

POPULATION BULLETIN OF THE UNITED NATIONS

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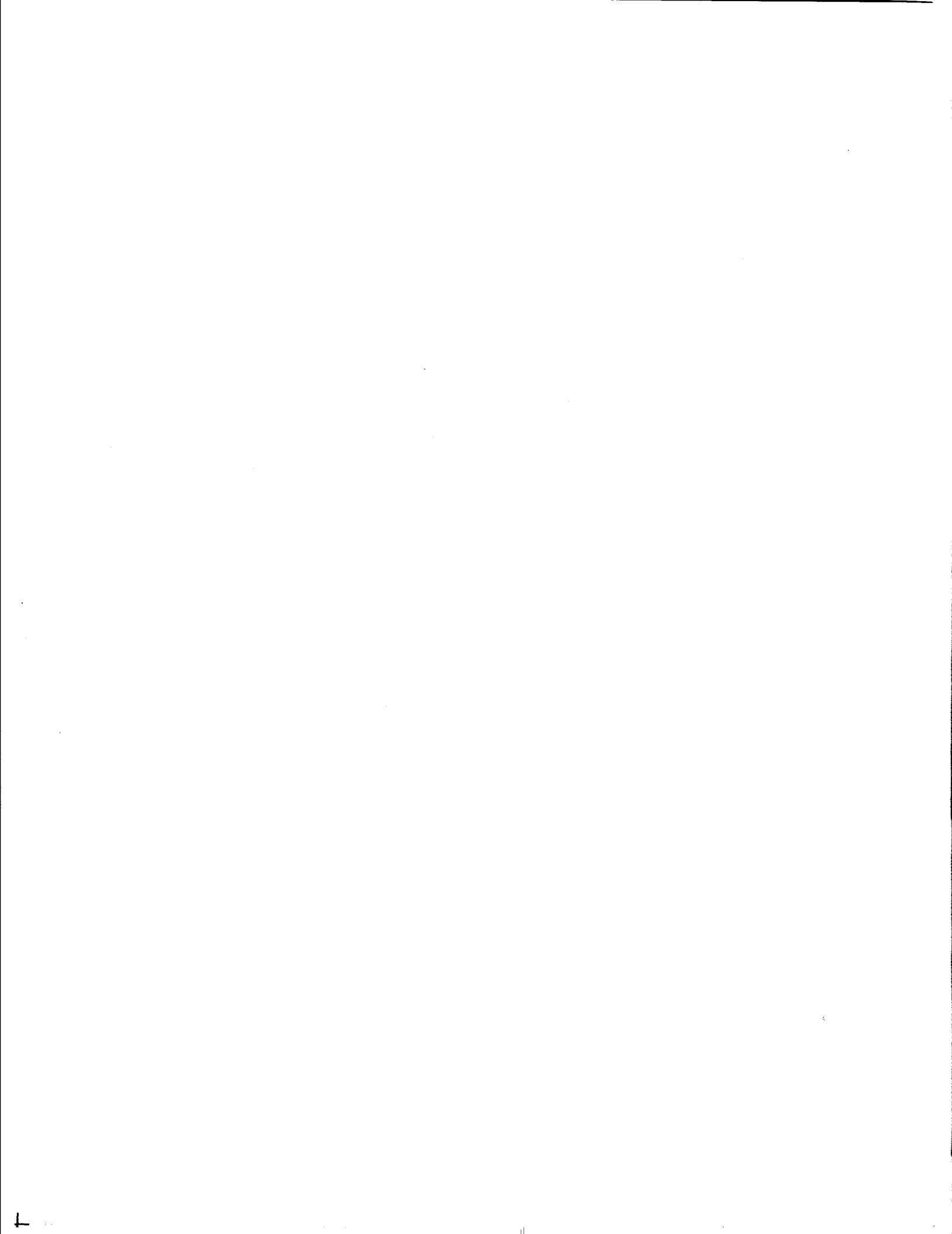
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PREFACE

The *Population Bulletin of the United Nations* presents brief articles relating to population which, by their nature, do not require separate publication. Material for the *Bulletin* is selected in the light of the interests and needs of Governments, international organizations, research institutions and individuals engaged in social and economic research, as well as the public interested in population.

The first seven issues of the *Population Bulletin* were prepared by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat between 1951 and 1963. In accordance with the endorsement and recommendation of the Population Commission at its eighteenth session, the *Bulletin* was reinstated as a United Nations publication, beginning with the publication of *Bulletin* No. 8 in 1977. As in the past, the *Bulletin* is prepared by the Population Division.

Most of the articles published in the *Bulletin* are prepared by the United Nations Secretariat in pursuance of the programme of work recommended by the Economic and Social Council and the Population Commission. Studies by consultants and reports of meetings organized by the United Nations, or excerpts from such studies and reports, may also be included. In addition, contributions are solicited from the specialized agencies of the United Nations, the secretariats of the regional commissions and scholars.



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Explanatory notes

The following symbols have been used in the tables throughout the report:

Three dots (...) indicate that data are not available or are not separately reported

A dash (—) indicates that the amount is nil or negligible

A blank in a table indicates that the item is not applicable

A minus sign (–) indicates a deficit or decrease, except as indicated

A full stop (.) is used to indicate decimals

A slash (/) indicates a crop year or financial year, e.g., 1970/71.

Use of a hyphen (-) between dates representing years, e.g., 1971-1973, signifies the full period involved, including the beginning and end years.

Reference to "tons" indicates metric tons, and to "dollars" (\$) United States dollars, unless otherwise stated.

Annual rates of growth or change, unless otherwise stated, refer to annual compound rates.

Details and percentages in tables do not necessarily add to totals, because of rounding.

CONCISE REPORT ON THE MONITORING OF POPULATION TRENDS

*United Nations Secretariat**

SUMMARY

This article presents a concise report on the findings of the second round of monitoring of population trends called for in the World Population Plan of Action.** It summarizes the findings as they refer to world and regional population growth; fertility; mortality; international migration; urbanization and population distribution; age structure; demographic aspects of intercountry income distribution; association between levels and trends in fertility and in socio-economic variables in developing countries; demographic aspects of the integration of women into society; population, food and nutrition; and population and education.***

OVERVIEW OF DEMOGRAPHIC TRENDS

The last quarter of this century has begun with several questions, mostly new and unforeseen, about world population. Has a breakthrough really occurred which will change the high fertility patterns of the developing countries? In the developed countries, how serious are the changes in family life styles which have already brought rates of childbearing near or below replacement levels? Has the pace of mortality decline in the developing nations actually slowed down and what does this change imply? The third quarter of the century was, perhaps, the most dramatic in the history of world population, with an unprecedented acceleration of population growth that raised the world total during the span of its 25 years from nearly 2,500 million to nearly 4,000 million, and the average rate of growth to about 2 per cent, with much higher rates prevailing in many of the developing countries. The fourth quarter has arrived with mounting evidence that this pattern of growth may well have reached a turning point, and a deceleration may well have started.

It is still necessary to emphasize the significance of the current growth rates of total population. The dramatic acceleration that started around the middle of the present century has been arrested but not substantially reversed in the less developed countries. However, it is believed, as shown by the United Nations projections, that the global rate of growth, now estimated to be about 1.8 per cent annually, will undergo a decline, slow at the beginning, accelerating later in the decade of the 1980s, and reaching perhaps 1.6 per cent at the turn of the century. The anticipated decline is

caused mainly by declining fertility in the developing countries, which would lower their growth rate from about 2.2 per cent now to perhaps 1.8 in the year 2000, and partly by a smaller decline in growth rate also predicted for the developed countries, from 0.67 per cent now to 0.51. Ninety per cent of the expected growth in the world population takes place in the developing countries, a fact whose potential implications for development in these countries cannot be ignored.

