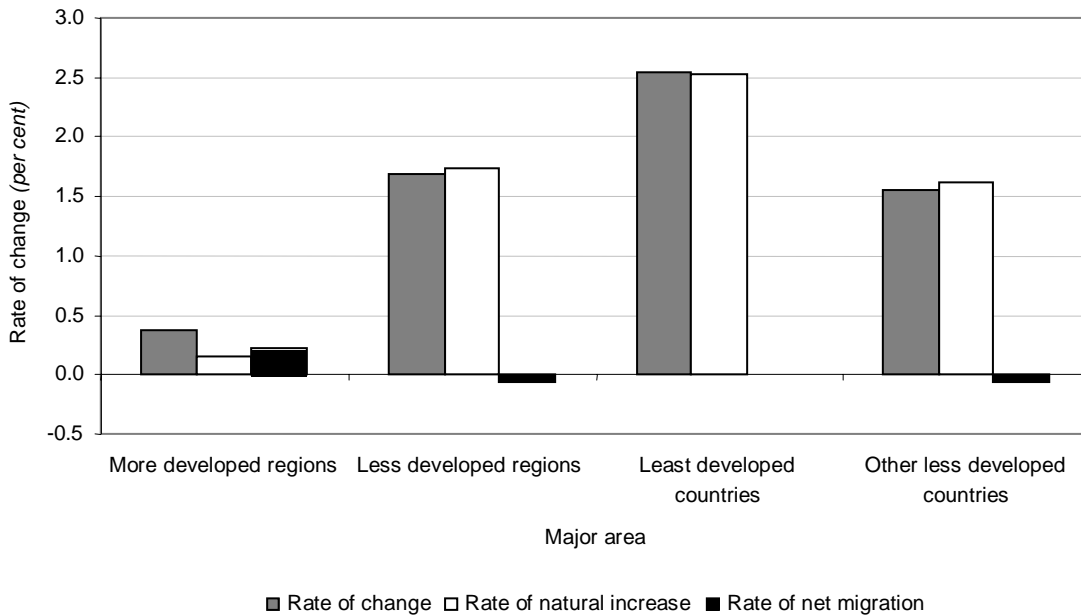
NOTE: Net immigration: countries that consistently showed positive net migration during the period; net emigration: countries that consistently showed negative net migration; recent net immigration: countries that showed consistently positive net migration over the period 1985-2005 but that had negative or zero net migration at least once before 1985; other: countries whose net migration had changed sign or had been zero at least once since 1950.

Fifty years ago, the impact of net migration on overall population growth was negligible nearly everywhere. Subsequently, in the more developed regions, net migration became more important, and by 1990-2000 it was the driving force behind population growth (figure V.2). Until 2040, although the rate of natural increase in the more developed regions becomes negative, the positive

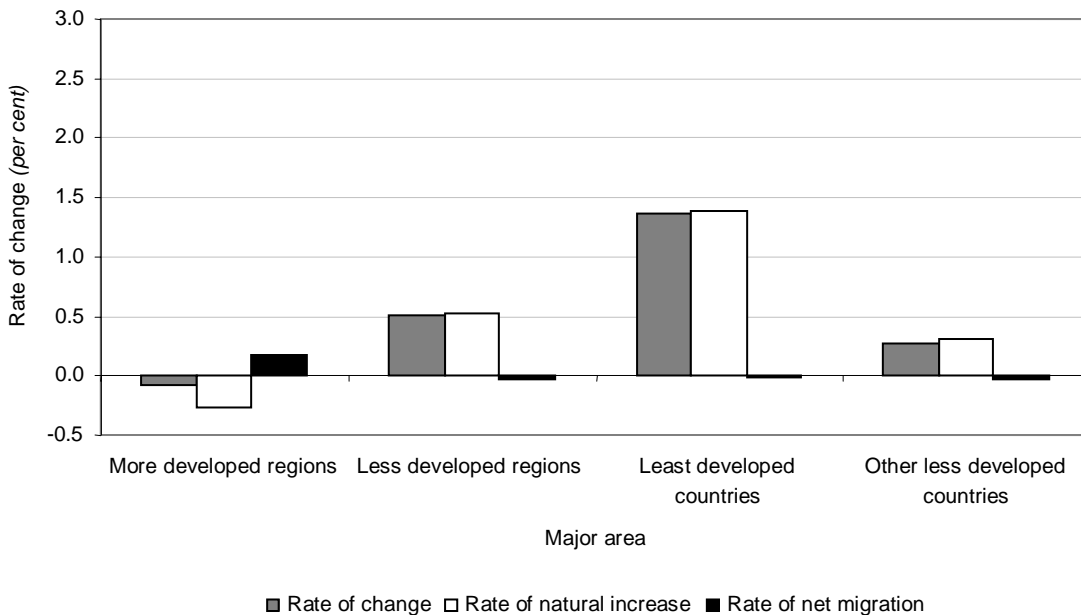
contribution of net migration is projected to prevent the population from declining. Beyond 2040, however, the projected levels of net migration will not counterbalance the excess of deaths over births (figure V.3).

