I. THE TRANSITION TO LOW FERTILITY AND ITS IMPLICATIONS FOR THE FUTURE

The *2000 Revision* takes account of the fact that the fertility transition, the long-term decline of fertility from a high average number of children per woman (of the order of 6 to 8 children per woman) to a level ensuring the replacement of generations (of the order of 2.1 children per woman when mortality is low), has become a virtually universal process. Until recently, only sub-Saharan Africa was lagging behind in the path towards the fertility transition. However, data for a number of countries in Africa south of the Sahara referring to the 1990s indicate that fertility has begun to decline in that region and that the transition has been gaining momentum. Taking a stable or increasing total fertility greater than 5 children per woman as an indicator of the pre-transitional stage of fertility decline, just 15 countries out of the 46 in sub-Saharan Africa had shown no signs of a fertility reduction by 2000. In contrast, 21 countries had already entered the first phase of the fertility transition and had experienced reductions in total fertility amounting on average to a reduction in total fertility of 0.75 children per decade. Nevertheless, by 2000, about 64 per cent of the population of Africa was still living in countries with a total fertility surpassing 5 children per woman.

In other major areas of the world, the fertility transition is more advanced. In Asia, only one country, Yemen, has yet to show signs of a significant fertility decline. By 2000, just 6.8 per cent of the population of Asia was living in countries with a total fertility of more than 5 children per woman, and the most populous countries in the continent had, for the most part, attained low to moderate fertility levels. In Oceania, only the Solomon Islands could be considered to be still in the incipient stage of the transition to low fertility and they accounted for a low 1.5 per cent of the total population of the area in 2000.

At the world level, 12.5 per cent of the population lived in the 48 countries or areas in which fertility levels were still above 5 children per woman in 2000, including the 3 per cent living in countries that have yet to show unambiguous signs of embarking on the fertility transition. Given the experience of the rest of the world and the fact that fertility had already dropped significantly in 32 of those 48 countries by 2000, it is expected that the fertility transition will proceed in all of them over the course of the next 50 years. Consistent with this expectation, all projection variants included in the *2000 Revision* (except the constant-fertility scenario) assume a steady decline in the fertility of the high-fertility countries of today so as to reach by 2050 levels comparable to those characteristic of today's low-fertility developing countries. It is important, however, to note that a number of countries where fertility remains high are not expected to see their fertility levels drop to replacement level by 2050. Even under the low-fertility assumption underlying the low variant, 12 of these countries are projected to have a total fertility higher than 2.1 children per woman in 2045-2050. Under the medium-variant, 16 countries have total fertility levels above replacement by the end of the projection period and, as a result, their population rises from 269 million in 2000 to about one billion in 2050.

Not only have most countries advanced in the transition to low fertility over the course of the twentieth century but, in addition, most of those where the transition started very early had seen their fertility levels drop and remain below replacement for prolonged periods. Recently, even some developing countries where the transition started much later have also experienced below-replacement fertility levels. As a result of these trends, the number of countries with below-replacement fertility is large and increasing: 60 countries were in that group in 1995-2000 of which, 43 were located in the more developed regions and 17 in the less developed regions. Owing to the fact that China belongs to that group, the number of people living in countries with below-replacement fertility stood at 2.6 billion in 2000, equivalent to 42.6 per cent of the world

population. The persistence of very low levels of fertility is illustrated by the fact that in 20 European countries such levels have prevailed since at least 1975-1980, and by 1995-2000 fertility had plummeted below 1.5 children per woman in 21 European countries as well as in Armenia, Hong Kong and Macao (Special Administrative Regions of China), and Japan.

Despite the importance of the group of countries experiencing below-replacement fertility and that of countries that have just started to show signs of an incipient reduction of fertility, one must underscore that the majority of the developing countries are in the midst of the fertility transition, with total fertility levels ranging from just over 2.1 children per woman to under 5 children per woman in 1995-2000. The 75 countries with such fertility levels had 2.6 billion inhabitants in 2000 and accounted for over 45 per cent of the world population. Fertility levels varied considerably among the countries in this group. In 21 of them, most with relatively small populations that amounted in total to 177 million people in 2000, total fertility is still moderately high, varying from 4 children per woman to 5 children per woman in 1995-2000. They are followed by 22 countries with a combined population of 1.6 billion people in 2000 whose total fertility ranged from 3 children per woman to 4 children per woman in 1995-2000. This group includes some fairly populous countries, such as India, Bangladesh or the Philippines. An additional 32 countries are at a more advanced stage of the fertility transition, with a total fertility ranging from just over 2.1 children per woman to just under 3 children per woman in 1995-2000. They accounted for 852 million persons in 2000, including Brazil in Latin America and Indonesia in Asia as the most populous countries in the group. Many of the countries with intermediate fertility levels in 1995-2000 have experienced marked fertility declines since they embarked on the fertility transition. In the group that had attained a total fertility ranging between 3 and 4 children per woman in 1995-2000, for instance, the reduction of fertility averaged 1.06 children per decade. Average reductions were lower among the countries whose fertility had attained a level ranging from 4 to 5 children per woman—a decline of 0.75 children per decade—and they amounted to 1.01 children per decade for those countries whose fertility levels were below 3 children per woman but still above replacement level in1995-2000. These trends validate the assumption that the populations of countries that are still at the intermediate stages of the fertility transition (with total fertility levels below 5 children per woman) will very likely achieve replacement level fertility over the course of the first half of the twenty-first century. In fact, in the medium variant of the *2000 Revision*, the average pace of fertility decline projected for the countries in the groups described in this paragraph is generally lower than that estimated for the past, suggesting that the attainment of the fertility levels projected in the medium variant is well within the reach of most countries that are today experiencing moderate fertility levels.

This chapter will review fertility trends among the countries of the world from the perspective of the fertility transition and will discuss their implications for the future course of fertility according to the different projection variants in the *2000 Revision* of the official United Nations population estimates and projections.

A. Comparing the fertility transition in different groups of countries

The fertility transition started early in most countries that are today considered developed and that are located in the more developed regions, encompassing Australia/New Zealand, the whole of Europe (including the Russian Federation), Japan and Northern America. Although for a few of those countries reductions in fertility began as early as the late eighteenth or the early nineteenth century, they accelerated during the last quarter of the nineteenth century so that, by the first quarter of the twentieth century most of them were already experiencing relatively low fertility levels. Indeed, during the 1930s, very low fertility prevailed in many European countries and in those of Northern America. The Second World War contributed to keep fertility low during the early 1940s, but its end brought about considerable increases in fertility levels that were maintained in some countries until the late 1950s and early 1960s. Consequently, during 1950-1955, most developed countries were experiencing fertility levels well above replacement: 31 of the

44 countries in more developed regions had a total fertility of at least 2.5 children per woman. By 1955-1960, only Estonia, Japan and Latvia had a total fertility at or below replacement level and in 15 developed countries fertility was above 3 children per woman. One of them, Albania, had a total fertility close to 6 children per woman.

The situation was very different in countries within the less developed regions. In the early 1950s, a majority of them (97 out of 143) had a total fertility of at least 6 children per woman and only three had a total fertility below 3.2 children per woman (Argentina, Georgia and Uruguay). However, in the course of the second half of the twentieth century, most of the countries in the less developed regions would embark on the fertility transition, although starting at different times and experiencing varying speeds of fertility decline. For most developing countries, fertility began to decline after a long period of either stagnant or rising fertility levels.

In order to analyse the dynamics of the transition to lower fertility, it is useful to consider the situation of countries in 1995-2000, the most recent period for which estimates are available. Countries can be grouped according to the level of fertility that they had reached by that period. Five categories can be distinguished: countries with a total fertility above 5 children per woman; countries with a total fertility ranging from just over 4 children per woman to 5 children per woman; countries with total fertility between 3 and 4 children per woman; countries with total fertility above replacement level (2.1 children per woman) but no greater than 3 children per woman; and, lastly, countries with a total fertility at or below replacement level. In the first category, a further distinction can be made between countries whose total fertility has shown no signs or very weak signs of declining and those where a substantial reduction has already taken place. The first group will be identified as the one where no transition has occurred as yet. Similarly, among the countries that had reached fertility levels at or below replacement by 1995-2000, a useful distinction can be made by considering separately those belonging to less developed regions that began the fertility transition after 1950 and those that belong to the more developed regions and therefore started the transition at a much earlier date. A similar distinction is useful among developing countries with moderate to low fertility levels. Two countries belonging to the less developed regions, Argentina and Uruguay, also experienced an early transition to low fertility but had not reached levels at or below replacement by 1995-2000. This group is characterized as having an "early transition" but with a total fertility that was still between 2.1 and 3.0 children per woman in 1995-2000.

The different categories described above produce disjoint sets of countries that permit a characterization of the current state of the fertility transition by major area. Table I.1 shows the distribution of countries or areas of the world by category and by major area. It also displays the corresponding distribution of the population. It is clear that the major areas of the developing world (Africa, Asia, Latin America and the Caribbean, and Oceania) are at different stages of the transition. Africa and Asia are the only two major areas with countries where the transition has not started; a total of 16 countries, including 15 in Africa and one in Asia are in the "no transition" category. They have a total population of 182 million persons, amounting to 3.0 per cent of the world population. In Asia, the only country where the transition has not started as yet, Yemen, accounts for only 0.5 per cent of the population of that major area, whereas those in Africa represent a fifth of the population of that continent.

The countries where the fertility transition is incipient (their fertility is still above 5 children per woman) are also largely concentrated in Africa and Asia, although one of them is in Oceania. As a whole, these countries account for 9.5 per cent of the world population and have about 576 million inhabitants. However, as in the case of the no-transition countries, their weight is considerable in Africa, where they account for 43.2 per cent of the population in the continent. About 6 per cent of the population in Asia resides in countries with an incipient fertility decline, corresponding to about 233 million people. In Oceania, only the Solomon Islands with a total fertility of 5.6 children per woman in 1995-2000 belong to this group of

TABLE I.1. STAGES OF THE TRANSITION TO LOW FERTILITY IN THE MAJOR AREAS OF THE WORLD BY 2000

Major area and region	*No transition*	*Decline but TF still > 5*	*Decline to 4< TF <= 5*	*Decline to 3 < TF <= 4*	*Decline to 2.1 < TF <= 3*	*Decline to TF <= 2.1*	*Early transition, with 2.1<TF<3*	*Early transition with "baby boom", TF < 2.1*	*Total*
					Number of countries				
Africa	15	21	8	6	2	1	0	0	53
Asia	1	10	3	11	11	12	0	2	50
Europe	0	0	0	0	1	3	0	35	39
Latin America and the Caribbean	0	0	7	3	14	7	2	0	33
Northern America	0	0	0	0	0	0	0	2	2
Oceania	0	1	3	2	2	0	0	2	10
World	16	32	21	22	30	23	2	41	187
					Population (in thousands)				
Africa	164 099	342 433	98 449	177 080	10 180	1 161	0	0	793 403
Asia	18 349	232 801	28 693	1 392 512	401 651	1 465 978	0	132 358	3 672 342
Europe	0	0	0	0	3 134	6 401	0	717 441	726 976
Latin America and the Caribbean	0	0	45 006	19 150	395 884	17 702	40 369	0	518 111
Northern America	0	0	0	0	0	0	0	313 987	313 987
Oceania	0	447	5 165	969	449	0	0	22 916	29 945
World	182 448	575 682	177 313	1 589 711	811 297	1 491 242	40 369	1 186 702	6 054 764
					Percentage				
Africa	20.7	43.2	12.4	22.3	1.3	0.1	0.0	0.0	100.0
Asia	0.5	6.3	0.8	37.9	10.9	39.9	0.0	3.6	100.0
Europe	0.0	0.0	0.0	0.0	0.4	0.9	0.0	98.7	100.0
Latin America and the Caribbean	0.0	0.0	8.7	3.7	76.4	3.4	7.8	0.0	100.0
Northern America	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Oceania	0.0	1.5	17.2	3.2	1.5	0.0	0.0	76.5	100.0
World	3.0	9.5	2.9	26.3	13.4	24.6	0.7	19.6	100.0

countries and account for 1.5 per cent of the population in that major area.

Countries at a more advanced stage of the fertility transition, where total fertility has attained the range of 4 to 5 children per woman, account for a relatively low proportion of the world population (2.9 per cent). These countries constitute 17.2 per cent of the population in Oceania, 12.4 per cent of the population in Africa, almost 9 per cent in Latin America and the Caribbean, and 0.8 per cent of that in Asia. Of greater importance for all major areas is the category of countries that are already fairly advanced in the fertility transition and whose total fertility ranges from 3 to 4 children per woman. These countries account for 37.9 per cent of the population of Asia, 22.3 per cent of that of Africa, 3.7 per cent of that of Latin America and the Caribbean and 3.2 per cent of that of Oceania. At the world level, their population amounts to 26.3 per cent of the total and they include several populous countries that have experienced a rapid reduction of fertility levels.

The next three categories correspond to advanced stages of the transition to low fertility. Countries for which fertility is above replacement level but not above 3 children per woman account, at the world level, for 14.1 per cent of the population. They are numerous in both Latin America and the Caribbean and Asia and represent the majority of the population in Latin America and the Caribbean (84.2 per cent of all inhabitants in this major area). In Latin America they include the two developing countries that had an early transition to low fertility but whose total fertility remained close to 3 children per women during 1950-1980, namely, Argentina and Uruguay. That is, among all major areas in the developing world, Latin America and the Caribbean is the most advanced in the transition to low fertility.

Asia could almost be characterized in the same way were it not for the heterogeneity evident in the transition experience of the countries on this continent. In the developing world, the Asian continent has the highest proportion of persons living in countries with below-replacement fertility (close to 40 per cent); it also has almost the same proportion of persons living in countries where the fertility transition is still at an intermediate stage (38 per cent of its population lives in countries with a total fertility ranging from 3 to 4 children per woman). Furthermore, China, where total fertility dropped to 1.8 children per woman in 1995-2000, accounts almost entirely for the high proportion of the population of Asia that is in the most advanced stage of the transition, and low fertility in Asia remains largely confined to countries of Eastern Asia and Southeastern Asia.

Very low fertility also characterizes most of the developed countries. Having started the fertility transition earlier than almost any developing country, the developed countries have advanced to a stage that some have characterized as "post-transitional" since their total fertility, after increasing moderately because of the baby boom of the 1950s and early 1960s, has tended to decline steadily before reaching and maintaining levels well below replacement. By 2000, the population of the more developed countries with below-replacement fertility accounted for almost 20 per cent of the world population and amounted to nearly 1.2 billion persons, 717 million of whom lived in Europe and 314 million in Northern America.

In order to illustrate better the characteristics of countries that find themselves in the different stages of the fertility transition in 1995-2000, each group will be considered separately. The countries that have yet to embark on the transition are presented in table I.2, together with some indicators of their fertility levels in 1950-2000. In particular, the initial and final total fertility levels during that period are presented, together with the maximum level attained during the period. For a majority of countries in this category the maximum level attained is the same as the most recent level recorded, indicating that fertility has been increasing or stagnant. When the two levels differ, the difference is minimal. Among the countries in this group all except the Congo and Gabon are least developed countries. Several of them, including Angola, Burundi, the Democratic Republic of the Congo, Liberia, Mozambique, Sierra Leone and Somalia, have recently experienced or are still experiencing civil strife as a result of conflict. Partly for this reason,

TABLE I.2. COUNTRIES WHERE THE FERTILITY TRANSITION HAD NOT BEGUN BY 2000

Country	Population in 2000 (in thousands)	Total fertility (children per woman)		
		1950-1955	1995-2000	Maximum level during 1950-2000
Africa				
Angola	13 134	6.39	7.20	7.20
Burundi	6 356	6.80	6.80	6.80
Chad	7 885	5.77	6.65	6.66
Congo	3 018	5.68	6.29	6.29
Dem. Rep. of the Congo	50 948	6.00	6.70	6.70
Equatorial Guinea	457	5.50	5.89	5.89
Gabon	1 230	4.06	5.40	5.40
Guinea-Bissau	1 199	5.58	5.99	5.99
Liberia	2 913	6.29	6.80	6.80
Mali	11 351	7.11	7.00	7.11
Mozambique	18 292	6.19	6.30	6.70
Niger	10 832	7.70	8.00	8.20
Sierra Leone	4 405	6.09	6.50	6.50
Somalia	8 778	7.25	7.25	7.25
Uganda	23 300	6.90	7.10	7.10
Asia				
Yemen	18 349	7.61	7.10	7.10

a number of these countries lack recent data on fertility trends, and the estimates available may provide an imperfect reflection of actual trends. In no case, however, is there evidence of a sizeable fertility reduction.

The countries that already find themselves in the incipient stages of the transition are listed in table I.3. For each of them the information provided includes not only the earliest and the most recent fertility estimates over the period 1950-2000, but also the maximum and the minimum levels over the period and the reference dates when the maximum level was last observed and when the minimum was attained. Reference dates indicate the mid-point of the relevant five-year period. The difference between the reference dates provides a measure of the length of the period over which fertility has declined. Although such estimates are not free from problems (estimates of fertility trajectories for African countries are particularly uncertain given the paucity of data), they nevertheless provide some indication of the timing of the transition. In particular, for most of the countries of Africa listed in table I.3, the estimates of total fertility available indicate that a decline started in the late 1970s or in the 1980s, meaning that it is very recent. On average, the countries belonging to this group saw their fertility decline by 0.62 children per decade.