These figures are derived from the results of the 1978 revision of the demographic estimates and projections prepared by the United Nations. The results indicate that the total population of the world in the year 2000 is now expected to be 6,199 million, or only about 55 million below the estimate provided by the projections prepared in 1973. This slight downward adjustment is the net result of two main changes: (a) a limited downward adjustment of projected fertility which takes into consideration recent declines in some countries, both developed and developing, and (b) an upward adjustment of the 1975 total population from 3,968 million to 4,033 million, arising mainly from an upward revision of the estimated population of China in that year from 839 million to 895 million. In other words, taking into consideration these two adjustments, and the survivors who were added to the 1975 base population, it can be said that the downward revision of the fertility assumptions has resulted in a reduction of some 157 million in the estimates of the world's population for the year 2000.

The global growth rate of 1.8 represents a downward revision of the corresponding rate for 1975-1980 provided by the 1973 projections, namely, 1.95. The slower growth has been observed in almost all parts of the world, with the exception of Africa, where the growth rate has been revised slightly upwards. Elsewhere, fertility levels have been adjusted downwards: the crude birth rate for 1975-1980 has been reduced from 17.4 to 15.6 in the developed regions and from 36.4 to 33.6 in the less developed regions.

Yet there is a host of other problems facing world population. One is the continuing flow of migration from rural to urban areas, and ensuing problems of rapid urbanization in

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** In paragraph 107 of the Plan of Action it was recommended that population trends and policies should be monitored on a continuous basis as a specialized activity of the United Nations and the results reviewed biennially by the appropriate bodies of the United Nations system. For the report on the findings of the first round of monitoring of population trends, see *World Population Trends and Policies: 1977 Monitoring Report*, vol. 1 (United Nations publication, Sales No. E.78.XIII.3).

*** The findings of the second round of monitoring of population policies are summarized elsewhere in this *Bulletin*.

most of the developing world. Most of the developed countries are now experiencing unprecedented fertility declines, which have led to a concern on the part of Governments about replacement, labour supply and age structure. International migration, generally from south to north, has caused social, economic and political problems in both sending and receiving countries. The aging of the populations of the developed world is continuing, with corresponding pressure for social readjustment. Most of Africa still suffers from high morbidity and mortality, particularly among infants and young children.

The highly significant decline in fertility currently under way in the developing countries gained momentum around 1965: 19 countries with a population of half a million or more were reported as showing declines in their birth rates in excess of 20 per cent between 1965 and 1975, and an additional nine countries sustained estimated declines between 10 and 20 per cent during the same period. The combined populations of these countries represented about two thirds of the population of all developing countries in 1975. Asian countries experienced a decline of 17 per cent from 1965 to 1975 and Latin American countries showed declines of about 12 per cent, while the fertility of the African countries as a group remained virtually unchanged.

Another spectacular trend has been taking place in the developed countries, where fertility rates have declined to levels very close to replacement, and in some of these countries below this level. Of the 30 largest developed countries, only five failed to show a decline in gross reproduction rates between the mid-1960s and mid-1970s, while 17 experienced declines of 20-40 per cent and 20 had declines of at least 10 per cent. Only three countries showed a significant rise in magnitude during this period, and even here the rises were not continual. Half of these 30 countries already had net reproduction rates below replacement in 1973-1974. Another six were less than 10 per cent and only nine more than 10 per cent above this level. In terms of population rather than nations, the proportion living in countries with fertility below replacement is much more pronounced than indicated, since several of the largest developed countries, including the United States of America, the Federal Republic of Germany, England and Wales, and Japan, belong to this category.

Unlike earlier trends, mortality is no longer a decisive factor in the replacement potential of the populations of the developed countries. Mortality levels in these countries have reached a stage of only limited change: mass communicable disease has been very nearly eliminated, and mortality before age 50 has become so low that its complete elimination would have only a minor effect on life expectancy—adding only a few years to it. Further gains could only be achieved through advances in the treatment of the diseases of old age. A notable outcome of recent mortality trends is the increasing gap between male and female life expectancy.

The spectacular declines in mortality experienced by many developing countries during the third quarter of the century have made demographic history by surpassing, within this short period, declines made by the developed countries over much longer periods of progress, despite modest levels and rates of economic development. The experience of the 1950s has led to serious doubts about the existence of any simple relationship between mortality and level of living, and doubts continue to exist as to whether the recent mortality trends can be sustained. Hard evidence

is difficult to find because of deficiencies in data from most developing countries, but there are indications from some of these countries that the pace of mortality decline may well have slowed.

It is still difficult to determine from available information levels and trends of mortality in sub-Saharan Africa. It is evident, however, that this area has the highest mortality level in the world, with a life expectancy at birth well below 50 years, and that recent progress has not been impressive. There is considerable divergence among mortality levels in the rest of the developing countries. While several countries in Latin America and Asia already have a life expectancy above 60 years, there are several others that were still below the 50-year mark in the mid-1970s. Life expectancy levels in the developed countries, on the other hand, are showing considerable convergence, to levels between 70 and 78 years among females and between 64 and 72 years among males.

Current and prospective declines in fertility in developing countries are bound to have an effect on the age structure. Although the interval since 1970 is too short for sizable changes in age distribution to have taken place, there is evidence that the proportion below age 15 has fallen in several developing regions. A notable case is that of China, where a sharp fertility decline is now expected to reduce the percentage below age 15 from 35 in 1975 to 25 at the end of the century. However, in most of sub-Saharan Africa, the absence of a decline in fertility—or even a possible increase—accompanied by a decline in mortality has probably led to an increase in the proportion of children. Elsewhere, the general declining trend in this age group is naturally expected to be sustained, and the medium projections imply a decline from 40.5 per cent in 1975 to 34.3 in 2000. Virtually all of this decline will be absorbed by the working ages 15-64, and the old-age percentage is expected to grow by less than one point, from 3.8 to 4.6 in the same period. Thus, while there is no imminent problem of aging for the developing countries as a whole, the fraction of the aged population in the developed countries, which was as high as 10.4 per cent, is expected to continue increasing and to reach about 13.8 by the end of the century. The percentage of children in developed countries, on the other hand, is expected to continue its declining trend, from 27 in 1970 to 25 in 1975 to 22 in the year 2000.

International migration continues to attract serious attention not only because, a demographic variable, it produces a significant impact in some regions but also because economic, social and humanitarian sections are involved. The general trend at present is a movement from poorer to richer countries, both between and within the developing and developed areas, the common pattern in this trend being the movement of workers seeking employment and their families. Generally there has been a decline in such movements both within Europe and between Europe and the rest of the world. The migration of labour to Northern and Western Europe, which had been flowing from Southern Europe, Turkey and North Africa, almost ceased around 1974. In 1975 or thereabouts, however, there were still roughly 14 million aliens living in the countries of these two regions, representing 7 percent of their total populations.

Four other developed countries, namely, the United States of America, Canada, Australia and New Zealand, are continuing their policy of receiving immigration for the purpose of long-term resettlement. As a result, about 20 per cent of the Australian population, about 15 per cent of the

World and regional population growth

Canadian and New Zealand populations and 5 per cent of the United States population are foreign-born. There was a policy shift in these countries that began in the 1960s, so that most of the immigrants now arriving are from outside the Europe region. The United States also has a substantial inflow of undocumented migrants from nearby countries in the south, broadly estimated at 4-6 million.

A distinct pattern of migration in the developing countries has developed from the flow of workers into the oil-rich countries of the Middle East from the rest of this region as well as from Pakistan and other countries. The flow has been so substantial that in several of the Arab countries of the Persian Gulf two thirds or more of the labour force are migrants. In Saudi Arabia and the Libyan Arab Jamahiriya they constitute over one third of all workers. The economic boost to the sending countries, in terms of remittances, has recently been estimated at well over \$1 billion annually. For several of those countries, the money sent home is equivalent to as much as 7-20 per cent of the cost of their imports.

Another significant flow of migrants is taking place in West Africa, from the interior towards the coast, particularly the Ivory Coast, Ghana and Senegal. During recent years, migration to the Ivory Coast has been so important that over 20 per cent of the population originated abroad, over half of the immigrants coming from the Upper Volta.