The effect of net migration in the less developed regions was relatively small in the 1990-2000

**Figure V.2. Average annual rates of population change, natural increase and net migration, by development group, 1990-2000**



**Figure V.3. Average annual rates of population change, natural increase and net migration, by development group, medium variant, 2040-2050**



decade. Projected population growth in these regions in the coming decades will still be dominated by natural increase, although both growth and natural increase will be lower than in earlier

periods. Net migration rates for the less developed regions are expected to be small and negative, thus slightly slowing population growth from natural increase.

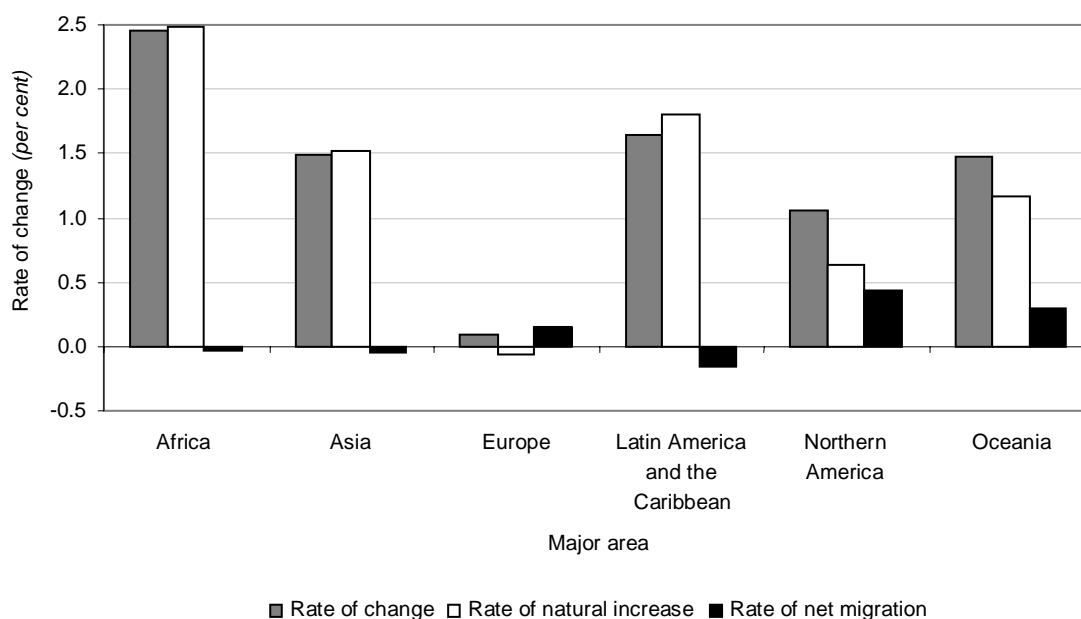
These overall trends for more and less developed regions are the result of different trends at the level of the major areas (figures V.4 and V.5). In both Northern America and Oceania, net international migration has played a positive and at times important role in increasing population growth over the last 50 years. Overall, this trend is expected to continue in the future. By 2020-2030, the net migration rate in Northern America will, for the first time, be higher than the rate of natural increase. From then on, net immigration will be driving the growth in Northern America. In Europe, it was net immigration that kept population growth weakly positive since 1990-2000. By 2010-2020, the rate of population change will, however, turn negative. Despite continued positive net migration rates, the negative rate of natural increase will become the more dominant force in population change, leading to negative growth in Europe. In Africa, Asia, and Latin America and the Caribbean, negative net migration rates are more than offset by positive rates of natural increase, which will remain the

major factor behind population growth in these major areas.