Countries at the next stage of the fertility transition, with a total fertility between 4 and 5 children per woman in 1995-2000, are presented in table I.4. Only 8 countries in Africa fall into this category; most are located in Northern, Southern, and Eastern Africa. In Asia, the three countries in this group are in Western, South-central, and South-eastern Asia. In Latin America and the Caribbean, this category includes three Central American countries plus Bolivia, Haiti, Paraguay, and French Guiana, all among the poorer countries in the region. In general, fertility started declining earlier in Latin American countries than in the countries in Western Asia and Northern Africa, where the decline was more rapid. On average, all countries at this stage of the transition had seen their fertility decline by 0.75

TABLE I.3. INDICATORS OF THE DYNAMICS OF THE FERTILITY TRANSITION IN COUNTRIES THAT HAD JUST STARTED TO EXPERIENCE A FERTILITY DECLINE AND WHOSE TOTAL FERTILITY WAS STILL ABOVE 5 CHILDREN PER WOMAN IN 1995-2000, ORDERED BY MAJOR AREA AND TOTAL FERTILITY IN 1950-1955

Major area and country or area	*Population in 2000 (in thousands)*	*Total fertility (children per woman)*				*Reference date of maximum level*	*Reference date of minimum level*	*Number of years to pass from maximum to minimum*	*Difference between maximum and minimum levels*	*Decline per decade*
		1950-1955	*1995-2000*	*Maximum level in 1950-2000*	*Minimum level in 1950-2000*					
Africa										
Ethiopia	62 908	7.15	6.75	7.15	6.75	1953	1998	45	0.40	0.09
Djibouti	632	7.10	6.10	7.10	6.10	1953	1998	45	1.00	0.22
Togo	4 527	7.10	5.80	7.10	5.80	1978	1998	20	1.30	0.65
Rwanda	7 609	7.08	6.20	8.49	6.20	1978	1998	20	2.29	1.15
Guinea	8 154	7.00	6.27	7.00	6.27	1983	1998	15	0.73	0.49
Eritrea	3 659	6.97	5.70	6.97	5.70	1958	1998	40	1.27	0.32
Côte d'Ivoire	16 013	6.90	5.10	7.41	5.10	1983	1998	15	2.31	1.54
Madagascar	15 970	6.90	6.10	6.90	6.10	1958	1998	40	0.80	0.20
Nigeria	113 862	6.90	5.92	6.90	5.92	1983	1998	15	0.98	0.65
Benin	6 272	6.80	6.10	7.10	6.10	1983	1998	15	1.00	0.67
Malawi	11 308	6.78	6.75	7.60	6.75	1983	1998	15	0.85	0.57
United Republic of Tanzania	35 119	6.74	5.48	6.80	5.48	1963	1998	35	1.32	0.38
Senegal	9 421	6.70	5.57	7.00	5.57	1978	1998	20	1.43	0.72
Zambia	10 421	6.59	6.05	7.75	6.05	1973	1998	25	1.70	0.68
Mauritania	2 665	6.50	6.00	6.50	6.00	1978	1998	20	0.50	0.25
Burkina Faso	11 535	6.33	6.89	7.80	6.89	1983	1998	15	0.91	0.61
Comoros	706	6.33	5.40	7.05	5.40	1983	1998	15	1.65	1.10
Gambia	1 303	6.09	5.20	6.50	5.20	1983	1998	15	1.30	0.86
Namibia	1 757	6.00	5.30	6.50	5.30	1973	1998	25	1.20	0.48
Cameroon	14 876	5.68	5.10	6.40	5.10	1983	1998	15	1.30	0.87
Central African Republic	3 717	5.52	5.30	5.89	5.30	1978	1998	20	0.59	0.29
Asia										
Afghanistan	21 765	7.70	6.90	7.70	6.90	1958	1998	40	0.80	0.20
Occupied Palestinian Territory	3 191	7.38	5.99	8.00	5.99	1968	1998	30	2.01	0.67
Oman	2 538	7.20	5.85	7.20	5.85	1988	1998	10	1.35	1.35
Iraq	22 946	7.18	5.25	7.18	5.25	1968	1998	30	1.93	0.64
Saudi Arabia	20 346	7.18	6.15	7.30	6.15	1973	1998	25	1.15	0.46
Maldives	291	7.00	5.80	7.00	5.80	1978	1998	20	1.20	0.60
Cambodia	13 104	6.29	5.25	6.40	5.25	1983	1998	15	1.15	0.77
Pakistan	141 256	6.28	5.48	6.28	5.48	1978	1998	20	0.80	0.40
Lao People's Dem. Republic	5 279	6.15	5.30	6.69	5.30	1983	1998	15	1.39	0.93
Bhutan	2 085	5.90	5.50	5.90	5.50	1983	1998	15	0.40	0.27
Oceania										
Solomon Islands	447	6.40	5.60	7.23	5.60	1973	1998	25	1.63	0.65

NOTE: The minimum level of the total fertility for Burkina Faso and Cambodia given in the table refers to the period 1995-2000. In fact, another minimum value was reached earlier, but was not taken into consideration for this analysis.

TABLE I.4. INDICATORS OF THE DYNAMICS OF THE FERTILITY TRANSITION IN COUNTRIES WHOSE TOTAL FERTILITY HAD DECLINED TO A LEVEL BETWEEN 4 AND 5 CHILDREN PER WOMAN IN 1995-2000, ORDERED BY MAJOR AREA AND TOTAL FERTILITY IN 1950-1955

Major area and country	*Population in 2000 (in thousands)*	*Total fertility (children per woman)*				*Reference date of maximum level*	*Reference date of minimum level*	*Number of years to pass from maximum to minimum*	*Difference between maximum and minimum levels*	*Decline per decade*
		1950-1955	*1995-2000*	*Maximum level in 1950-2000*	*Minimum level in 1950-2000*					
Africa										
Kenya	30 669	7.51	4.60	8.12	4.60	1973	1998	25	3.52	1.41
Ghana	19 306	6.90	4.60	6.90	4.60	1978	1998	20	2.30	1.15
Zimbabwe	12 627	6.70	5.00	7.50	5.00	1968	1998	30	2.50	0.83
Western Sahara	252	6.53	4.40	6.53	4.40	1973	1998	25	2.13	0.85
Botswana	1 541	6.50	4.35	6.90	4.35	1963	1998	35	2.55	0.73
Sudan	31 095	6.50	4.90	6.67	4.90	1973	1998	25	1.77	0.71
Swaziland	925	6.50	4.80	6.50	4.80	1968	1998	30	1.70	0.57
Lesotho	2 035	5.84	4.75	5.86	4.75	1958	1998	40	1.11	0.28
Asia										
Jordan	4 913	7.38	4.69	8.00	4.69	1968	1998	30	3.31	1.10
East Timor	737	6.44	4.35	6.44	4.31	1953	1978	25	2.14	0.85
Nepal	23 043	5.75	4.83	6.06	4.83	1963	1998	35	1.23	0.35
Latin America and the Caribbean										
Honduras	6 417	7.50	4.30	7.50	4.30	1958	1998	40	3.20	0.80
Nicaragua	5 071	7.33	4.32	7.33	4.32	1963	1998	35	3.01	0.86
Guatemala	11 385	7.09	4.93	7.09	4.93	1953	1998	45	2.16	0.48
Bolivia	8 329	6.75	4.36	6.75	4.36	1953	1998	45	2.39	0.53
Paraguay	5 496	6.50	4.17	6.55	4.17	1963	1998	35	2.38	0.68
Haiti	8 142	6.30	4.38	6.30	4.38	1963	1998	35	1.92	0.55
French Guiana	165	5.00	4.05	5.02	3.30	1963	1978	15	1.72	1.15
Oceania										
Vanuatu	197	7.60	4.59	7.60	4.59	1953	1998	45	3.01	0.67
Samoa	159	7.30	4.51	7.30	4.51	1963	1998	35	2.79	0.80
Papua New Guinea	4 809	6.24	4.60	6.29	4.60	1963	1998	35	1.69	0.48

children per decade, with countries in Africa recording an average decline of 0.82 children per decade.

As already noted, a 26 per cent of the world population finds itself in the intermediate stage of the fertility transition, in which fertility had dropped to values between 3 and 4 children per woman by 1995-2000. Table I.5 displays the set of countries in this stage. The most populous countries in this group by major area are: Egypt and South Africa in Africa; India, Bangladesh, the Philippines, and Iran in Asia; and Ecuador in Latin America and the Caribbean. For the Latin American countries in this group, fertility started to decline in the 1950s (Belize) or in the early 1960s. Similarly the countries in Africa and Asia in this category include both early starters (in the 1950s) and those where fertility began to decline more recently (mostly in the early 1960s in Asian countries and in the early 1970s in countries of Northern Africa). The average reductions of fertility in all countries of this group amounted to 1.06 children per decade, with the 6 countries in Africa, four of which are located in Northern Africa, experiencing the most rapid decline at 1.25 children per decade.

The countries that were already in the advanced stage of the fertility transition in 1995-2000, having attained a total fertility ranging between 2.1 and 3 children per woman, are shown in table I.6. The group includes a number of populous countries, such as Indonesia, Brazil, Mexico, and Turkey, in order of population size. Most countries in this group, except Jamaica, Kuwait, Mongolia and Viet Nam, began the fertility transition before 1965. As the countries in the previous group, these countries also experienced an average decline in their total fertility of 1.06 children per decade. Because of the more rapid reductions in fertility in some of the Asian countries belonging to this group—Kuwait, Mongolia, and Viet Nam—the Asian countries in this category experienced, on average, a sharper decline in total fertility—1.12 children per decade—than the rest.

A slightly slower decline in total fertility, at 0.9 children per decade, was registered by the 23 countries whose total fertility had dropped below replacement level by 1995-2000 after displaying moderate to high levels in the 1950s (see table I.7). Most of the countries in this group are located in the developing regions and had embarked on the fertility transition during the 1950s. Although the reduction of fertility in most of them was slow at first, the decline accelerated in recent decades. Countries in Asia dominate this group with China alone accounting for 85 per cent of the total population of countries in the group. The speed of fertility decline in this group can be compared to the average decrease experienced by the countries that had undergone an early transition, having relatively low levels of fertility in the 1950s, but whose total fertility continued to decline further during 1950-2000 (see table I.8). Among the latter group, the decline of fertility, that in most cases came after a short-lived baby boom, proceeded at an average pace of 0.47 children per decade. In comparison, the pace of fertility reduction experienced so far by the majority of developing countries has been quite rapid.

B. THE FUTURE OF THE FERTILITY TRANSITION

Given the current status of countries with respect to the fertility transition and the fast reductions of fertility that have been experienced by numerous countries in the developing world, the transition toward lower fertility levels is expected to continue and expand in the future. For that reason, the main projection variants of the *2000 Revision* are made under the assumption of a continued fertility decline in the majority of developing countries. Thus, the medium-fertility variant assumes that the countries with a total fertility of 5 children per woman or more and no major reduction during 1950-2000 will see their fertility decline at an average pace of nearly one child per decade starting in 2005. Since the total fertility levels of the majority of these countries range between 6 and 8 children per woman, replacement-level fertility is not likely to be reached by the end of the projection period. Countries with total fertility above 5 children per woman in 1995-2000 and an incipient decline will also experience a reduction of their fertility by approximately one child per decade but starting in 2000. Because fertility levels in a number of these countries continue to be high, some of them will also fail to reach a total fertility of 2.1 children per

TABLE I.5. INDICATORS OF THE DYNAMICS OF THE FERTILITY TRANSITION IN COUNTRIES THAT HAD ATTAINED FERTILITY LEVELS BETWEEN 3 AND 4 CHILDREN PER WOMAN IN 1995-2000, ORDERED BY MAJOR AREA AND TOTAL FERTILITY IN 1950-1955

Major area and country	*Population in 2000 (in thousands)*	*Total fertility (children per woman)*				*Reference date of maximum level*	*Reference date of minimum level*	*Number of years to pass from maximum to minimum*	*Difference between maximum and minimum levels*	*Decline per decade*
		1950-1955	*1995-2000*	*Maximum level in 1950-2000*	*Minimum level in 1950-2000*					
Africa										
Algeria	30 291	7.28	3.25	7.38	3.25	1973	1998	25	4.13	1.65
Morocco	29 878	7.18	3.40	7.18	3.40	1958	1998	40	3.78	0.95
Libyan Arab Jamahiriya	5 290	6.87	3.80	7.59	3.80	1973	1998	25	3.79	1.51
Cape Verde	427	6.60	3.56	7.00	3.56	1973	1998	25	3.44	1.38
Egypt	67 884	6.56	3.40	7.07	3.40	1963	1998	35	3.67	1.05
South Africa	43 309	6.50	3.10	6.50	3.10	1963	1998	35	3.40	0.97
Asia										
Philippines	75 653	7.29	3.64	7.29	3.64	1953	1998	45	3.65	0.81
Syrian Arab Republic	16 189	7.09	4.00	7.79	4.00	1968	1998	30	3.79	1.26
Iran (Islamic Republic of)	70 330	7.00	3.20	7.00	3.20	1963	1998	35	3.80	1.09
Qatar	565	6.97	3.70	6.97	3.70	1968	1998	30	3.27	1.09
United Arab Emirates	2 606	6.97	3.17	6.97	3.17	1958	1998	40	3.80	0.95
Malaysia	22 218	6.83	3.26	6.94	3.26	1958	1998	40	3.69	0.92
Bangladesh	137 439	6.70	3.80	7.10	3.80	1963	1998	35	3.30	0.94
Myanmar	47 749	6.00	3.30	6.00	3.30	1968	1998	30	2.70	0.90
Tajikistan	6 087	6.00	3.72	6.83	3.72	1973	1998	25	3.11	1.25
Turkmenistan	4 737	6.00	3.60	6.75	3.60	1963	1998	35	3.15	0.90
India	1 008 937	5.97	3.32	5.97	3.32	1953	1998	45	2.65	0.59
Latin America and the Caribbean										
Ecuador	12 646	6.70	3.10	6.70	3.10	1963	1998	35	3.60	1.03
Belize	226	6.65	3.41	6.65	3.41	1953	1998	45	3.24	0.72
El Salvador	6 278	6.46	3.17	6.85	3.17	1963	1998	35	3.68	1.05
Oceania										
Fiji	814	6.63	3.20	6.79	3.20	1958	1998	40	3.59	0.90
Guam	155	5.53	3.95	6.03	3.08	1963	1983	20	2.95	1.48

TABLE I.6. INDICATORS OF THE DYNAMICS OF THE FERTILITY TRANSITION IN COUNTRIES THAT HAD ATTAINED FERTILITY LEVELS BELOW 3 CHILDREN PER WOMAN BUT ABOVE REPLACEMENT LEVEL IN 1995-2000, ORDERED BY MAJOR AREA AND TOTAL FERTILITY IN 1950-1955

Major area and country	*Population in 2000 (in thousands)*	*Total fertility (children per woman)*				*Reference date of maximum level*	*Reference date of minimum level*	*Number of years to pass from maximum to minimum*	*Difference between maximum and minimum levels*	*Decline per decade*
		1950-1955	*1995-2000*	*Maximum level in 1950-2000*	*Minimum level in 1950-2000*					
Africa										
Tunisia	9 459	6.93	2.31	7.25	2.31	1963	1998	35	4.94	1.41
Réunion	721	5.65	2.30	5.85	2.30	1958	1998	40	3.55	0.89
Asia										
Kuwait	1 914	7.21	2.89	7.41	2.89	1968	1998	30	4.52	1.51
Brunei Darussalam	328	7.00	2.80	7.00	2.80	1958	1998	40	4.20	1.05
Bahrain	640	6.97	2.63	7.18	2.63	1963	1998	35	4.55	1.30
Turkey	66 668	6.90	2.70	6.90	2.70	1953	1998	45	4.20	0.93
Mongolia	2 533	6.00	2.70	7.33	2.70	1973	1998	25	4.63	1.85
Uzbekistan	24 881	5.97	2.85	6.80	2.85	1963	1998	35	3.95	1.13
Viet Nam	78 137	5.75	2.50	7.25	2.50	1968	1998	30	4.75	1.58
Lebanon	3 496	5.74	2.29	6.36	2.29	1963	1998	35	4.07	1.16
Indonesia	212 092	5.49	2.60	5.67	2.60	1958	1998	40	3.07	0.77
Kyrgyzstan	4 921	4.51	2.89	5.39	2.89	1963	1998	35	2.50	0.71
Israel	6 040	4.16	2.93	4.16	2.93	1953	1993	40	1.23	0.31
Latin America and the Caribbean										
Dominican Republic	8 373	7.40	2.88	7.40	2.88	1958	1998	40	4.52	1.13
Mexico	98 872	6.87	2.75	6.96	2.75	1958	1998	40	4.21	1.05
Peru	25 662	6.85	2.98	6.85	2.98	1963	1998	35	3.87	1.11
Colombia	42 105	6.76	2.80	6.76	2.80	1963	1998	35	3.96	1.13
Costa Rica	4 024	6.72	2.83	7.11	2.83	1958	1998	40	4.28	1.07
Guyana	761	6.68	2.45	6.77	2.45	1958	1998	40	4.32	1.08
Suriname	417	6.56	2.21	6.56	2.21	1963	1998	35	4.35	1.24
Venezuela	24 170	6.46	2.98	6.66	2.98	1963	1998	35	3.67	1.05
Brazil	170 406	6.15	2.27	6.15	2.27	1963	1998	35	3.88	1.11
Saint Lucia	148	6.00	2.70	6.94	2.70	1958	1998	40	4.24	1.06
Panama	2 856	5.68	2.63	5.92	2.63	1963	1998	35	3.29	0.94
Chile	15 211	4.95	2.44	5.33	2.44	1958	1998	40	2.89	0.72
Jamaica	2 576	4.22	2.50	5.78	2.50	1968	1998	30	3.28	1.09
Bahamas	304	4.05	2.40	4.50	2.40	1963	1998	35	2.10	0.60
Europe										
Albania	3 134	5.60	2.60	5.98	2.60	1958	1998	40	3.38	0.84
Oceania										
French Polynesia	233	6.00	2.60	6.50	2.60	1963	1998	35	3.90	1.11
New Caledonia	215	5.00	2.60	5.30	2.60	1963	1998	35	2.70	0.77