Although urbanization is generally looked upon as a healthy phenomenon associated with economic growth, the social and economic problems arising from imbalance between urban population on the one hand, and basic public services and economic opportunities on the other, rank very high among the world's demographic problems, as clearly exemplified by the responses of Governments to inquiries from the United Nations Secretariat. The demographic dimensions of this situation can be realized from the estimates and projections of the urban population of the developing countries, which was 16 or 17 per cent of the total population in 1950, is about 30 per cent now, and is projected to be about 43 per cent by the turn of the century. The projections clearly indicate that these countries have to prepare for an urban increase of about 1.3 billion between 1975 and 2000. Since the developed countries as a whole are also slowly continuing their urbanization and are expected to be about 80 per cent urbanized by 2000, it is now estimated that the world's population may become more urban than rural a few years before the end of this century.

This is not to say that the problems of poverty, illiteracy and poor health of the rural population in the developing countries, which constitute 85 per cent of the world's rural population now and perhaps 90 per cent in 2000, are going to be solved on purely demographic grounds. Despite the unprecedented urbanization, it is estimated that rural populations will further increase by over 700 million, or more than one third, during the present quarter of a century.

About 60 per cent of urban growth in the developed countries is attributable to migration and the reclassification of localities from rural to urban, and only 40 per cent is due to natural increase. In the developing countries, on the other hand, the information available indicates that these proportions are reversed. There is evidence, however, that among these countries rural-to-urban migration grows faster with rapid economic growth. It has been observed, for instance, that this migration is highly and significantly correlated with the level of *per capita* gross national product and with that of the growth rate of labour productivity in agriculture.

The estimates and projections of world population prepared by the Population Division indicate that the period of most rapid population growth has already passed and that the growth rate has been on the decline and will not reverse its trend in the foreseeable future. According to the reassessed estimates, the growth rate of the world population today is around 1.81 per cent per annum, which is below the highest level of 1.99 per cent estimated for 1960-1965, and also below the level of 1.84 per cent for 1970-1975. The rate is expected to continue its decline and reach about 1.56 per cent by 1995-2000.

The new figures represent a modification of the Population Division's previous assessment of world population trends, prepared in 1973, in which the world's population was expected to achieve the highest growth rate yet in the quinquennium 1975-1980. However, a significant decline of growth rates in both the more developed and the less developed regions in the 1970s reflects new trends. For example, the average annual growth rate of population in the less developed regions for 1975-1980 was revised from 2.37 to 2.21 per cent and in the more developed regions from the original estimate of 0.83 per cent to 0.67 per cent. As a result, the growth rate for world population was modified from 1.89 to 1.84 per cent for 1970-1975, and from 1.95 to 1.81 per cent for 1975-1980 (see table 1).

A close examination of population trends shows that at the regional level these new trends reflect the demographic changes that have occurred, mainly in some developed regions and in East Asia, the Caribbean and several Latin American countries; in East Asia, the population growth rate has been declining rather rapidly, from 1.94 per cent in 1960-1965 to 1.62 per cent in 1970-1975 and 1.32 per cent in 1975-1980. In contrast, most of the other less developed regions have yet to show a significant declining trend.

Among the more developed regions, the deceleration of population growth has continued throughout the 1970s in Northern and Western Europe, Northern America, and Australia-New Zealand and from 1975 onwards in Japan and Southern Europe. The Union of Soviet Socialist Republics has had a virtually unchanging growth rate throughout the 1970s (see table 1). The major cause of the change has been a decline in the birth rate in the various developed regions, but a decline in international migration seems to be a significant factor in some regions. On the other hand, some rise in the growth rate was noticed recently in Eastern Europe (table 1), presumably reflecting the changing trends of net migration and fertility.

In East Asia, the country most responsible for the declining growth rate is clearly China, whose population constitutes 84 per cent of the total of East Asia and a quarter of the world's population. Recent scattered information indicates that China's growth rate in the 1950s and 1960s was higher than generally believed, and leads to an estimate of some 950 million for the current population. There are also indications that China's rate of population increase may now be decreasing very rapidly. The revised provisional estimates of growth rate for China prepared by the Population Division now stand at 2.0 per cent for 1960-1965, declining to 1.6 per cent for 1970-1975 and 1.3 per cent for 1975-1980.

TABLE 1. ESTIMATES AND PROJECTIONS OF POPULATION AND AVERAGE ANNUAL RATES OF GROWTH, 1965-2000

Major areas and regions	Population (millions)					Average annual rates of growth (percentage)					
	1965	1970	1975	1980	2000	1965-2000	1970-1970	1975-1975	1980-1980	1985-1985	1995-1990
World total	3 344	3 678	4 033	4 415	6 199	1.90	1.84	1.81	1.80	1.76	1.56
More developed regions	1 003	1 050	1 093	1 131	1 272	0.91	0.81	0.67	0.67	0.62	0.51
Less developed regions	2 341	2 628	2 940	3 284	4 926	2.31	2.24	2.21	2.17	2.12	1.84
Africa	311	354	406	469	828	2.61	2.71	2.91	2.97	2.93	2.64
Eastern Africa	87	100	115	133	243	2.76	2.77	2.94	3.06	3.06	2.85
Middle Africa	38	41	47	53	86	1.93	2.38	2.55	2.61	2.56	2.13
Northern Africa	73	83	94	109	184	2.50	2.50	2.80	2.87	2.75	2.32
Southern Africa	22	25	29	33	54	2.59	2.61	2.75	2.72	2.56	2.18
Western Africa	90	104	121	141	261	2.83	3.00	3.06	3.16	3.15	2.95
Latin America	247	283	323	368	608	2.67	2.64	2.66	2.65	2.58	2.34
Caribbean	23	25	28	31	43	1.94	2.06	1.81	1.79	1.76	1.61
Middle America	57	67	79	93	172	3.17	3.19	3.26	3.26	3.18	2.91
Temperate South America	33	36	38	41	51	1.48	1.34	1.34	1.27	1.17	0.93
Tropical South America	134	154	177	204	341	2.86	2.78	2.80	2.76	2.66	2.37
Northern America	214	226	236	246	290	1.11	0.87	0.83	0.96	0.91	0.61
East Asia	899	981	1 063	1 136	1 406	1.75	1.62	1.32	1.16	1.14	0.95
China	754	826	895	957	1 190	1.81	1.62	1.33	1.18	1.17	0.97
Japan	99	104	112	116	129	1.07	1.33	0.85	0.57	0.50	0.48
Other East Asia	45	51	57	63	87	2.30	2.20	2.03	1.91	1.78	1.39
South Asia	979	1 111	1 255	1 422	2 205	2.52	2.45	2.49	2.44	2.31	1.91
Eastern South Asia	251	286	325	368	559	2.65	2.54	2.49	2.41	2.24	1.74
Middle South Asia	664	750	845	956	1 482	2.45	2.38	2.46	2.41	2.29	1.93
Western South Asia	65	74	85	98	164	2.70	2.81	2.82	2.79	2.69	2.28
Europe	445	460	474	484	520	0.66	0.61	0.39	0.36	0.35	0.38
Eastern Europe	100	103	106	110	122	0.64	0.55	0.71	0.63	0.51	0.45
Northern Europe	79	80	82	82	85	0.44	0.31	0.08	0.07	0.13	0.22
Southern Europe	123	128	134	139	156	0.77	0.92	0.72	0.66	0.61	0.51
Western Europe	143	148	152	153	158	0.69	0.56	0.03	0.05	0.11	0.28
Oceania	18	19	21	23	30	1.96	1.8	1.47	1.41	1.37	1.19
Australia-New Zealand	14	15	17	18	22	1.85	1.67	1.21	1.10	1.07	0.93
Melanesia	2	3	3	4	6	2.40	2.45	2.60	2.66	2.56	2.16
Micronesia-Polynesia	1	1	1	1	2	2.78	2.66	2.02	1.90	1.72	1.22
Union of Soviet Socialist Republics	231	244	254	267	312	1.09	0.84	0.94	0.94	0.85	0.64

Apart from this striking slow-down of population growth in China, in other less developed regions of the world growth is showing less conspicuous changes. In Africa the rates have even increased slightly during the present decade. In some other regions, any decline in birth rate has apparently been offset by a declining death rate. Estimated levels of growth rate in the major less developed areas for 1975-1980 are 2.9 per cent for Africa, 2.7 per cent for Latin America, and 2.5 per cent for South Asia.