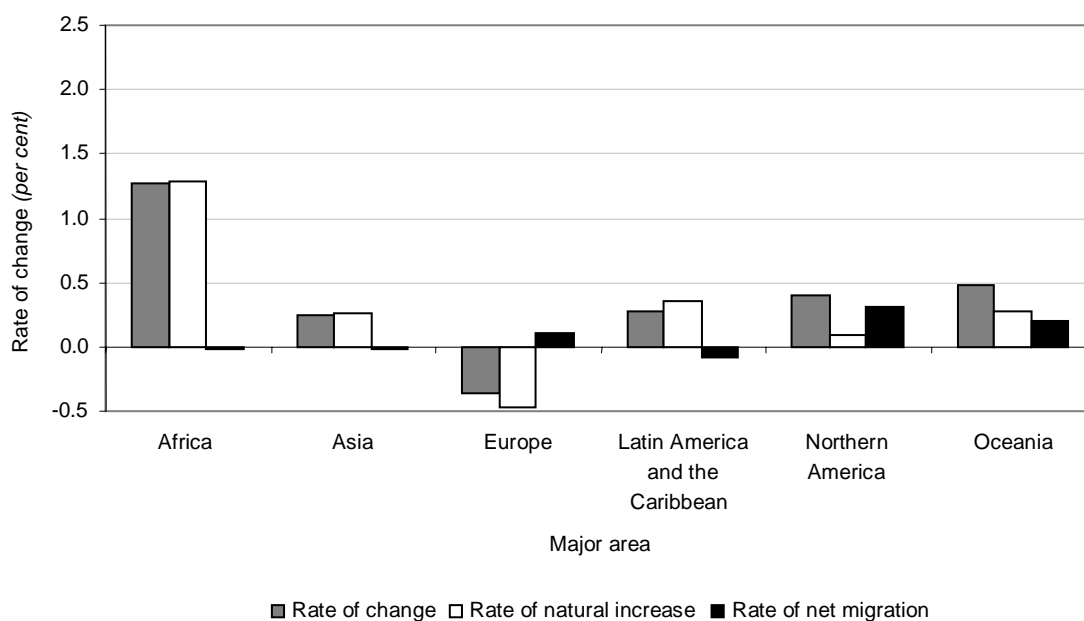
At the country level, the contribution of international migration to population growth varies considerably. For the majority of countries, levels of net migration have been low in the past and are expected to remain low in the future. However, in some countries in the more developed regions with low fertility and mortality levels, population change will depend more and more on net international migration.

Over the period 1990-2000, the population increased in 173 countries (table V.5). For 16 of these countries, 13 in Europe and 3 in Asia, net immigration was the primary source of this growth. In 62 countries, natural increase drove population growth, although net immigration was positive. In the remaining 89 countries, population grew entirely due to natural increase and was slowed by net emigration. In 6 countries, net migration was zero.

**Figure V.4. Average annual rates of population change, natural increase and net migration, by major area, 1990-2000**



**Figure V.5. Average annual rates of population change, natural increase and net migration, by major area, medium variant, 2040-2050**



**TABLE V.5. NATURAL INCREASE AND NET MIGRATION AS SOURCES OF POPULATION GROWTH OR DECLINE, BY MAJOR AREA, 1990-2000**

Major area	Population growth primarily due to			Population decline primarily due to		
	natural increase	net migration	Total	natural increase	net migration	Total
World .....	157	16	173	7	12	19
Africa .....	54	—	54	—	—	—
Asia .....	43	3	46	—	4	4
Europe .....	12	13	25	7	7	14
Latin America and the Caribbean...	34	—	34	—	1	1
Northern America.....	2	—	2	—	—	—
Oceania.....	12	—	12	—	—	—

During the same period, 19 countries experienced population decline. For 12 of these countries, net emigration was the primary factor causing the decrease in population. For 7 countries—Belarus, Bulgaria, Croatia, Czech Republic, Hungary, Russian Federation and Ukraine—population declined due to an excess of deaths over birth.