TABLE I.7. INDICATORS OF THE DYNAMICS OF THE FERTILITY TRANSITION IN COUNTRIES THAT HAD ATTAINED FERTILITY LEVELS AT OR BELOW REPLACEMENT LEVEL BY 1995-2000, ORDERED BY MAJOR AREA AND TOTAL FERTILITY IN 1950-1955

Major area and country or area	*Population in 2000 (in thousands)*	*Total fertility (children per woman)*				*Reference date of maximum level*	*Reference date of minimum level*	*Number of years to pass from maximum to minimum*	*Difference between maximum and minimum levels*	*Decline per decade*
		1950-1955	*1995-2000*	*Maximum level in 1950-2000*	*Minimum level in 1950-2000*					
Africa										
Mauritius	1 161	6.27	2.00	6.27	2.00	1953	1998	45	4.27	0.95
Asia										
Thailand	62 806	6.40	2.10	6.40	2.10	1963	1993	30	4.30	1.43
Singapore	4 018	6.40	1.60	6.40	1.60	1953	1998	45	4.80	1.07
China	1 275 133	6.22	1.80	6.22	1.80	1953	1998	45	4.42	0.98
Sri Lanka	18 924	5.94	2.10	5.98	2.10	1958	1998	40	3.88	0.97
Azerbaijan	8 041	5.49	1.94	5.64	1.94	1963	1998	35	3.70	1.06
Republic of Korea	46 740	5.40	1.51	6.33	1.51	1958	1998	40	4.82	1.21
China, Macao SAR	444	5.03	1.15	5.10	1.15	1963	1998	35	3.95	1.13
Armenia	3 787	4.49	1.39	4.49	1.39	1958	1998	40	3.11	0.78
China, Hong Kong SAR	6 860	4.44	1.17	5.31	1.17	1963	1998	35	4.14	1.18
Kazakhstan	16 172	4.41	2.10	4.56	2.10	1958	1998	40	2.46	0.61
Cyprus	784	3.71	1.98	3.71	1.98	1953	1998	45	1.73	0.38
Dem. People's Rep. of Korea	22 268	3.35	2.05	4.62	2.05	1958	1998	40	2.57	0.64
Latin America and the Caribbean										
Martinique	383	5.71	1.75	5.71	1.75	1958	1998	40	3.96	0.99
Netherlands Antilles	215	5.65	2.10	5.65	2.10	1953	1998	45	3.55	0.79
Guadeloupe	428	5.61	2.06	5.61	2.06	1963	1998	35	3.55	1.02
Trinidad and Tobago	1 294	5.30	1.65	5.30	1.65	1958	1998	40	3.65	0.91
Puerto Rico	3 915	4.97	1.97	4.97	1.97	1953	1998	45	3.00	0.67
Barbados	267	4.67	1.50	4.67	1.50	1958	1998	40	3.17	0.79
Cuba	11 199	4.10	1.55	4.67	1.55	1963	1998	35	3.12	0.89
Europe										
TFYR Macedonia	2 034	5.32	1.92	5.32	1.76	1953	1993	40	3.56	0.89
Bosnia and Herzegovina	3 977	4.82	1.35	4.82	1.35	1953	1998	45	3.47	0.77
Malta	390	4.14	1.91	4.14	1.91	1953	1998	45	2.23	0.50

TABLE I.8. INDICATORS OF THE EVOLUTION OF FERTILITY DURING 1950-2000 IN THE LOW-FERTILITY COUNTRIES THAT HAD UNDERGONE THE TRANSITION EARLY, ORDERED ACCORDING TO MAJOR AREA AND ESTIMATED TOTAL FERTILITY IN 1995-2000

Major area and country	*Population in 2000 (in thousands)*	*Total fertility (children per woman)*				*Reference date of maximum level*	*Reference date of minimum level*	*Number of years to pass from maximum to minimum*	*Difference between maximum and minimum levels*	*Decline per decade*
		1950-1955	*1995-2000*	*Maximum level in 1950-2000*	*Minimum level in 1950-2000*					
Latin America and the Caribbean										
Uruguay	3 337	2.73	2.40	3.00	2.40	1973	1998	25	0.60	0.24
Argentina	37 032	3.15	2.62	3.44	2.62	1978	1998	20	0.82	0.41
Asia										
Japan	127 096	2.75	1.41	2.75	1.41	1953	1998	45	1.34	0.30
Georgia	5 262	3.00	1.58	3.00	1.58	1953	1998	45	1.42	0.32
Europe										
Latvia	2 421	2.00	1.12	2.09	1.12	1988	1998	10	0.97	0.97
Bulgaria	7 949	2.48	1.14	2.48	1.14	1953	1998	45	1.34	0.30
Spain	39 910	2.57	1.16	2.92	1.16	1968	1998	30	1.76	0.59
Czech Republic	10 272	2.69	1.18	2.69	1.18	1953	1998	45	1.51	0.33
Italy	57 530	2.32	1.20	2.50	1.20	1963	1998	35	1.29	0.37
Russian Federation	145 491	2.85	1.23	2.85	1.23	1953	1998	45	1.61	0.36
Slovenia	1 988	2.80	1.24	2.80	1.24	1953	1998	45	1.56	0.35
Estonia	1 393	2.06	1.24	2.18	1.24	1988	1998	10	0.93	0.93
Ukraine	49 568	2.81	1.26	2.81	1.26	1953	1998	45	1.56	0.35
Belarus	10 187	2.61	1.27	2.73	1.27	1958	1998	40	1.46	0.37
Greece	10 610	2.29	1.30	2.38	1.30	1968	1998	30	1.09	0.36
Romania	22 438	2.87	1.32	2.96	1.32	1968	1998	30	1.64	0.55
Germany	82 017	2.16	1.33	2.49	1.33	1963	1998	35	1.16	0.33
Austria	8 080	2.09	1.36	2.78	1.36	1963	1998	35	1.42	0.41
Hungary	9 968	2.73	1.37	2.73	1.37	1953	1998	45	1.35	0.30
Lithuania	3 696	2.71	1.38	2.71	1.38	1953	1998	45	1.32	0.29
Slovakia	5 399	3.52	1.40	3.52	1.40	1953	1998	45	2.12	0.47
Poland	38 605	3.62	1.46	3.62	1.46	1953	1998	45	2.16	0.48
Portugal	10 016	3.04	1.46	3.07	1.46	1963	1998	35	1.61	0.46
Switzerland	7 170	2.28	1.47	2.51	1.47	1963	1998	35	1.04	0.30
Channel Islands	144	2.07	1.50	2.67	1.43	1963	1983	20	1.25	0.62
Sweden	8 842	2.21	1.51	2.32	1.51	1963	1998	35	0.82	0.23

TABLE I.8 (*continued*)

Major area and country	*Population in 2000 (in thousands)*	*Total fertility (children per woman)*				*Reference date of maximum level*	*Reference date of minimum level*	*Number of years to pass from maximum to minimum*	*Difference between maximum and minimum levels*	*Decline per decade*
		1950-1955	*1995-2000*	*Maximum level in 1950-2000*	*Minimum level in 1950-2000*					
Netherlands	15 864	3.06	1.54	3.17	1.52	1963	1983	20	1.65	0.83
Belgium	10 249	2.33	1.55	2.66	1.55	1963	1998	35	1.11	0.32
Republic of Moldova	4 295	3.50	1.61	3.50	1.61	1953	1998	45	1.89	0.42
Croatia	4 654	2.76	1.68	2.76	1.52	1953	1993	40	1.24	0.31
United Kingdom	59 415	2.18	1.70	2.81	1.70	1963	1998	35	1.11	0.32
Finland	5 172	2.97	1.71	2.97	1.62	1953	1973	20	1.36	0.68
Luxembourg	437	1.98	1.72	2.37	1.47	1963	1983	20	0.90	0.45
France	59 238	2.73	1.73	2.85	1.71	1963	1993	30	1.14	0.38
Denmark	5 320	2.54	1.74	2.59	1.43	1963	1983	20	1.16	0.58
Yugoslavia	10 552	3.22	1.77	3.22	1.77	1953	1998	45	1.46	0.32
Norway	4 469	2.60	1.83	2.90	1.69	1963	1983	20	1.21	0.61
Ireland	3 803	3.38	1.92	3.98	1.92	1963	1998	35	2.06	0.59
Iceland	279	3.70	2.05	4.02	2.05	1958	1998	40	1.98	0.49
Northern America										
Canada	30 757	3.73	1.60	3.90	1.60	1958	1998	40	2.30	0.57
United States of America	283 230	3.45	2.04	3.71	1.79	1958	1978	20	1.92	0.96
Oceania										
Australia	19 138	3.18	1.77	3.41	1.77	1958	1998	40	1.64	0.41
New Zealand	3 778	3.69	1.97	4.07	1.96	1958	1983	25	2.11	0.84

woman by 2045-2050. Countries where total fertility is still above replacement level by 2000 but where fertility has been declining more rapidly are all expected to reach a total fertility of 2.1 children per woman before 2050. Lastly, countries with fertility levels close to 2.1 children per woman or below that value are projected to see their fertility levels fall in the near future. By 2045-2050, however, it is projected that the fertility levels of these countries will be equal to the estimated completed fertility of the cohort of women born in 1960-1964. If information regarding cohort fertility is not available, countries with a total fertility below 1.5 children per woman in 1995-2000 are projected to reach a total fertility of 1.7 children per woman by 2045-2050. In addition, for countries with a total fertility above 1.5 children per woman but below 2.1 children per woman in 1995-2000 and lacking information on cohort fertility levels, total fertility is projected to be 1.9 children per woman by 2045-2050 in the medium-fertility variant.

The low-fertility variant assumes that countries with a total fertility above 2.1 children per woman in 1995-2000 will see their fertility fall to a level 0.5 children below that projected under the medium-fertility variant for 2045-2050. For countries experiencing fertility levels below 2.1 children per woman in 1995-2000, total fertility is projected to be 0.4 children per woman below the level attained by the medium-fertility variant in 2045-2050.

In the high-fertility variant, countries with a total fertility of above 2.1 children per woman in 1995-2000 are projected to have a total fertility 0.5 children per woman above the level attained under the medium-fertility variant in 2045-2050. For countries experiencing a total fertility at or below 2.1 children per woman in 1995-2000, the high-variant projects a total fertility 0.4 children per woman above the value projected under the medium-fertility variant for 2045-2050.

As noted above, for the majority of countries with below replacement fertility in 1995-2000, the medium variant implies a rise in total fertility over much of the projection period. In fact, for most of the countries that currently have below-replacement fertility, the medium variant assumes that the minimum fertility level during 2000-2050 will be reached between 2000 and 2010. Consequently, the low variant, by assuming that total fertility in this group of countries moves to a level 0.4 children below the one attained under the medium variant, leads either to smaller future increases in the total fertility of countries with the lowest fertility levels in 1995-2000 or to declining fertility during the whole 2000-2050 period. The high variant, in contrast, results in increasing future fertility trends for all countries in this group.

For high-fertility countries, it is noteworthy that the *2000 Revision* no longer assumes that their total fertility will necessarily reach 2.1 children per woman by 2050. Since the fertility of high-fertility countries is projected to decline at an average pace of one child per decade, 16 countries in that group are projected to have a total fertility considerably higher than 2.1 children per woman by 2045-2050.

Given the assumptions underlying the three main projection variants, all of them are expected to yield a progressive concentration of countries in the low end of the fertility spectrum. Table I.9 presents the distribution of countries according to the level of fertility that they attain at various future periods according to the three main projection variants. Although the three variants cover the initial period (2000-2005), such a small difference exists between them at that stage of the projection that results for all three are presented separately only as of 2015-2020.

All variants show that by 2015-2020 a significant number of countries still exhibit relatively high fertility levels (above 5 children per woman). Although the number of countries in this category varies among variants, and the population of the countries involved ranges from 320 million in the low variant to 487 million in the high, those numbers represent between 4.5 per cent and 6.3 per cent of the world population in 2018 (see tables I.10 and I.11). There is also variability among variants regarding the size of the population experiencing intermediate fertility levels (higher than 4 children per woman but equal or lower than 5 children per woman). The low variant yields 161 million persons living in the 11 countries belonging to that category

TABLE I.9. PROJECTED DISTRIBUTION OF COUNTRIES BY LEVEL OF TOTAL FERTILITY, 2000-2050

Period	World total fertility	Total fertility								
		TF > 5	*4 < TF*	*5*	*3 < TF*	*4*	*2.1 < TF*	*3*	*TF*	*2.1*
2000-2005	2.7	39	21		18		43		66(65)	
				Medium variant						
2015-2020	2.4	16	18		25		26		102(67)	
2025-2030	2.3	4	12		20		31		120(69)	
2035-2040	2.2	0	4		12		23		148(69)	
2045-2050	2.1	0	0		4		12		171(65)	
				High variant						
2015-2020	2.9	20	21		30		67		0(49)	
2025-2030	2.8	11	16		25		96		0(39)	
2035-2040	2.7	1	10		17		139		20(19)	
2045-2050	2.6	0	1		11		164		11(4)	
				Low variant						
2015-2020	2.0	11	11		26		21		118(117)	
2025-2030	1.9	1	10		16		23		0(137)	
2035-2040	1.8	0	1		10		17		0(159)	
2045-2050	1.7	0	0		1		11		0(175)	

NOTE: Numbers in parenthesis indicate the number of countries with total fertility below 2.10 children per woman.

in 2015-2020, whereas the high variant produces a figure of 655 million people for the same period. For the three variants the proportion of the world population living in countries with intermediate fertility levels ranges between 2.2 and 8.5 per cent in 2015-2020, and by 2048 there is no country left with a total fertility in the intermediate range under the low-variant and only one country (Niger) under the high-variant. The number of countries experiencing a total fertility greater than 3 children per woman but lower than or equal to 4 children per woman will likely increase from 18 in 2000-2005 to 30 according to the high variant or 26 according to the low variant by 2015-2020. Over time, however, fewer countries in all variants will fall into this category.

Due to the assumptions underlying the projections, as time elapses countries tend to concentrate in the last two categories: that of the low-fertility countries (with a total fertility higher than 2.1 but lower than 3 children per woman) and that of the countries with fertility at or below replacement level. In the medium variant 171 out of the 187 countries or areas considered will belong to the group having a total fertility at or below replacement level by 2045-2050. In the high variant, by contrast, 164 countries or areas will still be experiencing total fertility levels above 2.1 children per woman but less than or equal to 3 children per woman. In the low variant, 175 countries are projected to have below-replacement fertility in 2045-2050. As table I.9 indicates, in the medium variant at least 65 countries maintain a total fertility below 2.1 children per woman during most of the projection period. Furthermore, because the population of the rest of the countries in the world continues to increase, the population share of the countries with below-replacement fertility in the medium variant declines over time, passing from 43 per cent in 2003 to about 27 per cent by the end of the projection period. Table I.12 lists the countries whose fertility remains below replacement level during most of the period 2000-2050.

One of the sources of uncertainty regarding future levels of fertility is the path that will be followed by countries that have yet to show signs of a fertility reduction, or where the fertility transition is at an early stage. Table I.13 shows a list of the countries

TABLE I.10. POPULATION OF COUNTRIES IN DIFFERENT CATEGORIES ACCORDING TO LEVEL OF TOTAL FERTILITY, 2003-2048
(Millions)

Period	World total population	Total fertility				
		TF > 5	4 < TF 5	3 < TF 4	2.1 < TF 3	TF 2.1
2003	6 286	738	236	326	2 258	2 728(2 718)
				Medium variant		
2018	7 429	467	169	726	638	5 430(2 870)
2028	9 070	1 070	484	221	980	6 316(2 982)
2038	8 743	0	184	616	287	7 656(2 990)
2048	9 236	0	0	238	747	8 252(2 518)
				High variant		
2018	7 703	487	655	606	4 985	(971)
2028	8 685	460	341	777	6 342	(765)
2038	9 695	41	570	447	8 107	531(521)
2048	10 726	0	55	763	9 687	221(164)
				Low variant		
2018	7 138	320	161	623	327	5 708(5 699)
2028	7 582	27	389	300	642	(6 225)
2038	7 827	0	35	486	367	(6 939)
2048	7 876	0	0	44	605	(7 227)

NOTE: Numbers in parenthesis refer to countries with total fertility below 2.10 children per woman.