The combined population of the less developed regions was estimated to be 2,940 million in 1975, increasing to 3,280 million by 1980. The average annual growth rate of population in the period 1975-1980, namely, 2.21 per cent, shows a tangible decline from the value of 2.35 per cent in 1960-1965. As for future prospects of population growth in these regions, recent trends would lead to a projected population of 4,930 million at the end of this century, which is about the same as the result obtained in 1973. As noted, however, the new projection uses a larger base population for 1975; if there had been no change in the base population, the new projected population for 2000 would have been more than 100 million lower than the older projection. The rate in 1995-2000 is now expected to be 1.84 per cent instead of 1.94 per cent.

The total population of the more developed regions—Europe, Northern America, Australia-New Zealand, Japan and the USSR—is estimated to be 1,093 million in 1975 and is expected to increase to 1,272 million by 2000. The

average annual growth rate of population in 1975-1980, namely, 0.67 per cent, is noteworthy in two ways: it is lower than the growth rate of 0.82 per cent for the same period forecast in 1973 and it is also lower than the growth rate of the period 1970-1975, namely, 0.81 per cent. The projected growth rate in the last quinquennium of this century is now revised downwards from 0.60 to 0.51 per cent.

Fertility

Revised assessments of fertility levels now indicate that the world's current birth rate is about 29 per 1,000, compared with 31 per 1,000 in 1970-1975 (see table 2). It is now a well-established fact that fertility control, or child-bearing by choice, has been practised increasingly within a growing number of developing countries. Indeed, the largest developing country, namely, China, now has a birth rate estimated at about 22 per 1,000 and the second, third and fourth largest, namely, India, Indonesia and Brazil, have estimated rates in the range of 35-37 per 1,000. However, owing, on the one hand, to the unprecedentedly low fertility levels that have been reached in developed countries and, on the other hand, to the high and stable levels that still exist in some developing countries, heterogeneity of fertility levels is more conspicuous than ever before: from birth-rate levels in the 50s per 1,000 in some West African and Middle Eastern countries to the 9.5 reported for 1977 by the Federal Republic of Germany, and from a

gross reproduction rate of 3.8 estimated for Kenya to 0.7 for the Federal Republic of Germany.

In spite of the decline observed in many developing countries, fertility remains high in most developing regions. Gross reproduction rates of 3.4 or more prevail in Western South Asia. For the regions of Western Africa, Eastern Africa and Middle South Asia, this rate is commonly above 3, and, with some exceptions, birth rates of 47 per 1,000 or more are common in the first two of these regions. Rates of 50 per 1,000 are estimated for one half of the countries of Western South Asia, and measures not far from this level have been derived for a number of countries in Central America.

In many of the developed countries, fertility levels are lower than ever before recorded, to the extent that in nearly half of them the birth rate was below 15 per 1,000 in 1977, and in virtually all of them it was below 20. Fertility is lowest in Northern and Western Europe, where, except for Ireland, the 1977 birth rates were all in the range of from 9.5 to 14 per 1,000 and in three countries, namely, Austria, the Federal Republic of Germany and the United Kingdom, deaths have exceeded births in recent years. Fertility levels are also conspicuously low in some other countries in Europe—in Italy (13.2 in 1977) and in the German Democratic Republic (13.3 in 1977), although the latter has experienced a fertility increase since 1975. In the rest of the developed countries the range of the 1977 crude birth rates was narrow, from 15.3 in the United States to 18.2 in the

USSR. A rise has been observed during 1970-1975 in three Eastern European countries, seemingly caused in part by government policy. This trend stabilized in 1976 in two of the countries. A few European countries outside Eastern Europe have also reported recent slight increases in their birth rates, which cannot yet be considered significant.

Knowledge about fertility and the factors affecting it is still poorest in Africa—except for a few small islands and a few countries in the north. As indicated above, the evidence available shows that the highest levels exist in western and eastern Africa, with the obvious exception in the latter region of Mauritius and Réunion, where fertility has been declining (the gross reproduction rates were 1.5 in Mauritius in 1976 and 1.6 in Réunion in 1975). There are also indications that some sub-Saharan African countries may have experienced a fertility increase, due possibly to the initial impact of improved health and well-being.

High to moderately high fertility is characteristic of Northern Africa, where for four out of the six countries in the region the birth rates are in the upper 40s. Tunisia has experienced a considerable decline, the gross reproduction rate having fallen from 3.3 to 2.8 between 1965 and 1975. This decline is not surprising in view of the social reforms that have been carried out, including legislation for a higher age at marriage and an effective family planning programme. Egypt also showed a considerable decline in its reported birth rate, from 43 in 1963 to 34 in 1972, after which year the trend began to reverse itself. Elsewhere in

TABLE 2. ESTIMATES AND PROJECTIONS OF CRUDE BIRTH RATES, 1965-2000 AND GROSS REPRODUCTION RATES, 1975-2000

Major areas and regions	Crude birth rates (per 1,000)					Gross reproduction rates					
	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1995-2000	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000
World total	31.9	30.3	28.9	28.1	27.1	23.8	1.96	1.84	1.74	1.62	1.51
More developed regions	17.8	16.7	15.6	15.9	15.7	14.9	0.99	0.98	1.00	1.02	1.04
Less developed regions	37.7	35.5	33.6	32.1	30.6	26.2	2.31	2.12	1.96	1.79	1.63
Africa	46.9	46.1	46.0	45.0	42.9	36.9	3.13	3.06	2.90	2.68	2.41
Eastern Africa	47.9	47.8	47.6	47.1	45.3	39.8	3.22	3.19	3.07	2.87	2.62
Middle Africa	45.9	45.3	45.1	43.7	41.2	33.3	2.95	2.88	2.72	2.46	2.10
Northern Africa	44.7	42.5	42.6	40.8	38.2	31.5	3.02	2.84	2.61	2.33	2.04
Southern Africa	39.1	38.5	38.6	37.1	34.4	28.9	2.55	2.44	2.24	2.00	1.77
Western Africa	49.9	49.3	49.0	48.5	46.6	41.0	3.33	3.31	3.18	2.99	2.72
Latin America	38.0	36.3	35.4	35.4	33.0	29.6	2.41	2.29	2.16	2.02	1.89
Caribbean	36.4	32.2	28.4	27.6	26.9	24.5	1.86	1.69	1.57	1.51	1.46
Middle America	43.2	42.1	41.4	40.4	38.7	34.7	2.99	2.86	2.67	2.49	2.31
Temperate South America	24.0	22.9	22.4	21.6	20.5	18.3	1.44	1.37	1.31	1.24	1.18
Tropical South America	39.4	37.4	36.5	35.2	33.4	29.4	2.44	2.29	2.15	2.00	1.85
Northern America	18.3	15.8	15.3	17.0	16.6	14.2	0.89	0.93	0.97	1.00	1.00
East Asia	28.4	25.5	22.1	19.7	19.3	17.3	1.47	1.19	1.10	1.01	1.01
China	29.5	26.0	22.1	20.1	19.7	17.4	1.52	1.20	1.10	1.00	1.00
Japan	17.8	19.2	15.0	12.9	12.9	14.1	0.89	0.85	0.92	0.96	0.99
Other East Asia	32.9	30.1	27.8	26.1	24.5	20.3	1.84	1.57	1.40	1.29	1.20
South Asia	42.6	40.5	38.9	36.9	34.1	27.8	2.69	2.50	2.26	1.99	1.73
Eastern South Asia	43.5	40.7	38.2	35.9	32.8	25.8	2.56	2.37	2.11	1.84	1.56
Middle South Asia	42.3	40.4	39.1	37.1	34.4	28.3	2.72	2.53	2.29	2.03	1.76
Western South Asia	42.6	40.9	39.7	38.4	36.4	30.6	2.83	2.66	2.46	2.29	1.99
Europe	17.6	15.8	14.5	14.4	14.4	14.5	0.96	0.95	0.95	0.98	1.03
Eastern Europe	16.8	16.6	17.5	16.8	15.6	14.7	1.10	1.08	1.06	1.04	1.03
Northern Europe	17.3	14.7	12.6	12.8	13.6	14.3	0.87	0.86	0.90	0.96	1.02
Southern Europe	19.4	17.9	16.2	15.8	15.3	14.9	1.10	1.06	1.03	1.03	1.04
Western Europe	16.8	13.9	11.8	12.2	12.9	14.1	0.80	0.80	0.83	0.91	1.02
Oceania	24.5	25.1	21.6	21.3	20.5	18.8	1.40	1.36	1.30	1.28	1.23
Australia-New Zealand	20.3	21.2	16.8	16.5	15.9	15.3	1.03	0.98	0.94	0.95	0.98
Melanesia	42.9	42.2	41.2	40.2	37.6	30.7	2.97	2.87	2.67	2.45	2.10
Micronesia-Polynesia	37.4	35.0	33.6	31.9	29.4	23.9	2.29	2.19	1.87	1.69	1.48
Union of Soviet Socialist Republics	17.6	17.8	18.3	18.8	18.2	16.4	1.16	1.15	1.15	1.14	1.14