Another way of assessing the impact of international migration on future population growth or decline is by comparing the results of the me-

dium-variant projection for 2005-2050 with those obtained by projecting the population with zero international migration—the zero migration scenario (table V.6). As could be expected, compared to the medium variant, the zero-migration scenario produces a smaller population for the more developed regions and a larger population for the less developed regions<sup>3</sup>. However, the magnitude of the differences in relative terms is revealing. In the more developed regions, a zero migration scenario during 2005-2050 would result in a population that was smaller than the medium variant by

TABLE V.6. PROJECTED POPULATION, BY DEVELOPMENT GROUP AND MAJOR AREA, MEDIUM VARIANT AND ZERO-MIGRATION SCENARIO, 2050

<i>Development group or major area</i>	<i>Population in 2050 (millions)</i>		<i>Difference (zero-migration scenario minus medium variant)</i>	<i>Difference as percentage of medium variant</i>
	<i>Medium variant</i>	<i>Zero-migration scenario</i>		
World.....	9 076	9 065	-10	-0.1
More developed regions.....	1 236	1 097	-139	-11.2
Less developed regions.....	7 840	7 968	128	1.6
Least developed countries.....	1 735	1 749	13	0.8
Other less developed countries.....	6 104	6 220	115	1.9
Africa.....	1 937	1 959	22	1.1
Asia.....	5 217	5 283	65	1.3
Europe.....	653	610	-43	-6.7
Latin America and the Caribbean.....	783	820	37	4.7
Northern America.....	438	353	-85	-19.5
Oceania.....	48	42	-6	-12.2

11.2 per cent, whereas in the less developed regions it would have resulted in a population 1.6 per cent larger. This comparison confirms the importance of international migration for population growth in the more developed regions.

At the level of the major areas, the largest percentage differences between the 2050 population with the medium variant and the zero-migration scenario are found for Northern America and Oceania. Without any international migration, the projected population of Northern America in 2050 would be 19.5 per cent smaller than with the medium variant; for Oceania the population would be 12.2 per cent smaller. The potential reduction of the population of Europe is more modest, just 6.7 per cent, the result of lower levels of international migration projected for that area than for Northern America. The impact of international migration is considerably lower in all the other regions. The 2050 population of Latin America and the Caribbean is 4.7 per cent higher when projected without emigration, that of Asia 1.3 per cent higher and that of Africa 1.1 per cent above that produced by the medium variant.

Comparisons between the medium-variant projection and the zero migration scenario can also be made for individual countries (table V.7). Many countries for which emigration is responsible for substantially smaller populations under the me-

dium variant (in percentage terms) in 2050, have small populations (panel A). By 2050 the most populous country in this group is Mexico, whose projected medium-variant population of 139.0 million would have been 13.5 per cent higher with zero migration. The second largest country is the Ukraine, where a medium-variant 2050 population of 26.4 million would be 17.3 per cent higher under the zero-migration scenario.

Many of the countries whose populations show at least 10 per cent larger populations in 2050 because of international migration also have small populations (panel B). The largest country in the group is the United States of America, whose medium-variant population in 2050, at 395.0 million, would be 18.5 per cent lower in the absence of net immigration. Germany, with 78.8 million inhabitants projected in 2050 under the medium variant, would have 16.7 per cent fewer inhabitants under the zero-migration scenario (box V.2). For Australia and Canada the reductions would be 22.7 per cent and 28.2 per cent, respectively.

Because of its age selectivity (Rogers and Castro, 1986; Rogers and Little, 1993; Rogers, Castro and Lea, 2005), migration has impacts not only on total population size but also on the age and sex composition of a population. Assessing the impact of migration on the future age structure is important in order to obtain a better understanding of

TABLE V.7. PROJECTED POPULATION FOR COUNTRIES AND AREAS WITH THE LARGEST PERCENTAGE DIFFERENCE BETWEEN THE MEDIUM VARIANT AND THE ZERO-MIGRATION SCENARIO, 2050