TABLE I.11. DISTRIBUTION OF WORLD POPULATION ACCORDING TO LEVEL OF TOTAL FERTILITY, 2003-2048
(*Percentage*)

Period	Total	Total fertility				
		TF > 5	4 < TF 5	3 < TF 4	2.1 < TF 3	TF 2.1
2003	100	11.7	3.8	5.2	35.9	43.4 (43.2)
				Medium variant		
2018	100	6.3	2.3	9.8	8.6	73.1(38.6)
2028	100	11.8	5.3	2.4	10.8	69.6(32.9)
2038	100	0.0	2.1	7.0	3.3	87.6(34.2)
2048	100	0.0	0.0	2.6	8.1	89.3(27.3)
				High variant		
2018	100	6.3	8.5	7.9	64.7	(12.6)
2028	100	5.3	3.9	8.9	73.0	(8.8)
2038	100	0.4	5.9	4.6	83.6	5.5(5.4)
2048	100	0.0	0.5	7.1	90.3	2.1(1.5)
				Low variant		
2018	100	4.5	2.2	8.7	4.6	80.0(79.8)
2028	100	0.4	5.1	4.0	8.5	(82.1)
2038	100	0.0	0.4	6.2	4.7	(88.7)
2048	100	0.0	0.0	0.6	7.7	(91.8)

NOTE: Numbers in parenthesis refer to countries with total fertility below 2.10 children per woman.

TABLE I.12. PROJECTED LEVELS OF FERTILITY UNDER THE MEDIUM VARIANT FOR COUNTRIES WHOSE FERTILITY WILL REMAIN UNDER REPLACEMENT LEVEL OVER THE PROJECTION PERIOD, ORDERED BY MAJOR AREA AND FERTILITY LEVEL PROJECTED FOR 2000-2005

Major area and country or area	*Total fertility (children per woman)*			*Reference date for the minimum fertility level*
	2000-2005	*2045-2050*	*Minimum level projected over the period 2000-2050*	
Africa				
Mauritius	1.90	1.90	1.90	2003
Asia				
Armenia	1.10	1.70	1.10	2003
China, Macao SAR	1.10	1.70	1.10	2003
China, Hong Kong SAR	1.17	1.70	1.17	2003
Japan	1.33	1.75	1.33	2003
Georgia	1.39	1.90	1.29	2008
Singapore	1.45	1.90	1.40	2008
Republic of Korea	1.51	2.10	1.51	2003
Azerbaijan	1.51	1.90	1.40	2008
China	1.80	1.90	1.80	2003
Cyprus	1.92	1.90	1.90	2008
Kazakhstan	1.95	1.90	1.90	2008
Thailand	2.00	1.90	1.85	2013
Sri Lanka	2.09	1.90	1.90	2018
Europe				
Latvia	1.10	2.00	1.10	2003
Bulgaria	1.10	1.89	1.10	2003
Ukraine	1.10	1.70	1.10	2003
Spain	1.13	1.64	1.10	2008
Slovenia	1.14	1.83	1.10	2008
Russian Federation	1.14	1.75	1.14	2003
Czech Republic	1.16	1.97	1.16	2002
Belarus	1.20	1.86	1.20	2003
Estonia	1.20	2.00	1.20	2003
Italy	1.20	1.61	1.20	2003
Hungary	1.20	1.97	1.20	2003
Lithuania	1.20	2.00	1.11	2008
Greece	1.24	1.85	1.20	2008
Austria	1.24	1.65	1.19	2008
Slovakia	1.28	1.70	1.28	2003
Germany	1.29	1.61	1.28	2008
Sweden	1.29	2.01	1.29	2003
Bosnia and Herzegovina	1.30	1.70	1.30	2003
Romania	1.32	2.05	1.32	2003
Switzerland	1.38	1.72	1.34	2008
Republic of Moldova	1.40	1.90	1.30	2008
Portugal	1.45	1.83	1.40	2008
Belgium	1.48	1.82	1.44	2008
TFYR Macedonia	1.48	1.90	1.26	2008
Channel Islands	1.50	1.70	1.50	2003
Netherlands	1.50	1.81	1.50	2003

TABLE I.12 (*continued*)

Major area and country or area	*Total fertility (children per woman)*			*Reference date for the minimum fertility level*
	2000-2005	*2045-2050*	*Minimum level projected over the period 2000-2050*	
Finland	1.55	1.94	1.50	2008
Yugoslavia	1.55	1.90	1.45	2008
United Kingdom	1.61	1.91	1.58	2008
Denmark	1.65	1.90	1.60	2008
Croatia	1.70	1.90	1.70	2003
Norway	1.70	2.07	1.65	2008
Luxembourg	1.76	1.90	1.76	2003
Malta	1.77	1.84	1.70	2008
France	1.80	1.90	1.80	2003
Latin America and the Caribbean				
Barbados	1.50	1.90	1.50	2003
Trinidad and Tobago	1.53	1.90	1.53	2003
Cuba	1.55	1.90	1.55	2003
Martinique	1.70	1.89	1.70	2003
Puerto Rico	1.90	1.90	1.90	2003
Guadeloupe	2.02	1.90	1.90	2018
Suriname	2.05	1.90	1.70	2013
Netherlands Antilles	2.09	1.90	1.90	2043
Northern America				
Canada	1.58	1.90	1.58	2003
Oceania				
Australia	1.75	2.02	1.75	2003
New Zealand	1.97	2.07	1.77	2018

with a projected total fertility above 5 children per woman in 2000-2005, together with the time at which they are expected to reach replacement level fertility according to the medium variant. Out of the 39 countries listed, only four—Nigeria, Pakistan, Senegal and the United Republic of Tanzania—are expected to reach total fertility levels of 2.1 children per woman before 2040. It is projected that the total fertility of another 19 countries will reach 2.1 children per woman during 2040-2050. However, for 16 countries in the group, total fertility will remain well above 2.1 children per woman until 2050. As a result, the combined population of these countries, 14 of which are located in Africa and 2 in Asia, is expected to more than triple, rising from about 269 million people in 2000 to slightly more than one billion in 2050.

Table I.14 presents estimates of the pace of fertility decline for different groups of countries during 1950-2000 and during 2000-2050 according to the medium variant. Such estimates indicate that the average pace of decline projected for countries that have yet to embark on the transition to low fertility is comparable to the average pace of decline experienced by all developing countries in the past. The pace of decline projected for countries that had already shown some signs of an incipient fertility decline but whose fertility levels were still higher than 5 children per woman in 1995-2000 was slightly lower than the average for all countries, mainly because most of those countries were projected to reach 2.1 children per woman before the end of the projection period and were therefore subject to a slight deceleration of the decline in total fertility as that level was being reached. Even slower is the pace of decline projected for countries that were already further along in the transition to low fertility by 1995-2000. Countries with fertility levels ranging from 4 to 5 children per woman in

TABLE I.13. ASSUMPTIONS MADE IN THE MEDIUM VARIANT ABOUT THE STARTING FERTILITY LEVEL AND THE TIMING OF THE ATTAINMENT OF REPLACEMENT LEVEL FOR COUNTRIES WITH FERTILITY ABOVE 5 CHILDREN PER WOMAN IN 2000-2005, ORDERED BY MAJOR AREA AND FERTILITY LEVEL

Major area and country or area	*Total fertility in 2000-2005*	*Reference date for the attainment of replacement level*	*Total population in 2000 (in thousands)*	*Total population in 2050 (in thousands)*
Africa				
Niger	8.00	-	10 832	51 872
Somalia	7.25	-	8 778	40 936
Angola	7.20	-	13 134	53 328
Uganda	7.10	-	23 300	101 524
Mali	7.00	-	11 351	41 724
Burkina Faso	6.80	-	11 535	46 304
Burundi	6.80	-	6 356	20 218
Liberia	6.80	-	2 913	14 370
Ethiopia	6.75	-	62 908	186 452
Dem. Rep. Of the Congo	6.70	-	50 948	203 527
Chad	6.65	-	7 885	27 732
Sierra Leone	6.50	-	4 405	14 351
Malawi	6.34	-	11 308	31 114
Congo	6.29	-	3 018	10 744
Mauritania	6.00	2048	2 665	8 452
Guinea-Bissau	5.99	2048	1 199	3 276
Equatorial Guinea	5.89	2048	457	1 378
Mozambique	5.86	2048	18 292	38 837
Guinea	5.83	2048	8 154	20 711
Djibouti	5.77	2048	632	1 068
Rwanda	5.77	2048	7 609	18 523
Benin	5.68	2048	6 272	18 070
Madagascar	5.68	2048	15 970	47 030
Zambia	5.66	2048	10 421	29 262
Nigeria	5.42	2038	113 862	278 788
Gabon	5.40	2043	1 230	3 164
Togo	5.36	2043	4 527	11 832
Eritrea	5.28	2043	3 659	10 028
Senegal	5.11	2038	9 421	22 711
United Republic of Tanzania	5.03	2038	35 119	82 740
Asia				
Yemen	7.60	-	18 349	102 379
Afghanistan	6.80	-	21 765	72 267
Occupied Palestinian Terr.	5.60	2048	3 191	11 821
Saudi Arabia	5.54	2043	20 346	59 683
Oman	5.46	2048	2 538	8 751
Maldives	5.37	2043	291	868
Bhutan	5.10	2043	2 085	5 569
Pakistan	5.08	2038	141 256	344 170
Oceania				
Solomon Islands	5.26	2043	447	1 458

NOTE: A missing value indicates that fertility is projected to remain above 2.1 children per woman in 2045-2050 according to the medium variant.

TABLE 1.14. PAST AVERAGE PACE OF DECLINE OF TOTAL FERTILITY IN GROUPS OF COUNTRIES AND EXPECTED PACE OF DECLINE ACCORDING TO THE MEDIUM-FERTILITY VARIANT

Countries grouped according to type of fertility decline and total fertility reached by 1995-2000	*Estimated average reduction of total fertility per decade (children per woman)*	*Projected average reduction of total fertility per decade (children per woman) in the medium variant*
No transition	-	0.88
Decline but TF still > 5	0.62	0.82
Decline to 4 < TF □ 5	0.75	0.65
Decline to 3 < TF □ 4	1.06	0.60
Decline 2.1 < TF □ 3	1.06	0.28
Decline TF □ 2.1	0.90	-
All countries with a late transition	0.87	-
Early transition with 2.1 < TF < 3	0.32	-
Early transition with "baby boom", TF < 2.1	0.48	-
All countries with a decline	0.77	-

1995-2000 were projected to experience an average reduction of about 0.65 children per decade, whereas those with total fertility between 3 and 4 children per woman in 1995-2000 were projected to experience, on average, a reduction of 0.6 children per decade. In both cases, the pace of decline projected was lower than that experienced by the same group of countries in the past, and less rapid that the decline experienced by the developing countries whose fertility has already reached a level of 2.1 children per woman or lower. That is, not only does it seem likely on the basis of past experience that countries that have lagged behind in the fertility transition may emulate those that have preceded them but it is also possible that those countries that are far advanced in the transition to low fertility may experience faster and deeper fertility declines in the future than those embodied by the medium variant.

C. THE FERTILITY TRANSITION AT THE REGIONAL LEVEL

The past and expected future trends in total fertility discussed above at the level of countries or areas translate themselves into clear-cut differentials at the level of major areas and regions. As table I.15 shows, at the world level total fertility remained high until 1965-1970, having ranged between 4.9 and 5.0 children per woman since 1950. Starting in 1970, however, world fertility has been declining at a pace of about half a child per decade, reaching 2.82 children per woman in 1995-2000. When countries are grouped by level of development, it becomes evident that world fertility has been largely determined by trends in the less developed regions where fertility remained at a high level of 6 children per woman until 1970. It is mainly the reduction of fertility in the less developed regions from the 1965-1970 level of 6 children per woman to 3.1 children per woman in 1995-2000 that has led to a decline at the world level. However, the fertility of more developed regions has also declined steadily since 1955: at the level of 1.57 children per woman in 1995-2000, it was about 1.3 children below the high level of 2.84 children per woman reached in the 1950s. The data in table I.15 also indicate that most of the reduction of fertility in less developed regions is attributable to the changes that have taken place in countries that are further advanced in the development path. Thus, whereas by 1995-2000 the least developed countries as a group still exhibited a total fertility of 5.47 children per woman, the rest of the countries in the developing world had, on average, a total fertility of 2.78 children per woman.

At the level of regions, those belonging to the more developed world have been characterized by low fertility, although there have been significant differences among them. Northern America and Australia/New Zealand exhibited until 1965 considerably higher total fertility than any region in Europe (over 3 children per woman versus fewer

TABLE I.15. TOTAL FERTILITY ESTIMATES FOR THE WORLD, MAJOR AREAS AND REGIONS, 1950-1955 TO 1995-2000

Major area and region	*1950-1955*	*1955-1960*	*1960-1965*	*1965-1970*	*1970-1975*	*1975-1980*	*1980-1985*	*1985-1990*	*1990-1995*	*1995-2000*
World	5.01	4.95	4.97	4.90	4.48	3.90	3.56	3.35	3.01	2.82
More developed regions	2.84	2.82	2.68	2.37	2.13	1.91	1.85	1.83	1.69	1.57
Less developed regions	6.16	6.01	6.03	6.01	5.42	4.62	4.12	3.80	3.37	3.10
Least developed countries	6.60	6.65	6.72	6.69	6.60	6.40	6.27	6.01	5.74	5.47
Less developed regions without the least developed countries	6.10	5.93	5.94	5.92	5.27	4.40	3.85	3.52	3.06	2.78
Europe	2.66	2.66	2.58	2.36	2.16	1.97	1.88	1.83	1.58	1.41
Eastern Europe	2.91	2.79	2.43	2.15	2.15	2.08	2.08	2.10	1.60	1.28
Northern Europe	2.32	2.53	2.73	2.46	2.08	1.81	1.81	1.84	1.81	1.67
Southern Europe	2.65	2.65	2.71	2.67	2.54	2.24	1.83	1.57	1.40	1.32
Western Europe	2.39	2.50	2.67	2.45	1.92	1.65	1.61	1.57	1.55	1.49
Northern America	3.47	3.72	3.34	2.54	2.01	1.78	1.80	1.89	2.02	2.00
Oceania	3.87	4.10	4.00	3.57	3.22	2.78	2.59	2.52	2.51	2.41
Australia/New Zealand	3.27	3.53	3.41	2.96	2.59	2.11	1.94	1.90	1.90	1.80
Melanesia	6.29	6.33	6.23	5.99	5.78	5.53	5.11	4.88	4.76	4.39
Micronesia	6.15	6.31	6.38	5.34	4.81	4.21	3.82	3.77	4.08	4.26
Polynesia	6.75	6.92	6.96	6.37	5.46	4.58	4.33	4.13	3.71	3.22
Africa	6.71	6.78	6.84	6.78	6.68	6.56	6.40	6.05	5.61	5.27
Eastern Africa	6.92	6.93	6.97	7.01	7.03	6.99	6.88	6.69	6.34	6.09
Middle Africa	5.91	5.93	6.00	6.12	6.31	6.47	6.59	6.58	6.52	6.41
Northern Africa	6.80	7.01	7.08	6.84	6.34	5.94	5.54	4.83	4.09	3.58
Southern Africa	6.45	6.46	6.46	5.93	5.54	5.14	4.71	4.05	3.48	3.29
Western Africa	6.85	6.89	6.96	7.00	7.03	7.04	6.99	6.73	6.35	5.95
Asia	5.88	5.63	5.64	5.68	5.07	4.17	3.66	3.38	2.95	2.70
Eastern Asia	5.68	5.10	5.16	5.43	4.46	3.13	2.46	2.36	1.88	1.76
South-central Asia	6.08	6.07	6.00	5.86	5.60	5.08	4.79	4.40	3.99	3.58
South-eastern Asia	5.95	6.15	6.09	6.03	5.53	4.91	4.24	3.71	3.24	2.83
Western Asia	6.40	6.28	6.21	5.94	5.62	5.25	4.98	4.72	4.23	3.86
Latin America and the Caribbean	5.89	5.93	5.97	5.55	5.03	4.49	3.86	3.35	2.97	2.69
Caribbean	5.21	5.14	5.47	5.00	4.38	3.62	3.38	3.12	2.72	2.50
Central America	6.87	6.96	6.85	6.77	6.43	5.42	4.49	3.88	3.42	3.04
South America	5.69	5.73	5.76	5.23	4.65	4.28	3.70	3.19	2.83	2.57

NOTE: Major areas and regions are ordered according to development grouping.

than 3 children per woman). In addition, within Europe, Southern Europe and Eastern Europe tended to have higher fertility in the 1950s than Northern Europe and Western Europe. Although all regions in Europe exhibited declining fertility after 1965, Western Europe was the first to exhibit a fertility level below 2 children per woman (1970-1975), followed by Northern Europe (1975-1980) and then by Southern Europe (1980-1985). For Eastern Europe, although below-replacement fertility was first experienced in 1975-1980, a level below 2 children per woman is a more recent phenomenon, dating from 1990-1995 when fertility fell sharply. Fertility continued to decline in Southern Europe and Western Europe even after below-replacement fertility was first reached. Until the mid-1990s, however, fertility levels in Northern Europe remained almost stable once a total fertility below 2 children per woman had set in.