Africa, somewhat lower levels of fertility than those prevalent for all the sub-Saharan region have been estimated for some of the countries of Middle Africa, although all the measures available date back to the late 1950s and early 1960s. This lower level is attributed by researchers to health conditions and cultural factors, including marriage patterns, breast-feeding practice and diet.

In contrast with the high levels that prevail in West and Middle South Asia, fertility declines of considerable magnitude have been achieved in some countries in the east and the south. Foremost is China, where the existence of a large decline is realized by all writers, though they differ on its magnitude. Four small countries in East and South Asia had birth rates below 30 around 1975, and eight more had moderate levels between 30 and 40. In many of these countries modernization movements, as well as family planning programmes, are under way. Though the greater contribution to the decline in these countries is generally brought about by lower marital fertility rates, there is evidence that age at marriage had a significant role in some countries.

There has been considerable interest lately in the downward trend of fertility in Indonesia, due to its size and its considerable family planning efforts. Views as to the extent of the decline vary. One analysis of data from Java indicates a drop of 12 per cent in the birth rate, from 41 per 1,000 before 1970 to 36.6 in 1971-1975. Another study based on the results of a 1976 fertility survey concluded that the total fertility rate had decreased by about 15 per cent in Java and Bali from the late 1960s to 1976. Even if there were no declines in the rest of the country, this finding would imply a decline of 10 per cent in Indonesia as a whole.

Among the regions of Latin America, a considerable decline in fertility has taken place so far in Temperate South America and the Caribbean, but it is in the latter that such a decline has taken place in recent years. Rates between 20 and 30 are now common in the Caribbean, with the exception of the Dominican Republic and Haiti. The three countries of Temperate South America have birth rates in the range 21-25, with little change in recent years, except perhaps for a slight increase in Uruguay.

Impressive declines have also taken place in Colombia and Venezuela. The data available suggest a decline—from 40 in 1965-70 to 34 in 1975. This decline has been attributed to a decreased proportion of women in different forms of cohabitation, a rise in abortion rates, and an increase in the effective use of contraceptives. The decline in Venezuela, from 40 in 1965-1970 to about 36 at present, is compatible with the social and economic progress that country is experiencing. In Central America, there has been a considerable decline in Costa Rica and Panama, which have both reached levels of close to 30. The trend in Mexico is clearly important, in view of the size of its population and the change in population policy; this trend has yet to be fully assessed, although there are indications of significant recent decline. There is also some question with regard to Brazil, for which reliable birth data are lacking. Some recent data suggest a small decline in this country, with a birth rate equal to about 37 in 1975.

It is thus clear that although most of the Latin American countries are still within the range of moderately high fertility, and some are in the high range, there has been a clear and sustained fertility decline. While it may well be justifiable to say that improvements in such conditions as education and infant and child mortality have facilitated the tran-

sition, other factors could have played a role. For example, the currents of emigration may have influenced the sex ratio at the relevant ages. Also, the impact of family planning in some of these countries cannot be ignored.

Factors affecting fertility in developing countries: some recent observations

Some light is thrown upon conditions of fertility in developing countries by the results obtained recently for eight countries covered by the World Fertility Survey. A main advantage of this survey is that, owing to the substantive identity of the national surveys, issues of comparability are largely reduced although they are by no means eliminated. Concepts of marital status, educational attainment or occupation, for example, may be interpreted differently in different societies. The following observations are derived from the national surveys of Fiji, Malaysia, Nepal, Pakistan, the Republic of Korea, Thailand, Colombia and the Dominican Republic. It goes without saying that these countries do not represent the group of developing countries as a whole and that they differ with regard to level of development. Nepal and Pakistan have high birth, death and illiteracy rates, and are predominantly rural. The Republic of Korea, Malaysia and Colombia, on the other hand, are considerably more advanced. It should also be noted that fertility has begun to decline in six of the eight countries, Nepal and Pakistan being the two exceptions.

The influence of age at first marriage is clearly demonstrated by the observation that among women married for 10 years or more, those who married below age 20 had a substantially higher average number of children "ever born" than did those who married later. This negative association was true for women married for 10-19 years as well as for those married for 20 years or more. For instance, in Malaysia, among women married for 10-19 years, those who married at ages below 20 had an average parity of 4.9 children compared to 3.4 for those who married at age 25 and above. The only exception is Nepal, whose data do not reveal an age pattern. The survey data also show in this connexion that in three countries—Nepal, Thailand and the Dominican Republic—there has been little or no change in age at marriage, since women who are currently 45-49 years of age married at the same average age (within six months) as women who are currently 25-29 years old. In Fiji, the Republic of Korea and Malaysia an increase of from one to four years in mean age at first marriage was observed. The largest change was in the Republic of Korea, where the oldest women (45-49) married near age 17 and the youngest (25-29) did not marry until age 21 on average.

Data from these surveys also show a strong negative association between family size and the wife's education. In fact, of the three socio-economic background variables considered (the other two being urban-rural residence and husband's occupation) the largest differences in fertility in all countries are associated with educational status. The negative relation persisted across marriage cohorts. Among women married 20 years or more, the average parity of women with no education ranged between 6 and 8, whereas for women who had at least a primary education the average was between 4 and 6. In each of the eight countries the relationship was most pronounced for the group of women married for 20 years or more and weakest when the marriage duration was less than 10 years. This may be explained in terms of early childbearing among all educational groups, after which fertility is controlled, at least more

effectively, by the better educated, who appear to use fertility control to limit births rather than to space them.

The lower level of fertility in urban areas, generally ascribed to social and economic change in these areas, is also found in the parity data of six of the eight countries. Likewise, women whose husbands worked in agricultural occupations consistently had higher fertility than those with spouses engaged in non-agricultural activities. In Pakistan, however, where fertility has not declined, there was practically no difference by urban-rural residence or between the two occupational groups. As with education, the strength of the relationship between fertility and urban-rural residence, or the husband's occupational group, is particularly weak among marriages lasting less than 10 years—this again implies for spacing purposes.

The fertility preferences of individuals are important not only because they contribute to an understanding of present and future performance but also because such information is useful to those concerned with fertility reduction. Preventing unwanted pregnancies is one of the main targets of family planning, and high desired family size indicates more resistance to reduction in size. In all eight countries, the proportion of women who wanted no more children was surprisingly high, ranging from 30 per cent in Nepal to 72 in the Republic of Korea. The percentage increased with the number of living children. Among women with four living children, the majority in all countries reported they did not want any more; the range went from 52 per cent in Malaysia to 92 per cent in the Republic of Korea. These results should be treated with caution, however, since replies to the question whether any more children are wanted are subject to error, particularly if one takes into account the conditions under which the interview is held and the time-reference involved¹

In every country, the desired family size increased with the number of living children. Women with no living children or only one child generally wanted a total of three-four children, whereas women with five or more children wanted four-six. In part, this might reflect a decline in family size preferences, and to some extent it might reflect attempts on the part of women with large families to rationalize unwanted births. In Pakistan and Nepal, which have shown little fertility decline, women who are beginning their reproductive careers desire almost as many children as women who have already had five or more. Another striking fact is that the mean number of desired children was always larger than the number of living children, except in five of the eight countries when the number of living children was five or more. It was only in the Republic of Korea that desire fell below actual results from the fourth child onwards.