Rank	Country or area	Population in 2050 (thousands)		Difference (zero-migration scenario minus medium variant)	Difference as percentage of medium variant*
		Medium variant	Zero- migration scenario		
<i>A. Countries and areas with greater projected growth under zero-migration scenario</i>					
1	Jamaica .....	2 586	3 753	1 167	+45.1
2	Georgia .....	2 985	3 887	902	+30.2
3	Kazakhstan.....	13 086	16 321	3 235	+24.7
4	Albania .....	3 458	4 124	666	+19.3
5	Lesotho .....	1 601	1 907	306	+19.1
6	Trinidad and Tobago.....	1 230	1 451	221	+18.0
7	Armenia .....	2 506	2 953	447	+17.8
8	Ukraine .....	26 393	30 960	4 567	+17.3
9	Cuba .....	9 749	11 273	1 524	+15.6
10	Mexico.....	139 015	157 831	18 817	+13.5
11	Kyrgyzstan .....	6 664	7 536	873	+13.1
12	Tajikistan .....	10 423	11 705	1 282	+12.3
13	Dominican Republic .....	12 668	14 191	1 523	+12.0
14	Guatemala.....	25 612	28 184	2 572	+10.0
<i>B. Countries and areas with less projected growth under zero-migration scenario</i>					
1	Hong Kong, China SAR.....	9 235	5 858	-3 376	-36.6
2	United Arab Emirates .....	9 056	6 100	-2 957	-32.6
3	Kuwait .....	5 279	3 674	-1 605	-30.4
4	Canada.....	42 844	30 772	-12 072	-28.2
5	Cyprus.....	1 174	872	-303	-25.8
6	Qatar .....	1 330	1 026	-304	-22.9
7	Australia.....	27 940	21 607	-6 333	-22.7
8	Singapore .....	5 213	4 056	-1 157	-22.2
9	Bahrain .....	1 155	938	-217	-18.8
10	Greece.....	10 742	8 738	-2 003	-18.7
11	United States of America .....	394 976	321 766	-73 211	-18.5
12	Ireland.....	5 762	4 735	-1 027	-17.8
13	Germany .....	78 765	65 589	-13 176	-16.7
14	United Kingdom.....	67 143	57 367	-9 776	-14.6
15	Portugal.....	10 723	9 195	-1 528	-14.2
16	Norway .....	5 435	4 692	-743	-13.7
17	Austria .....	8 073	6 982	-1 091	-13.5
18	Sweden .....	10 054	8 704	-1 350	-13.4
19	Denmark .....	5 851	5 078	-774	-13.2
20	Switzerland .....	7 252	6 387	-866	-11.9
21	Netherlands .....	17 139	15 270	-1 870	-10.9

NOTE: Only countries and areas with a population of more than 1 million inhabitants in 2050 and with absolute differences of at least 10 per cent are included. Countries and areas ranked by difference as percentage of medium variant.

\* Increase (+) or decrease (-) in population if there were no net international migration.

BOX V.2. CAN IMMIGRATION OFFSET POPULATION DECLINE?  
THE CASES OF ITALY AND GERMANY

Over the next 45 years, the medium-variant projection shows that Italy and Germany will experience the largest population declines among countries of Western Europe. Fertility in these two countries is projected to remain below replacement level until at least the end of the projection period. There will be an assumed annual net immigration of 120,000 persons to Italy and of 202,000 persons to Germany, but this will not be sufficient to balance the excess of deaths over births. Calculations assuming labor-dominated migration flows show that Italy would have to increase its annual net immigration to about 220,000 persons annually and Germany to about 307,000 persons annually in order to keep the populations of the two countries constant at the 2005 level. From the viewpoint of economic sustainability, however, maintaining changes in the age structure is probably more crucial than maintaining total population size. Maintaining constant age structures in these two countries over the next 45 years would require even higher net immigration levels (United Nations, 2001). It appears that sustained net immigration can play a role in mitigating the effects of population decline and population ageing, but it will not necessarily reverse demographic trends that have led to these demographic developments.

the economic sustainability of future populations. In this regard, the dependency ratio—the ratio of the dependent age population (the young and the old) to the working-age population—is a useful indicator measuring the potential social and economic impact of different age structures (see chapter II). The higher this ratio, the more people each potential worker needs to support.