In Northern America, fertility reached below-replacement level in 1970-1975 and in Australia/New Zealand it did so in 1980-1985. Although in the latter region a very small decline occurred at first, it would be more appropriate to characterize recent fertility as stable. In Northern America, in contrast, there has been an increasing trend in total fertility since 1975-1980 even though the level of 2.1 children per woman has not been reached again.

In the less developed regions, only Eastern Asia has reached a total fertility below replacement level largely because of the weight of China and, to a lesser extent, that of Japan and the Republic of Korea, in the regional average. However, below-replacement fertility is a recent phenomenon for Eastern Asia, dating from 1990-1995. Among the other less developed regions, the lowest fertility is exhibited by the Caribbean, with an average of 2.5 children per woman in 1995-2000, followed by South America (2.57 children per woman) and South-eastern Asia (2.83 children per woman). All these regions averaged a reduction of fertility of about 0.8 to 0.9 children per woman per decade if the starting point of the transition is taken as the period in which the highest fertility level estimated during 1950-2000 was attained.

Intermediate levels of fertility characterize six regions in 1995-2000, namely, Central America (3.04 children per woman), Polynesia (3.22 children per woman), Southern Africa (3.29 children per woman), Northern Africa (3.58 children per woman), South-central Asia (3.58 children per woman) and Western Asia (3.86 children per woman). These regions include most of the countries that are still at intermediate stages of the fertility transition. Comparing the maximum total fertility in 1950-1995 to that in 1995-2000, significant differences in the pace of the fertility decline are noticeable among these regions, with Polynesia and Northern Africa experiencing the most rapid pace at about one child per decade, followed by Central America and Southern Africa, each experiencing a reduction ranging between 0.9 children per decade and one child per decade, and then by South-central Asia and Western Asia, with average reductions of about 0.6 children per decade. The diversity of the regions involved and the substantial pace of the decline experienced by each reinforces the view that sharp falls in the level of fertility are possible and compatible with a variety of stages in the development process as well as with different social and cultural settings.

At a somewhat higher level of fertility, Micronesia (4.26 children per woman) and Melanesia (4.39 children per woman) have nevertheless experienced significant fertility reductions. Micronesia, in particular, recorded a decline of over one child per decade.

Lastly, the regions experiencing the highest levels of fertility in 1995-2000 are Middle Africa (6.41 children per woman), Eastern Africa (6.09 children per woman) and Western Africa (5.95 children per woman). In Middle Africa no reduction of fertility is as yet apparent and in the other two regions fertility has fallen by, at most, 0.5 a child per decade. Hence, when future prospects are considered, a sharp decline is expected to take place over the next 50 years in all of these regions. As table I.16 indicates, the medium variant assumes that by 2020-2025 the fertility of Middle Africa will have declined to 4.68 children per woman, whereas that of

TABLE I.16. PROJECTED TOTAL FERTILITY BY MAJOR AREA AND REGION: CONSTANT, HIGH, MEDIUM AND LOW VARIANTS, SELECTED PERIODS

Major area and region	*Constant*			*High*			*Medium*			*Low*		
	2000-2005	*2020-2025*	*2045-2050*	*2000-2005*	*2020-2025*	*2045-2050*	*2000-2005*	*2020-2025*	*2045-2050*	*2000-2005*	*2020-2025*	*2045-2050*
World	2.88	3.27	3.87	2.87	2.83	2.62	2.68	2.39	2.15	2.49	1.96	1.68
More developed regions	1.58	1.61	1.70	1.58	1.92	2.33	1.50	1.65	1.92	1.44	1.40	1.52
Less developed regions	3.14	3.51	4.06	3.13	2.95	2.65	2.92	2.49	2.17	2.70	2.03	1.70
Least developed countries	5.48	5.63	5.90	5.47	4.40	3.02	5.24	3.90	2.51	4.91	3.40	2.02
Less developed regions without the least developed countries	2.81	3.07	3.43	2.80	2.65	2.53	2.59	2.20	2.05	2.39	1.74	1.58
Europe	1.42	1.39	1.43	1.38	1.69	2.20	1.34	1.47	1.81	1.31	1.26	1.41
Eastern Europe	1.28	1.29	1.29	1.20	1.62	2.24	1.17	1.42	1.84	1.14	1.21	1.44
Northern Europe	1.67	1.67	1.69	1.61	1.92	2.34	1.57	1.68	1.94	1.54	1.45	1.54
Southern Europe	1.33	1.36	1.42	1.32	1.64	2.14	1.29	1.43	1.73	1.25	1.21	1.33
Western Europe	1.50	1.51	1.52	1.53	1.82	2.16	1.50	1.59	1.76	1.45	1.36	1.36
Northern America	2.00	2.01	2.01	2.09	2.32	2.48	1.90	1.93	2.08	1.76	1.61	1.68
Oceania	2.46	2.70	3.11	2.50	2.57	2.50	2.39	2.26	2.06	2.27	1.98	1.61
Australia/New Zealand	1.80	1.80	1.80	1.84	2.10	2.43	1.79	1.85	2.03	1.73	1.63	1.63
Melanesia	4.41	4.49	4.58	4.42	3.52	2.60	4.14	3.11	2.10	3.87	2.71	1.60
Micronesia	4.27	4.34	4.31	4.27	3.19	2.59	4.11	2.72	2.09	3.82	2.25	1.59
Polynesia	3.19	3.32	3.45	3.31	2.92	2.59	3.01	2.45	2.09	2.72	1.99	1.59
Africa	5.30	5.50	5.78	5.21	4.10	2.88	4.97	3.64	2.39	4.65	3.17	1.91
Eastern Africa	6.09	6.11	6.21	6.08	4.60	2.99	5.83	4.14	2.51	5.42	3.64	2.02
Middle Africa	6.41	6.46	6.52	6.39	5.16	2.95	6.33	4.68	2.46	6.08	4.20	1.96
Northern Africa	3.58	3.63	3.71	3.44	2.72	2.60	3.13	2.23	2.10	2.80	1.73	1.60
Southern Africa	3.30	3.36	3.45	3.29	2.71	2.60	3.03	2.22	2.10	2.75	1.73	1.60
Western Africa	5.95	6.00	6.07	5.80	4.19	2.85	5.57	3.76	2.36	5.30	3.33	1.87
Asia	2.74	2.99	3.40	2.74	2.64	2.56	2.54	2.19	2.08	2.35	1.73	1.60
Eastern Asia	1.77	1.77	1.78	1.93	2.26	2.30	1.76	1.88	1.90	1.59	1.49	1.50
South-central Asia	3.59	3.67	3.82	3.43	2.83	2.64	3.25	2.33	2.12	3.07	1.82	1.60
South-eastern Asia	2.84	2.91	3.05	2.80	2.59	2.57	2.52	2.11	2.08	2.23	1.62	1.59
Western Asia	3.94	4.40	5.08	3.85	3.42	2.87	3.57	2.97	2.39	3.26	2.51	1.92
Latin America and the Caribbean	2.70	2.79	2.93	2.73	2.65	2.59	2.50	2.16	2.10	2.26	1.67	1.60
Caribbean	2.55	2.82	3.13	2.57	2.61	2.50	2.41	2.19	2.03	2.27	1.75	1.56
Central America	3.06	3.16	3.34	2.98	2.69	2.60	2.76	2.20	2.10	2.54	1.70	1.60
South America	2.58	2.63	2.70	2.65	2.64	2.60	2.41	2.14	2.10	2.15	1.64	1.60

NOTE: Major areas and regions are ordered according to development grouping.

Eastern Africa and Western Africa will be 4.14 and 3.76 children per woman, respectively.

For most of the other less developed regions, the medium variant assumptions yield a total fertility by 2020-2025 that is already close to replacement level (varying from 2.1 to 2.5 children per woman). Only Western Asia with 2.97 children per woman, Melanesia with 3.11 children per woman, and Micronesia with 2.72 children per woman are expected to experience relatively high fertility by that date. In addition, the total fertility of Eastern Asia is expected to have risen to close to 1.9 children per woman, the level that it will retain to the end of the projection period.

In the more developed regions, fertility in the medium variant will have already reached 1.9 children per woman by 2020-2025 in Northern America and Australia/New Zealand, but the other regions of Europe will generally not reach that level even by 2045-2050. According to the high variant, Northern America and Oceania will reach a total fertility level higher than 2.1 children per woman by 2020-2025, whereas total fertility in all European regions remains below that level. By 2045-2050, all the more developed regions will experience total fertility levels ranging between 2.14 (Southern Europe) and 2.48 children per woman (Northern America) in the high variant. In the low variant, the eventual total fertility reached by the more developed regions varies between 1.33 children per woman in Southern Europe and 1.68 children per woman in Northern America by 2045-2050.

D. THE FERTILITY CONTRIBUTION TO POPULATION GROWTH

Since 1970, the declining level of world total fertility has been the key determinant of the slowing pace of population increase. However, because of the built-in inertia of population growth when fertility has remained high for long periods, reductions of fertility do not translate themselves immediately into equivalent reductions in the number of births or of the birth rate. Indeed, owing to high fertility in the past, the size of female cohorts of reproductive age when the transition to lower fertility starts is usually large. Even though each woman has fewer children on average than women of the previous generation, the total number of births to women experiencing the transition will almost certainly surpass that to women in the previous, no-transition stage. Consequently, the number of births will continue to rise long after fertility decline takes hold. Thus, the number of births in the world as a whole rose more or less steadily from 1950-1955 to 1985-1990 and started to decline in 1990-1995, a full 20 years after the transition to low fertility began (see table I.17). The trend at the world level parallels that of the less developed regions, where the number of births rose by nearly 50 per cent between 1950-1955 and 1995-2000, and where a slight reduction was first noticeable in 1990-1995. In the more developed regions a decline set in by 1960. Since then the number of births per quinquennium has been dropping steadily, so that by 1995-2000 the 66 million births occurring in the more developed regions were about one-third less than the highest quinquennial level of 95 million births observed during the 1955-1960 period. In the less developed regions the number of births occurring in 1950-1955 accounted for 81 per cent of the 495 million births in the world and increased to 90 per cent of the world total (660 million) by 1995-2000.

Among the major areas, the highest proportion of births in the world can be observed in Asia, so that trends in the number of births in Asia tend to determine those observed at the higher levels of aggregation. Thus, among the less developed major areas, only Asia has experienced a reduction in the number of births in recent years (see table I.17). In Africa, the number of births per quinquennium has continued to rise, whereas the same indicator remained largely stable in Latin America and the Caribbean between 1980-1985 and 1995-2000. In the more developed regions, Europe, which accounts for the highest number of births in the more developed world, was the only major area experiencing a steady decline in the number of births since 1955-1960. In Northern America a parallel decline came to a halt in 1980-1985 when the number of births per quinquennium increased and remained at a level as high as the one measured in 1950-1955. A similar observation can be made for Oceania where the same indicator has been rising

TABLE I.17. ESTIMATED NUMBER OF BIRTHS PER QUINQUENNIUM FOR THE WORLD AND MAJOR AREAS, 1950-2000
(Millions)

Major area	*1950-1955*	*1955-1960*	*1960-1965*	*1965-1970*	*1970-1975*	*1975-1980*	*1980-1985*	*1985-1990*	*1990-1995*	*1995-2000*
World	495	516	562	592	599	596	633	673	664	660
More developed regions	94	95	93	85	83	80	80	79	72	66
Less developed regions	401	422	469	507	516	516	553	594	592	594
Europe	60	61	59	55	52	51	50	49	42	37
Northern America	22	24	24	21	19	19	20	22	22	22
Oceania	2	2	2	2	2	2	2	3	3	3
Africa	57	63	71	79	89	100	113	124	133	145
Asia	316	323	357	385	384	368	389	418	406	396
Latin America and the Caribbean	38	42	48	51	54	57	58	58	58	58

NOTE: Major areas are ordered according to development grouping.

and remained almost unchanged since the mid-1980s.

In terms of future expectations, table I.18 shows that the low variant produces a steadily declining number of births at the world level, whereas in the medium variant the number of births increases until 2020-2025 and declines thereafter. Under the low variant, the number of births in 2045-2050 is significantly lower than at the beginning of the projection period (about 30 per cent less), whereas the medium variant produces a figure in 2045-2050 that is only slightly higher than that projected for 2000-2005. The high variant, in contrast, projects a steadily increasing number of births and yields in 2045-2050 a quinquennial total that is almost 40 per cent higher than that for 2000-2005. These differences are significant not only because of their magnitude but also because of what they imply about the possible long-term future of population dynamics. Indeed, the three projection variants lead to very different types of populations in the long run. The low variant produces a declining population with a negative growth rate, the high variant produces a population that is steadily growing at a positive rate of increase, and the medium variant comes closer than the others to producing a population that is experiencing zero growth. Hence, the trend followed by the number of births in the medium variant suggests that, if the world population eventually reaches and maintains a state of equilibrium in which the population neither increases nor declines, the number of births is likely to remain at about 660 million per quinquennium.

At the regional level, the number of births in the less developed regions follows a trend similar to that of the world as a whole, since births in less developed regions account for 90 per cent of all births in the world in all projection variants. The number of births in the more developed regions as a whole declines steadily in the low variant, remains almost stable in the medium variant, and increases moderately in the high variant (see table I.18). With the exception of Africa, where the number of births increases for relatively lengthy periods in the low and medium variants, and Northern America, where it increases steadily at a low rate in the medium variant and stays almost stable in the low variant, declining trends characterize all the other major areas of the world in the low and medium variants. That is, Africa's growth potential is still so high that even with the sharp reductions of fertility envisaged by the low variant, the number of births keeps on increasing until 2020-2025. Although the number of births in Africa increases in the medium variant until 2040-2045, the number of births at the global level increases only until 2020-2025. In the high variant, the number of births increases in all major areas. The different trends exhibited by the number of births in the major areas result in a redistribution of births by major area as time elapses. In particular, the share of Asia declines in all projection variants, accounting for 58 per cent

TABLE I.18. PROJECTED NUMBER OF BIRTHS PER QUINQUENNIUM FOR THE WORLD AND MAJOR AREAS: LOW, MEDIUM AND HIGH VARIANTS, 2000-2050
(*Millions*)

Major area	*2000-2005*	*2005-2010*	*2010-2015*	*2015-2020*	*2020-2025*	*2025-2030*	*2030-2035*	*2035-2040*	*2040-2045*	*2045-2050*
					Low variant					
World	614	588	572	561	547	519	487	462	442	419
More developed regions	60	56	53	52	51	49	47	45	43	42
Less developed regions	555	532	519	509	496	470	440	417	399	377
Europe	33	30	28	27	26	24	23	21	20	19
Northern America	19	19	19	19	19	19	19	18	18	19
Oceania	3	3	3	3	3	3	2	2	2	2
Africa	148	153	159	163	164	160	153	147	141	132
Asia	359	335	318	305	293	273	253	238	227	216
Latin America and the Caribbean	52	48	46	44	42	39	37	35	33	31
					Medium variant					
World	662	672	679	681	682	678	674	673	672	665
More developed regions	62	61	61	61	60	60	59	60	61	61
Less developed regions	599	611	618	621	622	619	615	613	612	604
Europe	34	33	32	31	30	29	28	28	28	28
Northern America	21	21	22	23	24	24	25	25	26	27
Oceania	3	3	3	3	3	3	3	3	3	3
Africa	158	168	177	185	191	195	196	196	196	192
Asia	389	389	388	383	378	371	367	365	364	361
Latin America and the Caribbean	58	58	57	57	56	56	55	55	55	55
					High variant					
World	707	746	779	801	821	848	881	916	949	973
More developed regions	66	68	69	70	70	72	75	78	82	84
Less developed regions	641	678	710	731	751	776	806	838	867	889
Europe	35	35	35	35	34	34	34	36	37	38
Northern America	23	25	26	28	29	30	32	34	36	38
Oceania	3	3	3	3	3	4	4	4	4	4
Africa	165	180	194	206	218	229	239	249	257	262
Asia	419	436	452	460	466	478	495	514	531	545
Latin America and the Caribbean	63	67	68	69	71	74	77	80	82	85

NOTE: Major areas are ordered according to development grouping.

of all births in 2000-2005 but only for 52 per cent by 2045-2050 in the low variant, 54 per cent in the medium variant and 56 per cent in the high variant. In contrast, the share of Africa rises in all variants, accounting for nearly 24 per cent of all births in 2000-2005 but increasing to 32 per cent in the low variant, 29 per cent in the medium variant and 27 per cent in the high variant by 2045-2050.