Comments on the use of contraceptives in developing countries

Family planning practice in developing countries, other than the use of traditional methods whose effectiveness is

¹ In the Republic of Korea, when the results of this form of questioning were checked against answers to the question on the number of children wanted, it was shown that in the latter case the percentage of those who had exceeded the desired number (and who presumably would not want any more children) was much lower than the percentage indicated by the answers to the direct question whether the woman actually wanted more children.

limited, is a new phenomenon, the extent of which is a main factor in fertility decline. Comparable international data on a large scale will be available when World Fertility Survey data are tabulated, but at present a partial picture is provided for the above-mentioned eight countries. As can be expected, numbers of "ever-users" of contraceptives are very limited in Nepal and Pakistan. Survey results show that among all "ever-married" women aged 15-49, those who had ever used a contraceptive, efficient or inefficient, amounted to 4 per cent in Nepal and 10 per cent in Pakistan. "Current" users show even smaller percentages in Nepal and Pakistan, amounting to 2 and 5 per cent, respectively. The percentages range from almost nil at ages 15-19 to 4 for Nepal and 10 for Pakistan at ages 35-39. At the other end, Colombia and Fiji have the highest over-all percentages of current use, 37 and 39, respectively, and the maximum current use by age, amounting to about 50 per cent. Significantly, among these eight countries, the highest proportions of current users among women aged 15-19 were in Colombia and Fiji, where one out of five "ever-married" women was a current user. In the 20-24 age group, about 30 per cent were current users in Colombia, Fiji, Thailand and Malaysia, compared with 1 or 2 per cent in Nepal and Pakistan. This seems to indicate that as the practice of birth regulation spreads, it may be used at increasingly younger ages for postponing births. It can also be safely said on the basis of these results that in some of these countries there is more use of contraceptives, even in the early reproductive period, than would have been thought possible a few years ago.

Education appears to be the factor generally associated with the most significant differences in family planning practice, low levels of contraceptive use being associated with low levels of education. This is the relation shown for the eight countries. In Pakistan, where little contraception is practised, the percentage of "ever-married" women currently using contraception is 5 among those with no education, 10 in the primary education category, and 21 among those with secondary and higher education. On the other hand, in Colombia, these percentages are 18, 46 and 61, respectively.

The conventional hypothesis is also confirmed in the case of urban-rural residence. Such differences between the two types of locality presumably reflect differences in the accessibility of contraceptive information, services and supplies and in the extent of contraceptive practice.

The relationship between the desire to have no more children and contraceptive practice is not as strong as might be expected in most of these countries. In addition to possible errors, there may be family pressures on the woman to have more children or her motivation may simply not be strong enough. Then, of course, there is the important category of those who genuinely do not want any more children but lack information and/or contraceptive services. Thus, in seven of the eight countries more than 40 per cent of the women exposed to the risk of conception who indicated that they wanted no more children were not currently using any contraceptive method, efficient or non-efficient, and the percentage goes even higher when only efficient methods are considered. In Pakistan, more than three quarters of the women at risk and wanting to end child-bearing were not using any method, and in Nepal this ratio was more than 90 per cent. The only exception was Fiji, where about three quarters of such women were using some form of contraceptive, and two thirds were using an efficient method.

Comments on recent fertility patterns in developed countries

The fall in marital fertility in developed countries is attributed to a fall in unwanted fertility and to a decline in the number of births wanted. The pattern of change has been such that there has been a slight increase in the frequency of childless and one-child families and a greater ability to meet family-size targets in the two-to-three-child range. Thus, in most countries, decreases in birth rates for all birth orders have contributed to the declining fertility since 1970, but the rate of decline has been much greater for the higher birth orders. In the United States of America, for example, between 1970 and 1973 the first three-order birth rates declined an average of 18 per cent, while higher-order rates declined an average of 40 per cent.

Another important development in reproductive behaviour in several countries has been a lowering of the age of termination of reproduction to about 35 years. During 1971-1975, fertility rates for British women aged 35-39 were 62 per cent below those achieved in 1946-1950; for women aged 40-44 the reduction was 69 per cent. Similarly, in the United States between 1960 and 1973 the fertility of women aged 35 and over declined by 60 per cent. Furthermore, a more recent change has been an increase in the age of onset of reproduction. In England and Wales there has been a sharp increase in the proportion of marriages remaining childless in the early years of marriage, and in the United States, the percentage of white women who reached age 30 without having children increased by more than half, from 13 to 21, between 1966 and 1976.

There has also been a steady increase in the use of fertility control, and in the use of the most effective methods. By 1975, the proportion of white couples who had been sterilized for contraceptive purposes was almost equal to the proportion of those using the pill (31 per cent *versus* 34 per cent). Sterilization is now the single most popular method among United States couples married 10 years or more. Many western countries have adopted laws liberalizing abortion within the past 10 years, and there were extensive grounds and facilities for abortion in Eastern European countries much earlier than that. Access to abortion in several of the latter countries has been restricted in recent years, however, causing short-term increases in fertility.

In these post-transitional societies where reproduction is highly controlled, the traditional explanations of the factors behind fertility decline are no longer adequate in respect of current fertility trends. Such aspects as industrialization, urbanization and education are so advanced that the effect of these processes on fertility change can only be limited. An important question now, naturally, is what will happen to the trends, at least in the near future. In view of the above, it seems that the prospect of near stationariness by the turn of the century is a real possibility. Couples' decisions regarding family size may be influenced by economic conditions. Government policies could also have an effect, but it is to be noted that pro-natalist measures undertaken by Governments have had a history of limited success. Clearly the most important factors rest with the individuals themselves.

Mortality

The recent slow-down in progress seems to be a widespread, though not universal, feature of recent mortality trends in all parts of the world. In some places this slow-

down is manifested by a cessation in mortality decline. The explanation for this development differs for various parts of the world. For countries where mortality was already very low the recent trend can be attributed to the technical difficulties in achieving additional improvements. The recent trend in areas where mortality remains well below the optimum level can be explained only in terms of the economic, social and technological difficulties faced by the countries involved.

All of the more developed countries have made significant improvements in life expectancy during the past quarter of a century. Equally important, the dispersion of life expectancies about the mean has diminished during recent years, but the gap between male and female life expectancy does not seem to have changed very much. The most recent data available show a female life expectancy for the more developed countries ranging from 70 to 78 at birth during the early 1970s. At the same time, male life expectancy varied from 64 to 72 years, and averaged six years less than the corresponding female figures. The three top-ranking countries, in terms of average life expectancy during the early 1970s, are Japan, Norway and Sweden, with a male life expectancy of between 72 and 73 years and a female life expectancy of 78 years at birth. Concurrently, the lowest life expectancy among the more developed countries is in Yugoslavia, Portugal and the USSR for males, with a life expectancy of about 64-65 years, and in Yugoslavia, Albania and Northern Ireland for females, with a life expectancy of about 70 years at birth.

It is still not possible to determine levels of mortality—much less trends—in sub-Saharan Africa with any degree of confidence. However, the evidence points to a life expectancy in all countries (except the small, unrepresentative islands of Martinique, Réunion and the Comoros) of well below 50 years at birth. As a whole, it seems that sub-Saharan African mortality levels remain the highest in the world and that the countries of the area have made the least progress during recent years in lowering mortality. Moreover, while there is evidence of slight improvement, there is a concern that mortality conditions may have deteriorated in some places during the past decade.

Mortality levels can be determined with a greater degree of confidence for most of Northern Africa. In all but two of the countries, life expectancy currently falls in the medium range of 50-60 years at birth. The only countries whose levels are in doubt are Morocco, which has an estimated life expectancy in the vicinity of 50 years and may belong in either the medium or high range, and the Sudan, which almost certainly falls in the high range of less than 50 years.