According to the medium variant, the dependency ratio is projected to increase in the developed regions over the next 50 years despite international migration (table II.1). However, in some countries, international migration is projected to reduce dependency ratios. This is shown by comparing the projected dependency ratios calculated under the medium variant with the corresponding results from the zero-migration scenario (table V.8). International migration reduces the dependency ratios in labor-recruiting countries, such as the oil-exporting countries in Western Asia. Countries of immigration in Northern America, Oceania and Europe, such as the United States of America, Australia, Germany, United Kingdom and Spain, also have lower dependency ratios when migration is set to zero. The changes in the dependency ratios are fairly modest, however, for countries in which the ageing process of the population is more advanced. Thus, international migration can play a role in modifying population decline or reductions of the working-age popula-

tion, but it cannot reverse the trend of population ageing.

As the previous analysis has shown, net migration levels have increased since 1950, with the more developed regions consistently gaining population and less developed regions losing population. Northern America and Europe are the two major areas that are currently gaining the most, while Africa, Asia and Latin America and the Caribbean are experiencing net emigration. These overall trends are expected to continue in the foreseeable future. Given the decline in fertility rates in the more developed regions, net migration has become a more prominent force behind continued population growth in these areas, whereas natural increase is still determining population increase in less developed regions. Given the age selectivity of migration, international migration can have a modifying influence on population ageing, but it cannot reverse long-established trends in population decline or population ageing.

International migration has become a global phenomenon, with more people living outside their country of birth today than at any other point in history. Since the forces underlying international migration flows, such as economic and social inequalities, improved transportation and closer network ties between countries and communities are very unlikely to reverse in the near

TABLE V.8. COUNTRIES AND AREAS WITH GREATEST INCREASE IN DEPENDENCY RATIO UNDER ZERO-MIGRATION SCENARIO, 2050

Rank	Country or area	Population in 2005 (thousands)	Dependency ratio in 2005	Dependency ratio in 2050		Increase (zero-migration scenario minus medium variant)
				Medium variant	Zero- migration scenario	
1	United Arab Emirates .....	4 496	30	48	87	39
2	Hong Kong, China SAR.....	7 041	36	81	110	30
3	Qatar.....	813	30	55	74	19
4	Kuwait .....	2 687	35	57	75	19
5	Bahrain .....	727	43	51	63	12
6	Canada .....	32 268	44	71	82	12
7	Greece.....	11 120	48	78	89	11
8	Germany .....	82 689	49	76	86	9
9	Switzerland .....	7 252	48	76	85	9
10	Austria .....	8 189	48	79	88	8
11	Cyprus .....	835	47	63	72	8
12	Australia.....	20 155	48	67	74	8
13	Spain.....	43 064	45	94	100	6
14	United Kingdom.....	59 668	51	66	72	6
15	United States of America .....	298 213	49	61	67	6

NOTE: Ranked by difference between zero-migration scenario and medium variant dependency ratios.

future, current migration patterns are expected to change very little over the next 50 years. Thus, international migration will continue to be an important demographic as well as social, economic and political process impacting countries all over the world and continuing to be a matter of intense policy debate.

#### NOTES

<sup>1</sup> Persons recognized as refugees under the 1951 UN Convention/1967 Protocol, the 1969 OAU Convention, in accordance with the UNHCR Statute, persons granted a humanitarian status and those granted temporary protection (UNHCR, 2005). Other persons of concern to UNHCR brought the total to more than 191 million persons; the great bulk of these, however, were internally displaced persons (IDPs) and re-

turned refugees, who are not classified as international migrants.

<sup>2</sup> One country (Democratic People's Republic of Korea) was classified as essentially closed to migration and was excluded from the analysis.

<sup>3</sup> It is interesting to note that by 2050 the medium variant projection results in a slightly larger total world population than does the zero migration scenario. When net international migration is from less developed regions to more developed regions, a larger proportion of the world's total population ends up living in regions of relatively low fertility and relatively low mortality, and a smaller proportion of the world's total population ends up living in regions of relatively high fertility and relatively high mortality. As a result, with net migration to the more developed regions, fewer babies are born but even more deaths do not occur than would have been the case with no migration. Thus, the world population in 2050 is slightly larger than it would be with no migration.