The crude birth rate, which is the average number of births in a year divided by the mid-year population and expressed per 1,000 people, provides a crude measure of fertility. Although this indicator does not take into account which people in the population are actually at risk of having births and what age structure the population has, it provides some control for population size. Compared to the

total number of births, the crude birth rate is therefore less affected by changes in the size of the cohorts bearing children. As table I.19 shows, the crude birth rate at the world level and for the more and less developed regions has been declining steadily since 1950. Even at the level of major areas, the crude birth rate dropped consistently during most of the 1950-2000 period. Nonetheless, although declining trends have characterized all major areas, the speed of the decline has been quite different among them, with the result that differentials between the major areas, particularly those in the developing world, have increased. Thus, whereas in 1950-1955 Africa, Asia and Latin America were all experiencing crude birth rates above 40 births per 1,000 people, by 1995-2000 only Africa had a birth rate near that range (38.7 births per 1,000). Birth rates for Asia as well as for Latin America and the Caribbean had fallen by about 50 per cent between 1950-1955 and 1995-2000. For Oceania the reduction was less sharp, but the 1995-2000 crude birth rate for that major area was more than 30 per cent below the value estimated for 1950-1955. A similar reduction was experienced by Northern America, where the crude birth rate was cut by 42 per cent between the two periods. Europe also experienced a sharp decline, with its crude birth rate, which was already the lowest in the world in 1950-1955, dropping to just 10.1 births per 1,000 in 1995-2000, a reduction of more than 50 per cent. Such changes imply that by 1995-2000, Africa had a crude birth rate that was about 70 per cent higher than the one estimated for Asia or Latin America and the Caribbean; nearly double that of Oceania, and almost four times that of Europe.

All projection variants presented in table I.20 result in a steady reduction of the birth rate for the world and the less developed regions over the course of the first half of the twenty-first century. For the more developed regions, only the high variant produces a rise in the birth rate between 2000-2005 and 2045-2050. This increase reflects the fact that the birth rates of both Northern America and Europe, though fluctuating during 2000-2050, also experience a moderate overall increase during the period. But perhaps more noteworthy is the fact that even in the high variant, the birth rates of Africa, Asia and Latin America and the Caribbean experience a substantial reduction, with that of Africa dropping by almost 40 per cent between 2000-2005 and 2045-2050, and those of Asia and Latin America and the Caribbean declining by slightly less than a quarter. In Oceania the decline is more moderate because the regional average is affected by both the rising trend experienced by Australia and New Zealand and by the declining trends of the developing countries in that major area.

Birth rates for all major areas decline steadily according to the low and medium variants, as shown in table I.20. The sharpest reductions in the crude birth rate can be observed for Africa, where this measure declines by 47 per cent in the medium variant and by 55 per cent in the low variant be-

TABLE I.19. CRUDE BIRTH RATE ESTIMATES FOR THE WORLD AND MAJOR AREAS, 1950-2000

Major area	*1950-1955*	*1955-1960*	*1960-1965*	*1965-1970*	*1970-1975*	*1975-1980*	*1980-1985*	*1985-1990*	*1990-1995*	*1995-2000*
World	37.5	35.8	35.4	33.7	30.9	28.0	27.3	26.7	24.3	22.5
More developed regions	22.4	21.3	19.7	17.3	16.2	14.9	14.5	13.9	12.3	11.2
Less developed regions	44.6	42.2	41.9	40.1	36.2	32.4	31.3	30.4	27.6	25.4
Europe	21.5	20.8	19.1	16.9	15.7	14.8	14.3	13.7	11.5	10.1
Northern America	24.6	24.6	22.4	18.2	15.7	15.1	15.6	15.8	15.5	14.2
Oceania	27.5	27.2	26.5	24.4	23.8	20.9	20.3	20.0	19.8	18.2
Africa	49.0	48.5	48.3	47.3	46.5	45.6	44.8	42.7	40.3	38.7
Asia	43.0	39.9	39.7	38.1	33.8	29.3	28.2	27.6	24.7	22.3
Latin America and the Caribbean	42.0	41.4	40.9	38.0	35.4	33.2	30.2	27.6	25.1	23.1

NOTE: Major areas are ordered according to development grouping.

TABLE I.20. PROJECTED CRUDE BIRTHRATE FOR THE WORLD AND MAJOR AREAS: LOW, MEDIUM AND HIGH VARIANTS, 2000-2050

Major area	*2000-2005*	*2005-2010*	*2010-2015*	*2015-2020*	*2020-2025*	*2025-2030*	*2030-2035*	*2035-2040*	*2040-2045*	*2045-2050*
					Low variant					
World	19.7	18.0	16.7	15.8	14.9	13.7	12.6	11.8	11.2	10.6
More developed regions	10.0	9.3	8.9	8.8	8.5	8.3	8.0	7.8	7.8	7.8
Less developed regions	22.1	19.9	18.4	17.2	16.1	14.7	13.5	12.5	11.8	11.1
Europe	9.2	8.5	8.1	7.9	7.7	7.4	7.1	6.9	6.8	6.8
Northern America	12.0	11.3	10.8	10.9	10.6	10.3	9.9	9.6	9.6	9.6
Oceania	16.5	15.7	15.1	14.4	13.7	12.9	12.0	11.1	10.4	10.3
Africa	35.3	33.0	31.0	29.1	26.8	24.2	21.6	19.6	17.8	15.8
Asia	19.0	16.9	15.3	14.2	13.3	12.1	11.1	10.3	9.9	9.5
Latin America and the Caribbean	19.6	17.1	15.6	14.3	13.2	12.1	11.2	10.4	9.9	9.5
					Medium variant					
World	21.2	20.3	19.3	18.4	17.6	16.7	16.0	15.4	15.0	14.4
More developed regions	10.4	10.1	10.0	10.0	9.9	9.8	9.8	9.9	10.1	10.3
Less developed regions	23.7	22.5	21.3	20.1	19.0	18.0	17.1	16.3	15.7	15.1
Europe	9.4	9.1	9.0	8.9	8.7	8.6	8.6	8.7	8.9	9.1
Northern America	12.9	12.6	12.6	12.6	12.5	12.3	12.3	12.3	12.4	12.5
Oceania	17.3	16.7	16.3	15.9	15.4	14.9	14.2	13.7	13.2	13.3
Africa	37.4	35.7	33.6	31.6	29.5	27.4	25.2	23.3	21.6	19.8
Asia	20.5	19.3	18.2	17.1	16.2	15.3	14.6	14.1	13.8	13.4
Latin America and the Caribbean	21.5	20.0	18.7	17.5	16.5	15.7	15.0	14.5	14.1	13.7
					High variant					
World	22.5	22.2	21.7	20.9	20.2	19.6	19.3	19.0	18.7	18.2
More developed regions	11.0	11.2	11.3	11.3	11.3	11.4	11.8	12.3	12.7	13.0
Less developed regions	25.3	24.7	23.9	22.8	21.8	21.1	20.5	20.0	19.5	19.0
Europe	9.6	9.8	9.9	9.8	9.7	9.7	10.1	10.6	11.2	11.4
Northern America	14.2	14.5	14.8	14.8	14.7	14.7	15.0	15.3	15.5	15.6
Oceania	18.1	17.8	17.6	17.5	17.2	16.9	16.6	16.3	16.1	16.4
Africa	38.9	37.7	36.0	33.9	32.0	30.2	28.4	26.8	25.2	23.6
Asia	22.0	21.4	20.7	19.8	18.9	18.4	18.1	17.9	17.6	17.3
Latin America and the Caribbean	23.3	22.8	21.7	20.5	19.6	19.2	18.8	18.5	18.2	17.9

NOTE: Major areas are ordered according to development grouping.

tween 2000-2005 and 2045-2050. The equivalent reductions for Asia were 35 per cent and 36 per cent for Latin America and the Caribbean. In the medium variant, Oceania was expected to see its birth rate cut by 23 per cent while Northern America and Europe will likely have their birth rates cut by about 3 per cent each.

With regard to population growth under the medium variant, positive growth will still prevail. Only Europe, with a birth rate of 9.1 births per 1,000 in 2045-2050 in the medium variant, will be experiencing a negative population growth rate at the end of the projection period (see tables V.6. to V.8 in chapter V). However, for all regions, reductions in

the crude birth rate are sharper in the low variant where the birth rate for Europe, for example, declines from 9.2 births per 1,000 in 2000-2005 to 6.8 births per 1,000 in 2045-2050, a decline of slightly less than a third. By 2045-2050, the sharp reductions implied by the low variant produce for many regions birth rate levels that have until recently been rare among human populations: levels that, despite the low mortality to which the population is subject at the time, are insufficient to ensure positive population growth. Under the low-fertility assumption, only Africa, Northern America, and Oceania will be experiencing positive population growth by 2045-2050.

In terms of countries, the effects of fertility decline on population growth are varied since, as documented in previous sections, different groups of countries follow distinct paths to low fertility. Figure I.1 shows the distribution of countries according to their birth rates at different times. The graph shows that in 1950-1955, a majority of countries (114) had a birth rate of 40 births per 1,000 or higher, whereas only 16 countries had a birth rate ranging between 10 and 20 births per 1,000 and none had a birth rate below 10 births per 1,000. By 1995-2000, the most recent period with estimates available, the number of countries with a birth rate of 40 births per 1,000 or above had declined to 32 and there were 72 countries with birth rates below 20 births per 1,000 (15 with birth rates below 10 births per 1,000). By 2050, according to the medium variant, the majority of countries in the world will be in the latter two categories: 140 will have a birth rate ranging from 10 to 20 births per 1,000, 31 will experience crude birth rates from 0 to 10 births per 1,000, whereas just 15 will be in the group of countries with crude birth rates of 20 to 30 births per 1,000, and one country (Niger) will have a crude birth rate between 30 and 40 births per 1,000.

The 15 countries with the highest and lowest birth rates at different periods are displayed in table I.21. Since the 1950s, countries in Africa have predominated among those having the highest birth rates. In 1950-1955, Guatemala, Honduras and Nicaragua in Central America, and Yemen and Afghanistan in Asia also exhibited very high birth rates. By 1995-

Figure I.1. Distribution of countries according to the level of the birth rate at different periods, medium variant

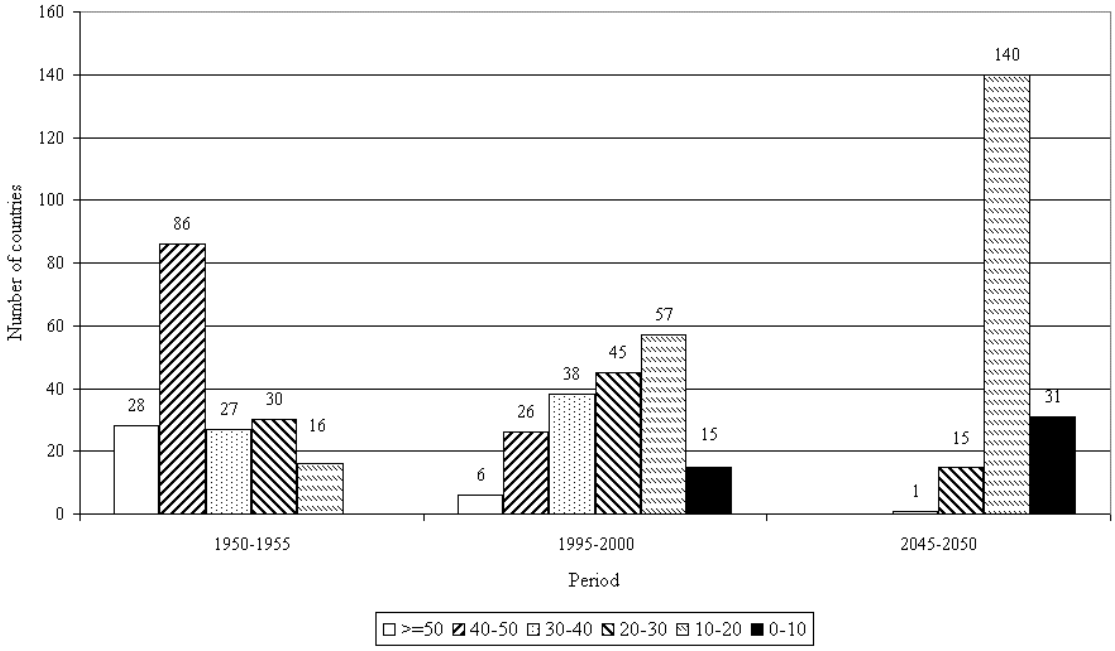


TABLE I.21. COUNTRIES OR AREAS WITH THE HIGHEST AND LOWEST BIRTH RATES IN THE WORLD FOR SELECTED PERIODS, MEDIUM-FERTILITY VARIANT

	Country or area	*1950-1955*	*Country or area*	*1995-2000*	*Country or area*	*2045-2050*
1	Niger	57.7	Niger	55.4	Niger	30.4
2	Guinea	54.7	Somalia	52.3	Angola	28.1
3	Nicaragua	54.2	Yemen	51.4	Somalia	27.7
4	Somalia	53.4	Angola	51.0	Yemen	27.6
5	Afghanistan	53.1	Uganda	50.4	Uganda	25.0
6	Mali	53.0	Liberia	50.1	Mali	24.4
7	Côte d'Ivoire	52.8	Mali	49.9	Burkina Faso	24.2
8	Honduras	52.8	Sierra Leone	49.5	Burundi	23.7
9	Western Sahara	52.6	Chad	48.4	Liberia	23.5
10	Malawi	52.3	Dem. Rep. of the Congo	47.7	Ethiopia	23.1
11	Yemen	52.2	Afghanistan	47.6	Malawi	23.0
12	Ethiopia	52.0	Malawi	47.2	Afghanistan	22.8
13	Kenya	51.5	Burkina Faso	46.7	Sierra Leone	21.8
14	Guatemala	51.3	Guinea	45.7	Dem. Rep. of the Congo	21.3
15	Madagascar	51.2	Guinea-Bissau	44.8	Chad	21.0
1	Greece	19.4	Sweden	10.0	Russian Federation	8.7
2	Czech Republic	19.4	Hungary	9.8	China, Macao SAR	8.6
3	Norway	18.7	Japan	9.8	Greece	8.5
4	Italy	18.3	Greece	9.5	Slovakia	8.4
5	Denmark	17.9	Germany	9.3	Channel Islands	8.4
6	Switzerland	17.3	Belarus	9.2	Bosnia and Herzegovina	8.2
7	Estonia	17.3	Spain	9.2	Switzerland	8.2
8	Belgium	16.7	Italy	9.1	Ukraine	8.2
9	Latvia	16.4	Slovenia	9.1	Slovenia	8.1
10	Germany	16.0	Ukraine	8.9	Germany	8.0
11	United Kingdom	15.9	Czech Republic	8.8	Japan	7.9
12	Sweden	15.5	Russian Federation	8.8	Armenia	7.8
13	Austria	15.0	Estonia	8.7	Austria	7.5
14	Luxembourg	14.7	Bulgaria	8.0	Spain	7.1
15	Channel Islands	14.6	Latvia	7.7	Italy	7.1

2000, Afghanistan and Yemen were the only non-African countries appearing in the list of those with the highest birth rates. Except for those two countries in Asia, African countries will continue to dominate this list fifty year later, although birth rates will have dropped dramatically, being "high" at levels ranging in value from 20 to 30 births per 1,000 instead of levels above 50 births per 1,000 that are still common today.

At the other end of the spectrum, the countries with the lowest birth rates have always been largely concentrated in Europe. Nonetheless, as time has elapsed, the Western European and Northern European countries that used to belong to the list have largely given way to countries in Eastern Europe and Southern Europe. Japan was the only country in Asia that was part of the group of low birth-rate countries in 1995-2000. By the end of the projection period, a total of three Asian countries or areas—Armenia, Japan and Macao SAR—will be among the 15 countries experiencing the lowest birth rates in the world.