Asian data also indicate that mortality declines have slowed down in recent years. The Asian situation in the early 1970s may be summarized in the following manner for those places for which reasonable estimates can be made. Six relatively small countries and territories can be placed in the low-mortality category (life expectancy at birth higher than 60 years): Hong Kong, Singapore, Peninsular Malaysia, Lebanon, Kuwait and the Republic of Korea. Ten appear to belong in the medium mortality range (life expectancy at birth 50 to 60): China, the Democratic People's Republic of Korea, Thailand, the Philippines, Sarawak, Jordan, Iran, Iraq, the Syrian Arab Republic and Mongolia. Eleven can be placed in the high-mortality category (life expectancy at birth below 50): Bangladesh, Burma, India, Pakistan, Nepal, Saudi Arabia, Yemen,

TABLE 3. ESTIMATES AND PROJECTIONS OF CRUDE DEATH RATES AND LIFE EXPECTANCY AT BIRTH
(BOTH SEXES), 1965-2000

Major areas and regions	Crude death rates (per 1,000)						Life expectancy at birth (years)					
	1965- 1970	1970- 1975	1975- 1980	1980- 1985	1985- 1990	1995- 2000	1965- 1970	1970- 1975	1975- 1980	1980- 1985	1985- 1990	1995- 2000
World total	13.1	12.0	11.3	10.6	9.9	8.7	54.5	56.2	57.6	59.3	61.1	64.5
More developed regions	9.1	9.2	9.4	9.7	9.9	10.1	70.4	71.2	71.9	72.4	72.9	73.7
Less developed regions	14.8	13.2	12.0	10.9	9.9	8.3	51.4	53.5	55.2	57.1	59.2	63.2
Africa	20.4	18.8	17.1	15.4	13.7	10.6	44.5	46.5	48.8	51.0	53.4	57.9
Eastern Africa	21.3	19.9	18.3	16.6	14.8	11.4	43.2	45.0	47.2	49.5	51.9	56.6
Middle Africa	23.4	21.6	19.6	17.6	15.6	12.0	40.6	42.6	45.1	47.6	50.1	55.0
Northern Africa	17.5	15.6	13.9	12.3	10.8	8.4	49.1	51.4	53.9	56.2	58.5	62.7
Southern Africa	13.0	12.3	11.0	9.8	8.7	7.1	55.3	56.5	58.9	61.0	63.1	66.7
Western Africa	22.5	20.6	18.8	17.1	15.2	11.6	41.8	44.0	46.2	48.5	51.0	56.0
Latin America	10.3	9.3	8.4	7.7	7.0	6.0	59.4	61.3	63.4	65.3	66.9	69.7
Caribbean	10.4	9.4	8.6	8.2	7.9	7.4	60.6	62.0	62.9	64.2	65.3	66.8
Middle America	10.6	9.3	8.1	7.3	6.5	5.4	59.3	61.7	64.2	66.0	67.6	70.0
Temperate South America	9.0	8.7	8.8	8.8	8.9	9.0	65.3	67.1	68.4	69.1	69.7	70.9
Tropical South America	10.5	9.5	8.4	7.6	6.8	5.7	58.3	60.3	62.5	64.5	66.4	69.7
Northern America	9.3	9.2	9.0	9.2	9.4	9.8	70.5	71.9	73.1	73.4	73.6	74.1
East Asia	10.7	9.1	8.6	8.1	7.9	7.8	59.8	63.4	64.8	66.6	68.2	70.7
China	11.2	9.4	8.8	8.3	7.8	7.7	59.1	62.6	64.0	66.0	67.7	70.3
Japan	6.9	6.6	6.5	7.2	7.9	9.4	71.2	73.4	75.1	75.3	75.5	75.2
Other East Asia	10.1	8.7	8.0	7.4	7.0	6.6	58.3	61.1	63.0	65.1	66.8	69.4
South Asia	17.6	15.8	14.0	12.5	11.1	8.8	47.6	49.6	51.8	54.1	56.5	61.0
Eastern South Asia	17.3	15.2	13.3	11.8	10.5	8.4	48.2	50.4	53.0	55.4	57.8	62.0
Middle South Asia	17.9	16.3	14.5	12.9	11.4	9.0	47.0	48.7	50.9	53.2	55.5	60.3
Western South Asia	15.7	13.8	12.4	11.1	10.0	8.0	58.9	59.7	61.8	63.7	65.5	68.6
Europe	10.3	10.4	10.6	10.8	10.9	10.7	70.6	71.3	72.0	72.7	73.3	74.3
Eastern Europe	9.7	10.3	10.4	10.5	10.5	10.2	69.8	70.1	70.9	71.6	72.4	73.4
Northern Europe	11.2	11.3	11.5	11.8	12.0	11.8	71.9	72.5	72.9	73.5	74.0	74.8
Southern Europe	9.3	9.2	9.0	9.2	9.6	9.8	69.7	71.0	71.8	72.6	73.2	74.3
Western Europe	11.2	11.1	11.6	11.7	11.7	11.3	71.3	72.0	72.9	73.5	74.0	74.7
Oceania	10.2	9.4	9.0	9.2	8.6	8.5	64.5	65.7	65.8	66.0	67.8	69.9
Australia-New Zealand	8.9	8.1	7.9	8.5	8.1	8.6	71.9	72.4	73.1	73.7	74.3	74.7
Melanesia	18.6	16.9	15.2	13.6	12.0	9.1	46.0	48.2	50.7	53.2	55.7	60.5
Micronesia-Polynesia	8.7	7.8	7.0	6.5	6.1	5.6	61.0	62.9	64.4	65.8	67.1	69.7
Union of Soviet Socialist Republics	7.6	7.9	8.9	9.4	9.7	10.0	69.5	69.4	69.7	70.1	70.6	71.6

Democratic Yemen, Indonesia, Democratic Kampuchea and Sabah.

Among the less developed countries, mortality conditions are best documented in Latin America, and all of the 28 countries and territories with a population of 250,000 or more can be classified with reasonable ease according to the scheme used above. By the mid-1970s only Haiti and Bolivia remained in the high-mortality category. The Dominican Republic, Guatemala, Honduras, Nicaragua, El Salvador, Ecuador and Peru fell in the medium mortality range, with a life expectancy of 50 to 60 years at birth. Brazil and Colombia appear to be about on the line between medium-mortality and low-mortality zones. All of the remaining areas, most notably those in the Caribbean and the three countries of Temperate South America, could be classified as low-mortality areas. Within the low mortality group, most life expectancies fell within the range of those for the more developed countries. However, there has been a marked slow-down in mortality declines during recent years in Latin America.

The data for Cuba are especially interesting in this regard. Cuba currently appears to have the highest life expectancy in Latin America, namely, over 70 years, which makes it the third-ranking country in the hemisphere. Cuba's achievement is especially impressive because it was brought about primarily through the extension of basic medical and public health services and the improvement of

the basic nutritional status. In contrast, Argentina, which may have had the highest life expectancy in Latin America around 1960, at present ranks rather low among the low mortality countries. In fact, since 1960 it appears that Argentina's life expectancy has declined. In the other countries of Temperate South America mortality also seems to have ceased to decline. The reasons for these recent developments are not known.

Age and sex patterns

Among the more developed countries in the early 1970s, mortality was lower at all ages, on average, in the countries of Northern and Western Europe, and Northern America and Japan, than it was in Southern and Eastern Europe and the USSR. The greatest variations in age specific death rates occurred in the first year of life and in the age group from one to four years. The range of infant mortality rates in the early 1970s, among the more developed countries, was, for males, 9.1-42.9 deaths per 1,000 live births, and for females, 7.5-37.6. Sweden had the lowest rate for each sex, whereas Portugal had the highest male rate and Yugoslavia had the highest female rate. Sweden also had the lowest rates for the age group 1-4 years, namely, 0.3 to 0.4 per 1,000 persons at risk for females and males, respectively. Romania had the highest rates, namely, 1.8 and 2.1. As can be seen, infant mortality rates varied from 20 to 25 times the

corresponding childhood mortality rates and the maximum rates for each age group averaged from five to six times the minimum ones.