In conclusion, it is worth noting that the countries showing the highest birth rates are not necessarily those responsible for most of the births in the world. Table I.22 shows the list of countries that

TABLE I.22. COUNTRIES ACCOUNTING FOR 75 PER CENT OF THE ANNUAL NUMBER OF BIRTHS IN THE WORLD DURING 1950-1955, 1995-2000 AND 2045-2050, MEDIUM VARIANT
(Thousands)

	Country	*1950-1955*		*Country*	*1995-2000*		*Country*	*2045-2050*
1	China	25 468	1	India	25 380	1	India	21 292
2	India	17 066	2	China	20 206	2	China	15 606
3	United States of America	3 993	3	Pakistan	5 017	3	Pakistan	5 719
4	Indonesia	3 547	4	Indonesia	4 614	4	Nigeria	4 974
5	Russian Federation	2 832	5	Nigeria	4 441	5	United States of America	4 958
6	Brazil	2 572	6	Bangladesh	4 105	6	Indonesia	4 211
7	Bangladesh	2 110	7	United States of America	3 997	7	Dem. Rep. of the Congo	4 169
8	Japan	2 052	8	Brazil	3 348	8	Ethiopia	4 147
9	Pakistan	1 862	9	Ethiopia	2 637	9	Bangladesh	3 914
10	Nigeria	1 580	10	Mexico	2 338	10	Brazil	3 317
11	Mexico	1 346	11	Dem. Rep. of the Congo	2 283	11	Yemen	2 664
12	Viet Nam	1 225	12	Philippines	2 048	12	Uganda	2 421
13	Turkey	1 134	13	Egypt	1 700	13	Mexico	1 927
14	Egypt	1 131	14	Viet Nam	1 624	14	Philippines	1 754
15	Germany	1 106	15	Iran (Islamic Republic of)	1 587	15	Viet Nam	1 684
16	Philippines	1 042	16	Turkey	1 504	16	Iran (Islamic Republic of)	1 671
17	Ethiopia	1 010	17	United Republic of Tanzania	1 334	17	Afghanistan	1 592
18	Ukraine	982	18	Russian Federation	1 286	18	Egypt	1 564
19	Thailand	938	19	Japan	1 232	19	Niger	1 488
20	Italy	877	20	Myanmar	1 218	20	United Republic of Tanzania	1 433
			21	Thailand	1 189	21	Angola	1 424
			22	South Africa	1 112	22	Turkey	1 316
			23	Uganda	1 094	23	Somalia	1 077
			24	Sudan	1 064	24	Burkina Faso	1 071
			25	Kenya	1 025	25	Sudan	995
			26	Colombia	987	26	Colombia	977
						27	Mali	975
						28	Saudi Arabia	945

had the highest number of births and accounted for 75 per cent of all the births in the world in 1950-1955, 1995-2000 and 2045-2050. As the lists indicate, countries with large populations are major contributors to the total number of births even when their fertility is low (e.g., Japan, the Russian Federation or the United States of America). In fact, despite having a total fertility below replacement level in 1995-2000, the annual number of births that China experienced during the period was second only to that of India. Table I.22 shows that as the transition to low fertility becomes widespread, more countries are needed to account for 75 per cent of all births in the world. However, even at the universally low levels of fertility projected under the medium variant, only 28 countries are expected to be the cradle for three quarters of all children born in 2045-2050.

E. AGE PATTERNS OF FERTILITY

At present, just as countries are divided into distinct groups according to the level of fertility they have reached, they also exhibit distinct patterns of fertility by age. In countries with high fertility, childbearing usually starts earlier than among countries with low fertility and it continues during most of a woman's reproductive life so that fertility rates

at advanced ages (over 35) remain high. In low-fertility countries, childbearing tends to be more concentrated over a shorter span of a woman's life so that fertility rates at ages over 35 are low. As table I.23 shows, the age-specific fertility rates of the least developed countries conform well to the pattern of relatively early and prolonged childbearing. This pattern is even more obvious in table I.24 and figure I.2, where the distribution of childbearing over the different age groups is presented. The numbers in table I.24 represent the percentage distribution of total fertility by age. They are plotted in figure I.2 for the major development groups. As the figure shows, a clear difference exists between the pattern of childbearing in 2000-2005 in the least developed countries and that prevalent in the more developed regions. In the least developed countries, about 12 per cent of childbearing takes place at young ages (15-19); 47 per cent is concentrated in the age span 20-29; nearly 19 per cent occurs in ages 30-34; and still over 20 per cent occurs at age 35 or above. In contrast, in more developed regions, fertility at ages 15-19 accounts for about 9 per cent of childbearing, 56 per cent of childbearing occurs at ages 20-29, 24 per cent at ages 30-34 and just about 11 per cent at age 35 or higher. That is, childbearing is more concentrated in ages 20-34 among the populations of more developed countries than it is among those in the least developed countries.

The less developed regions without the least developed countries display a third pattern of fertility by age. They show markedly earlier childbearing over the age span 20-29, with 65 per cent of childbearing concentrated in this specific age range; and a smaller proportion of childbearing at ages 30-34 (16 per cent) than the more developed regions (24 per cent). This pattern tends to dominate when all less developed regions are considered together and is also a very strong determinant of the world average (figure I.3).

Africa and all its regions have a pattern similar to that described for the least developed countries, with relatively high proportions of childbearing in the 15-19 age group and in ages 35-49, and a fairly flat distribution of the remaining percentage among the age groups covering the 20 to 29 age interval. It is noteworthy that particularly in Middle Africa a high proportion of childbearing is concentrated in the teenage years, whereas Northern Africa and Eastern Africa exhibit a smaller proportion in this age group.

Western Asia and Melanesia exhibit a slight variation of the pattern prevalent in Africa. In these two regions the proportion of childbearing at ages 35-49 is close to or higher than 20 per cent, though the share corresponding to the teenage years is lower than in the African regions. Furthermore, the distribution of the bulk of childbearing among the central age groups tends to be fairly even.

The pattern of fertility in South-eastern Asia, Polynesia, and Micronesia bears strong resemblance to that in the regions just mentioned, although the percentage distribution in the age range 35-49 is lower than for Western Asia and Melanesia. Similar or lower proportions in that age range characterize the regions of Latin America and the Caribbean, although in all these regions the share of total fertility among teenagers (aged 15-19) is high and there is a marked tendency for childbearing to be more concentrated in the age group 20-24 than at later ages. Consequently, the regions of Latin America and the Caribbean follow a pattern closer to that of the less developed countries that exclude the least developed ones. South-central Asia provides an even more representative example of this pattern, with a concentration of 63 per cent of total fertility in the 20-29 age range, especially in the age group 20-24.

Eastern Asia displays a very distinct pattern, largely as a result of the influence of China's population on the regional average. Fully 80 per cent of total fertility occurs between the ages 20 and 29, and fertility among teenagers is exceptionally low (1.4 per cent) as is that among older women (4.5 per cent in ages 35-49). Similarly low shares of teenage and older-age fertility are generally not found among the more developed regions. Thus, in Northern America and Eastern Europe, fertility at ages 15-19 accounts for 12 to 13 per cent of the total, and although in Eastern Europe the share of fertility at advanced ages (35 or over) is fairly low (about 6.0 per cent), it is still higher than in Eastern Asia.

TABLE I.23. AGE-SPECIFIC FERTILITY RATES FOR MAJOR AREAS AND REGIONS, 2000-2005 AND 2045-2050, MEDIUM-FERTILITY VARIANT

Major area and region	2000-2005								2045-2050							
	15 -19	*20-24*	*25 - 29*	*30 - 34*	*35 - 39*	*40 - 44*	*45 - 49*	*Total fertility*	*15 -19*	*20-24*	*25 - 29*	*30 - 34*	*35 - 39*	*40 - 44*	*45 - 49*	*Total fertility*
World	49.8	169.1	160.3	92.8	44.1	16.0	4.5	2.7	33.3	138.5	139.0	77.4	32.4	8.0	1.0	2.1
More developed regions	26.5	74.3	93.7	72.6	28.2	4.8	0.2	1.5	16.0	70.4	131.4	115.4	44.6	6.8	0.2	1.9
Less developed regions	53.6	186.5	173.7	97.2	48.1	19.4	6.0	2.9	35.1	145.9	139.8	72.9	30.9	8.1	1.1	2.2
Least developed countries	126.9	244.8	251.7	197.9	134.0	65.1	28.0	5.2	48.7	142.9	157.7	94.2	44.8	12.6	1.7	2.5
Less developed regions without the least developed countries	40.1	176.5	161.9	84.2	37.9	14.1	3.6	2.6	29.6	147.0	133.5	65.9	26.8	6.9	0.9	2.1
Europe	21.1	69.9	84.6	63.8	25.0	4.2	0.2	1.3	7.1	56.3	124.9	117.9	48.5	6.3	0.1	1.8
Eastern Europe	30.5	87.8	68.0	33.9	11.8	2.2	0.1	1.2	14.0	86.0	140.3	96.8	28.9	2.7	0.0	1.8
Northern Europe	19.8	61.4	99.3	88.4	38.3	6.6	0.3	1.6	3.1	41.1	124.4	143.3	67.2	9.4	0.1	1.9
Southern Europe	10.9	49.1	86.2	75.1	30.2	5.2	0.3	1.3	5.3	47.1	115.2	118.7	52.7	7.2	0.1	1.7
Western Europe	9.2	53.3	108.0	89.1	33.9	5.4	0.2	1.5	2.2	34.8	111.6	131.8	62.4	8.8	0.1	1.8
Northern America	45.9	99.2	109.8	83.2	34.3	6.5	0.3	1.9	27.4	90.2	138.3	111.3	41.2	7.9	0.4	2.1
Oceania	38.9	106.4	135.9	118.7	56.8	16.8	3.6	2.4	30.4	86.5	120.0	105.1	50.5	15.3	3.2	2.1
Australia/New Zealand	20.6	62.7	111.7	107.6	46.2	8.1	0.3	1.8	22.9	71.0	127.3	122.6	52.5	9.2	0.4	2.0
Melanesia	77.9	207.3	205.6	157.4	99.3	58.2	22.0	4.1	41.1	107.7	108.2	78.1	47.9	27.5	9.7	2.1
Micronesia	77.9	227.7	223.8	159.6	90.0	32.6	10.7	4.1	39.6	120.4	129.4	79.3	38.1	10.7	1.3	2.1
Polynesia	52.7	166.4	161.9	125.1	67.7	25.3	3.8	3.0	38.0	111.9	108.2	88.0	50.5	18.2	2.5	2.1
Africa	107.7	235.0	246.6	189.1	126.9	62.8	26.4	5.0	41.7	142.8	153.4	88.2	40.2	10.8	1.2	2.4
Eastern Africa	112.5	253.7	273.2	225.1	166.1	89.4	45.6	5.8	40.2	137.5	158.0	102.5	47.2	13.5	2.2	2.5
Middle Africa	203.7	300.6	275.0	225.9	157.3	82.2	21.7	6.3	61.3	149.7	148.2	79.2	41.0	11.7	0.6	2.5
Northern Africa	33.8	150.7	195.0	137.0	74.3	28.8	6.0	3.1	18.0	113.6	153.6	91.3	36.0	7.0	0.4	2.1
Southern Africa	73.2	153.0	160.3	111.8	71.9	27.7	8.3	3.0	44.9	124.7	135.7	72.1	34.3	8.3	0.0	2.1
Western Africa	122.9	272.0	269.3	202.9	139.8	71.6	34.4	5.6	39.6	157.5	152.6	77.3	34.7	9.7	1.1	2.4
Asia	35.4	177.4	163.0	82.4	34.8	12.3	3.0	2.5	27.4	149.6	138.1	67.1	26.0	6.2	0.8	2.1
Eastern Asia	5.0	142.1	138.9	50.0	11.0	3.5	1.3	1.8	5.4	153.1	150.7	53.8	12.0	3.8	1.4	1.9
South-central Asia	54.0	222.9	187.3	109.9	52.2	18.4	4.5	3.2	33.7	161.2	129.0	67.5	27.2	5.3	0.0	2.1
South-eastern Asia	42.5	134.7	156.4	97.3	53.1	16.8	2.3	2.5	34.3	117.9	145.1	77.5	33.9	7.2	0.0	2.1
Western Asia	53.6	176.6	192.6	147.0	92.9	37.8	12.9	3.6	42.3	128.9	139.2	91.2	53.2	18.8	5.2	2.4
Latin America and the Caribbean	71.3	143.9	128.8	86.6	48.7	17.3	3.2	2.5	60.6	122.5	108.5	71.5	39.7	13.8	2.5	2.1
Caribbean	68.2	137.1	129.0	82.7	45.3	15.8	3.1	2.4	54.0	103.5	108.9	75.2	44.4	15.9	3.5	2.0
Central America	75.5	155.3	138.5	97.9	59.9	20.9	4.0	2.8	59.0	121.3	105.8	73.1	43.5	14.7	2.6	2.1
South America	69.9	139.9	124.7	82.4	45.0	16.2	2.9	2.4	61.8	124.8	109.5	70.6	37.7	13.3	2.3	2.1

NOTE: Major areas are ordered according to development grouping.

TABLE I.24. PERCENTAGE DISTRIBUTION OF AGE-SPECIFIC FERTILITY RATES FOR MAJOR AREAS AND REGIONS, 2000-2005 AND 2045-2050, MEDIUM-FERTILITY VARIANT

Major area and region	*2000-2005*								*2045-2050*							
	15 -19	*20-24*	*25 - 29*	*30 - 34*	*35 - 39*	*40 - 44*	*45 - 49*	*35-49*	*15 -19*	*20-24*	*25 - 29*	*30 - 34*	*35 - 39*	*40 - 44*	*45 - 49*	*35-49*
World	9.3	31.5	29.9	17.3	8.2	3.0	0.8	12.0	7.8	32.3	32.4	18.0	7.5	1.9	0.2	9.6
More developed regions	8.8	24.7	31.2	24.2	9.4	1.6	0.1	11.1	4.2	18.3	34.1	30.0	11.6	1.8	0.1	13.4
Less developed regions	9.2	31.9	29.7	16.6	8.2	3.3	1.0	12.6	8.1	33.6	32.2	16.8	7.1	1.9	0.2	9.2
Least developed countries	12.1	23.4	24.0	18.9	12.8	6.2	2.7	21.7	9.7	28.4	31.4	18.7	8.9	2.5	0.3	11.8
Less developed regions without the least developed countries	7.7	34.0	31.2	16.2	7.3	2.7	0.7	10.7	7.2	35.8	32.5	16.1	6.5	1.7	0.2	8.4
Europe	7.8	26.0	31.5	23.8	9.3	1.5	0.1	10.9	2.0	15.6	34.6	32.7	13.4	1.7	0.0	15.2
Eastern Europe	13.0	37.5	29.1	14.5	5.0	0.9	0.1	6.0	3.8	23.3	38.1	26.3	7.8	0.7	0.0	8.6
Northern Europe	6.3	19.6	31.6	28.1	12.2	2.1	0.1	14.4	0.8	10.6	32.0	36.9	17.3	2.4	0.0	19.7
Southern Europe	4.2	19.1	33.6	29.2	11.7	2.0	0.1	13.9	1.5	13.6	33.3	34.3	15.2	2.1	0.0	17.3
Western Europe	3.1	17.8	36.1	29.8	11.3	1.8	0.1	13.2	0.6	9.9	31.7	37.5	17.7	2.5	0.0	20.3
Northern America	12.1	26.1	29.0	21.9	9.0	1.7	0.1	10.9	6.6	21.6	33.2	26.7	9.9	1.9	0.1	11.9
Oceania	8.1	22.3	28.5	24.9	11.9	3.5	0.7	16.2	7.4	21.0	29.2	25.6	12.3	3.7	0.8	16.8
Australia/New Zealand	5.8	17.6	31.3	30.1	12.9	2.3	0.1	15.3	5.7	17.5	31.4	30.2	12.9	2.3	0.1	15.3
Melanesia	9.4	25.0	24.8	19.0	12.0	7.0	2.7	21.7	9.8	25.6	25.8	18.6	11.4	6.5	2.3	20.3
Micronesia	9.5	27.7	27.2	19.4	10.9	4.0	1.3	16.2	9.4	28.8	30.9	18.9	9.1	2.5	0.3	12.0
Polynesia	8.7	27.6	26.9	20.7	11.2	4.2	0.6	16.1	9.1	26.8	25.9	21.1	12.1	4.4	0.6	17.1
Africa	10.8	23.6	24.8	19.0	12.8	6.3	2.7	21.7	8.7	29.9	32.1	18.4	8.4	2.2	0.3	10.9
Eastern Africa	9.7	21.8	23.4	19.3	14.2	7.7	3.9	25.8	8.0	27.4	31.5	20.5	9.4	2.7	0.4	12.6
Middle Africa	16.1	23.7	21.7	17.8	12.4	6.5	1.7	20.6	12.5	30.4	30.1	16.1	8.3	2.4	0.1	10.8
Northern Africa	5.4	24.1	31.2	21.9	11.9	4.6	1.0	17.4	4.3	27.0	36.6	21.7	8.6	1.7	0.1	10.4
Southern Africa	12.1	25.2	26.4	18.4	11.9	4.6	1.4	17.8	10.7	29.7	32.3	17.2	8.2	2.0	0.0	10.1
Western Africa	11.0	24.4	24.2	18.2	12.6	6.4	3.1	22.1	8.4	33.3	32.3	16.4	7.3	2.0	0.2	9.6
Asia	7.0	34.9	32.1	16.2	6.8	2.4	0.6	9.9	6.6	36.0	33.3	16.2	6.3	1.5	0.2	7.9
Eastern Asia	1.4	40.4	39.5	14.2	3.1	1.0	0.4	4.5	1.4	40.3	39.6	14.2	3.2	1.0	0.4	4.5
South-central Asia	8.3	34.3	28.9	16.9	8.0	2.8	0.7	11.6	7.9	38.0	30.4	15.9	6.4	1.2	0.0	7.7
South-eastern Asia	8.5	26.8	31.1	19.3	10.6	3.3	0.5	14.4	8.2	28.3	34.9	18.6	8.2	1.7	0.0	9.9
Western Asia	7.5	24.8	27.0	20.6	13.0	5.3	1.8	20.1	8.8	26.9	29.1	19.0	11.1	3.9	1.1	16.1
Latin America and the Caribbean	14.3	28.8	25.8	17.3	9.7	3.5	0.6	13.8	14.5	29.2	25.9	17.1	9.5	3.3	0.6	13.4
Caribbean	14.2	28.5	26.8	17.2	9.4	3.3	0.6	13.3	13.3	25.5	26.9	18.6	11.0	3.9	0.9	15.7
Central America	13.7	28.1	25.1	17.7	10.9	3.8	0.7	15.4	14.0	28.9	25.2	17.4	10.3	3.5	0.6	14.5
South America	14.5	29.1	25.9	17.1	9.4	3.4	0.6	13.3	14.7	29.7	26.1	16.8	9.0	3.2	0.6	12.7

NOTE: Major areas are ordered according to development grouping.

Figure I.2. Age-specific fertility pattern for the more developed regions, the less developed regions and the least developed countries, 2000-2005

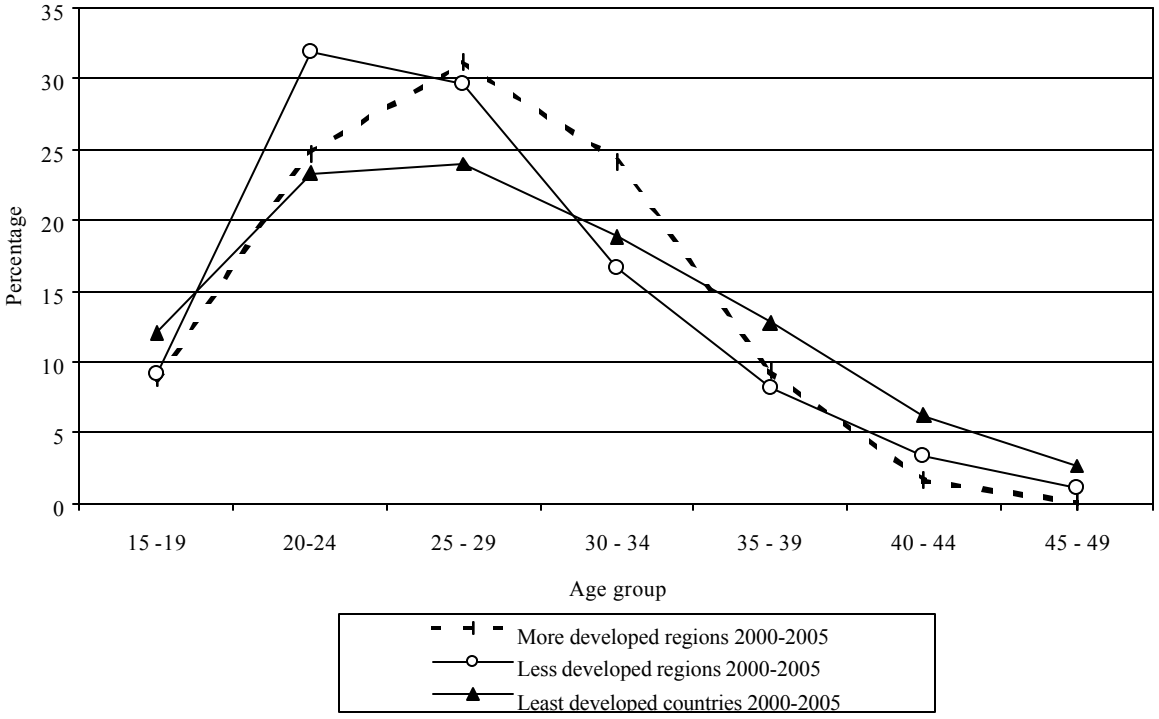
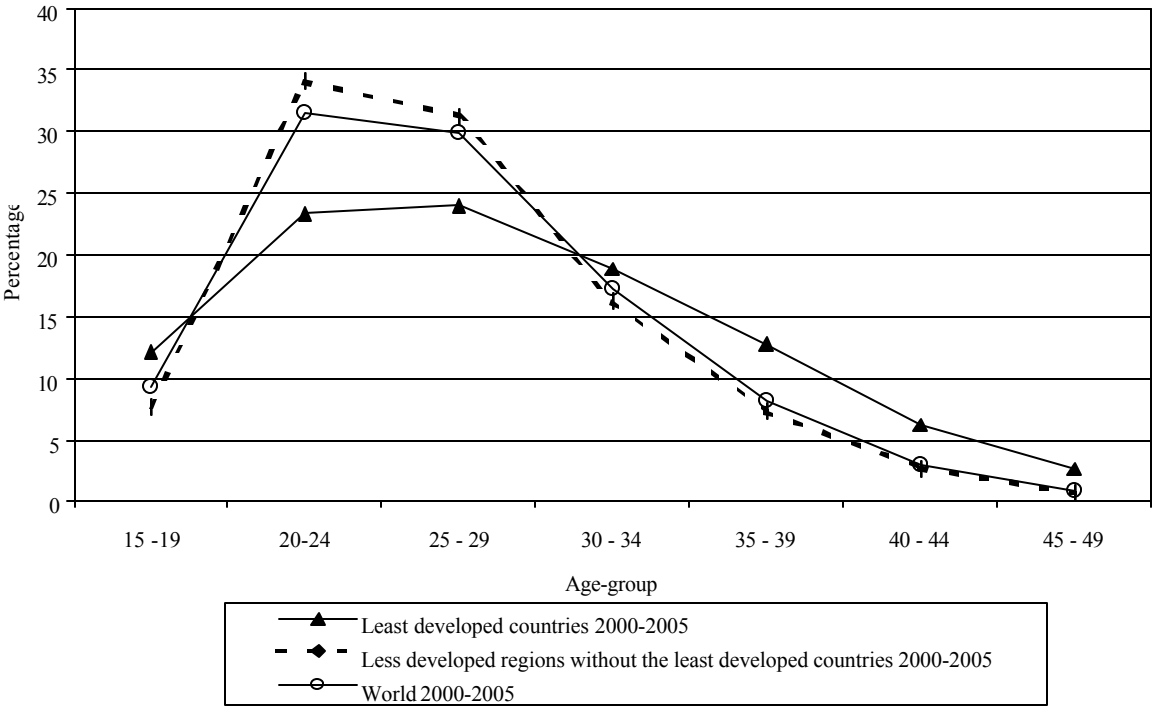


Figure I.3. Age-specific fertility pattern for the world, the least developed countries and the less developed regions excluding the least developed countries, 2000-2005



Eastern Europe also displays a strong concentration of fertility in the age group 20-24, with 37 per cent of its total fertility occurring at those ages. The other regions of Europe as well as Australia and New Zealand tend to have a higher concentration of fertility in the age group 25-29 and the share at ages 35-49 ranges from 13 to 15 per cent. This means that, in comparison with Eastern Europe, childbearing in the other more developed regions occurs later in life and extends over the entire reproductive life span. Among the more developed regions, Northern America also exhibits certain special traits, having a moderate share of childbearing at older ages (about 11 per cent), a high share among teenagers (slightly above 12 per cent), and a fairly flat distribution of the remaining share among the age groups in the range 20 to 34.

In order to show how the distribution of fertility by age varies according to the level of total fertility attained, figure I.4 displays in schematic form the distribution of countries according to the percentage of total fertility in three age groups: 15-19, 20-34 and 35-49. As suggested by the variations observed among regions, as fertility levels decline, a higher proportion of total fertility is concentrated in the central age range (20-34), whereas a lower proportion tends to occur at older ages (35-49). However, at the older age groups, the difference in medians between the countries with total fertility ranging from 2.1 to 3 children per woman and that of countries with total fertility at or below replacement is not large, and greater central variation is present among the second group. Among countries with very low fertility, a moderate proportion of total fertility occurs in numerous cases at advanced ages, probably as a result of the postponement of childbearing.

Figure I.4 illustrates another important feature of the distribution of fertility by age. The share of total fertility in the teenage years (15-19) bears almost no relation with the level of fertility; high and low shares are observed at every level. This finding confirms that low fertility can be achieved and maintained with a variety of patterns regarding the timing of childbearing, whether it occurs relatively early in women's lives or later, after they acquire education, skills and a career, and engage in childrearing at a later stage of their lives.

For the period 2045-2050, table I.24 presents the distribution of total fertility by age group, major area and region, according to the medium variant. In general, major areas and regions that have already reached very low fertility levels experience little change in the distribution of fertility over the projection period. Consequently, their pattern of fertility in 2045-2050 is very similar to that in 1995-2000, as is the case for regions of Australia and New Zealand, Eastern Asia, Europe and Northern America. Among the less developed regions, perhaps the major change is the one experienced by Africa and its regions, for which the age pattern of the fertility becomes more concentrated in ages 20-29 with a declining share in the teenage years and among women aged 35-49 (the latter account for about 10 per cent to 13 per cent of period fertility). In South-central Asia and South-eastern Asia, as in Micronesia, an increasing concentration of the share of fertility on the central age groups (20-24 and 25-29) will also occur. A corresponding reduction is expected to take place at older ages, with the share of fertility after age 35 varying between 8 per cent and 12 per cent.

In Latin America and the Caribbean the distribution of fertility will change little, implying that by 2045-2050 those regions will exhibit among the highest shares of fertility at older ages (varying between 13 per cent and 16 per cent). The other regions that will have large concentrations of fertility at the older ages are Western Europe and Northern Europe (about 20 per cent), Melanesia and Polynesia, with 20 per cent and 17 per cent of total fertility occurring in the age range 35 to 49, respectively. As shown in figure I.5, the age-specific fertility pattern for Europe will shift towards age groups 25-29 and 30-34 by 2045-2050 with declining proportions of childbearing observed among teenagers and young women (20-24 year olds). As a result, the share of fertility among women aged 15-19 will decline from 7.8 per cent to 2 per cent, whereas that for women aged 35-49 it will increase from 10.9 per cent to 15.2 per cent.

Figure 1.4. Distribution of countries by the percentage of age -specific fertility in total fertility, according to stages of the fertility transition, 1995-2000

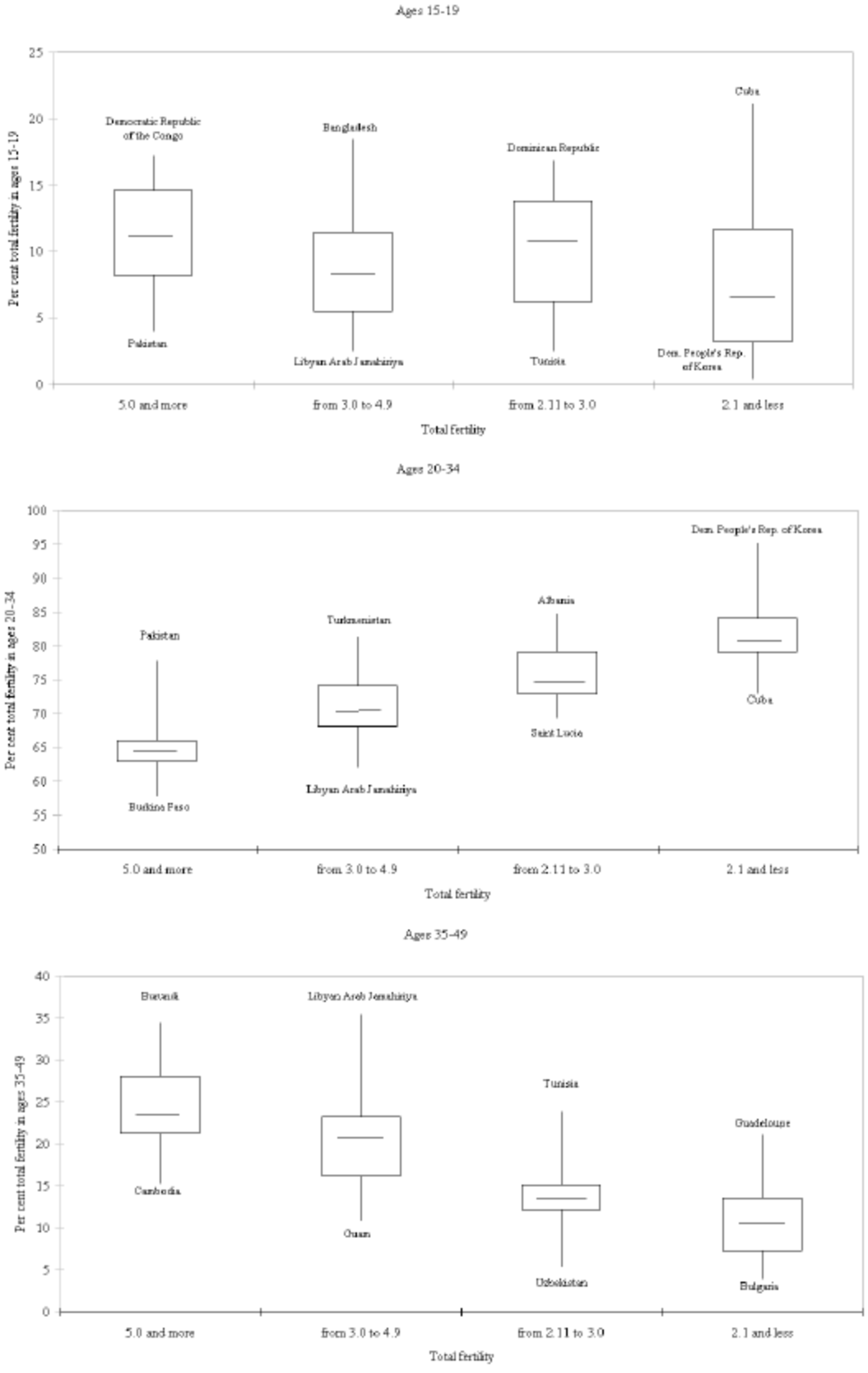
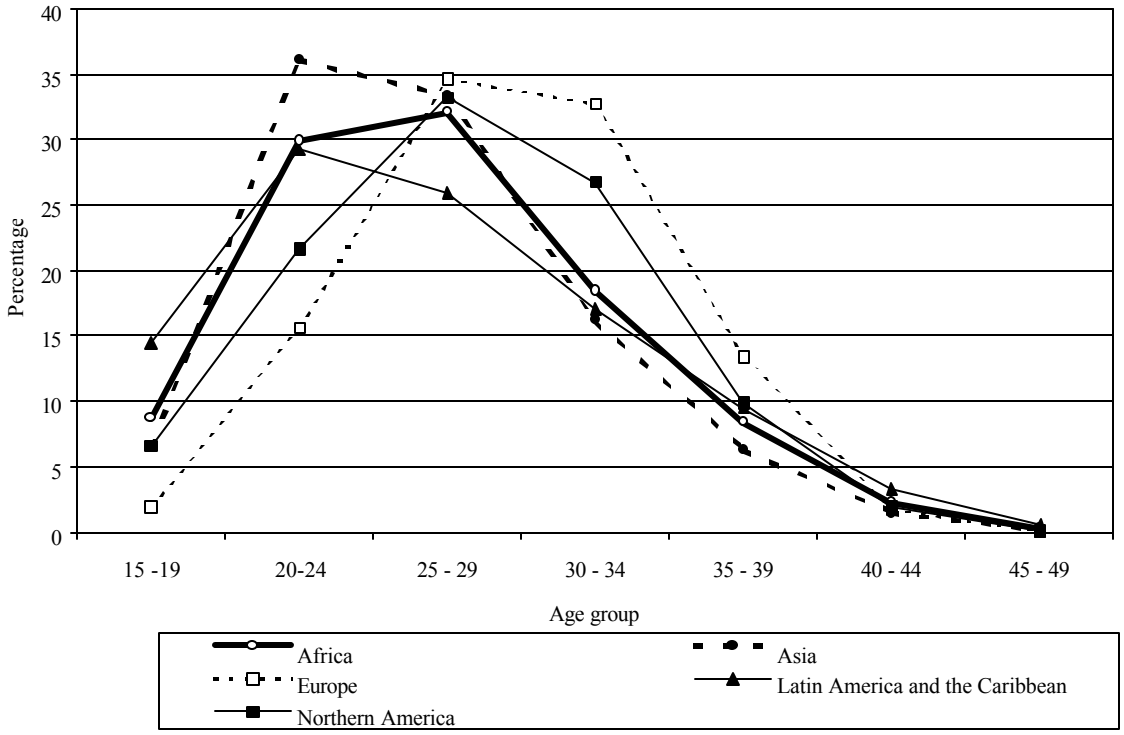


Figure I.5. Age-specific fertility pattern by major area, 2045-2050, medium variant



These changes at the regional level imply that there will be considerable convergence in the patterns observed among the less developed regions taken as a unit and the more developed regions, although the pattern in the more developed regions implies a slightly later incidence of childbearing than that of less developed regions. At the world level, in 2045-2050 teenagers will account for about 8 per cent of all childbearing; those aged 20-29 will bear about 65 per cent of all children born during the period; 18 per cent will be borne by women aged 30-34; and those aged 35 or over will give birth to about 10 per cent.