The information available for sub-Saharan Africa provides no basis for thinking that there were any significant improvements in the early 1970s in infant mortality. At the national level, the rates for virtually all the countries in that region must still be in the vicinity of 200 deaths per 1,000 live births. The rates for Northern Africa can be given with more certainty. All exceed 100, but except for the Sudan they are likely to be in the 125-200 range. In both Asia and Latin America the infant mortality rates cover a greater range. In Latin America the range is from about 30 to less than 150, if Haiti and Bolivia are excluded, but up to 160 or 170 if they are included. However, the majority of the Latin American infant mortality rates are well below 100. The range for Asian countries and Territories runs from as low as 14 or 15 in Singapore and Hong Kong to, perhaps, 200 or more in Afghanistan and a few other high-mortality areas. In the large populous nations of South Asia, infant mortality rates seem to remain well above 120 deaths per 1,000 live births.

The evidence for Asia, Latin America and Northern Africa indicates that very substantial progress has been made in reducing infant mortality during the past quarter of a century, but also that the rate of improvement has slackened in recent years. In several Latin American areas the reported infant mortality rates have increased in recent years, but it cannot be determined as yet whether these changes reflect random variations or secular trends.

Another feature of infant mortality rates that is common to all developing areas where it can be measured properly is an apparent divergence among national levels. Generally, rates appear to have dropped faster in areas that already have low mortality than in high-mortality countries. This assertion applies equally well to childhood mortality rates.

In the developed countries male mortality rates exceed female rates at all ages. In the early 1970s the excess male mortality was least among the ages under five years and the oldest ages of 80 years and more. Male mortality rates were proportionately greatest in relation to female rates in the ages from 15 to 29 years. At these ages male rates were commonly at least twice the female ones, and where they were the highest, accidents were the leading cause of death. However, the leading causes of death, regardless of the actual death rates, were the same for males and females. During infancy the leading causes of death are currently the endogenous ones of the prenatal and neonatal periods, followed by pneumonia and influenza. From age 1 year to the 20s, accidents are usually the leading cause of death, followed by malignant neoplasms. From the 20s and throughout the remainder of the life span, cardiovascular diseases and malignant neoplasms are the two leading causes of death.

As in the developed countries, male mortality rates in Latin America have been generally higher than female rates at any given age. In contrast, it appears that in certain age groups female mortality exceeds male mortality in parts of both Asia and Northern Africa. In the latter, female mortality has been consistently found to be higher than male mortality between ages 1 and 4 years, for reasons that have not been fully explained yet. Only four Asian countries, all in the medium and high mortality ranges, provide sufficiently reliable data to demonstrate conclusively that female mortality exceeds male mortality. The four countries are Iraq, India, Pakistan and Sabah. The reasons for this remain ob-

scure but seem to be rooted in cultural attitudes, discrimination against females and the particular hazards of bearing children under such circumstances. In the four countries just mentioned, female mortality is higher than male mortality at most or all ages. However, other than these situations, the common feature of recent data for Asia and Northern Africa show the same excess of male over female mortality as that found in the more developed countries and Latin America.

Causes of death

Reliable information on cause of death, and particularly that which pertains to recent developments, comes almost exclusively from the more developed countries. Perhaps the most interesting recent development in the more developed countries has been among the cardiovascular diseases, which appear to have increased only in some Eastern European countries. Even in these countries, however, it is unclear just how much of the observed increase is real and how much stems from improvements in statistics on cause of death. In recent years, the general trend in the age group of 35 years and over has been for cardiovascular disease death rates to decline, the largest drop occurring in the United States of America and Japan, where the male rate decreased by 17 and 22 per cent, respectively, and the female rate by 22 and 17 per cent, respectively. The reduction in deaths from these diseases appears to be strongly related to campaigns to alert people to the causes of the diseases and the preventive measures they can take. Campaigns designed to point out the dangers of smoking and improper dietary and exercise habits and to identify and treat high risk individuals seem to have been particularly effective.

Despite data limitations, it is clear that the infectious and parasitic diseases—which have been largely eliminated as significant causes of death in the more developed regions—still account for a very large proportion of all deaths in developing countries, especially among the very young. If to these are added the deaths either caused by or associated with nutritional deficiencies, the proportion rises to a sizable majority of all deaths. The number of deaths from the above causes can be reduced dramatically at relatively modest costs, and most of them must be characterized as preventable.

Concluding remarks

It is evident from the data available for developed countries that the most rapid progress in reducing mortality rates has also occurred in precisely those areas where it was already the lowest. The previously assumed "floor" for mortality rates is thus dropping continually, at a rather rapid pace, and the gap between the lowest and highest rates is consequently increasing. Both high perinatal and maternal mortality rates are, like all high-mortality situations, becoming exclusively the problem of the poverty complex: the rates are highest among the poor, and among them they are highest among the high-parity, very young or very old mothers, when gestation and childbearing intervals are shorter than optimum and general health and nutritional statuses are low.

There are no discernible patterns of urban-rural differentials in mortality in the more developed countries. In less developed countries, however, most evidence points to lower urban than rural mortality. Where this has not been the case, it can tentatively be attributed either to the quality

of the data or to a lack of control for other variables. Thus, within a given level of aggregation, it would appear to be true that urban mortality is lower than rural, but if data were controlled for socio-economic structure, different patterns might emerge. As the Cuban experience demonstrates, the socio-economic differentials—hence, the urban-rural differentials—can be dramatically narrowed and, perhaps, practically eliminated if the basic public health, medical, educational, nutritional and environmental needs of all people are met. From this perspective, all countries and all agencies involved in assistance to developing countries have an important contribution to make.

International migration

International migration continues to show significant shifts in pattern and direction. Broadly speaking, the current flows may be characterized as predominantly a movement from less developed towards more developed countries, both between and within the developed and developing regions of the world. Secondly, the numerically more important pattern has become one of movement across international boundaries of workers and members of their families, ostensibly (and in the eyes of the sending and receiving Governments) for a temporary stay. Thus, international migration has come to reflect in particular the prevailing international economic order.

The one leading exception to these comments is found in the developed countries with centrally planned economies. For countries in that region, with the exception of Yugoslavia, international migration is numerically not very significant.

Some substantial shifts in the patterns of international migration have occurred in the flow of workers into Organization of Petroleum Exporting Countries (OPEC) of the Middle East and North Africa. It is estimated that the total number of such workers is now well in excess of 2 million. The migrants come from countries within the region that lack substantial petroleum resources and there are growing numbers from Pakistan and India. There are smaller flows from Turkey, the Republic of Korea and the Philippines, as well as from Europe and North America, and comparatively small numbers from sub-Saharan Africa and elsewhere in Asia. In many of the receiving countries, migrant workers comprise a very substantial proportion of the total labour force; for example, in Kuwait, Qatar, the United Arab Emirates and Oman, migrant workers fill over 65 per cent of all positions in the labour force. In Saudi Arabia, Bahrain and the Libyan Arab Jamahiriya they supply over 33 per cent. Although the total value of remittances by migrant workers is difficult to measure with precision, it is clear that the amounts are very significant indeed. According to recent estimates, it has reached a money amount of well over a billion dollars annually, and for many sending countries is equivalent to a very significant proportion of the cost of all imports—typically running between 7 and 20 per cent.

Another region in which international labour migration has a numerically significant role is Western Africa. Patterns of movement are rather complex but the predominant flow is from countries of the interior towards the coast. Among the more important receiving countries are the Ivory Coast, Ghana and Senegal. Some of the leading countries of origin include the Upper Volta, Mali, Togo and Guinea. In recent years, migration to the Ivory Coast has been particularly important; over 20 per cent of the current population

originated outside the country, over half of the immigrants being from the Upper Volta.

Elsewhere in Africa, the movement of workers from nearby countries into South Africa has been historically important. In recent years, however, the number has been very substantially reduced.

In Latin America, Venezuela and Ecuador have begun to experience significant increases in immigration, some proportion of which is undocumented. There are also notable flows into Argentina.

As of about 1975, the countries of Northern and Western Europe were estimated to have about 14 million aliens in their populations—some 7 per cent of the total. In individual countries the percentages were notably higher, particularly in Switzerland and Luxembourg. The estimated number of immigrants who were temporary workers from outside Northern and Western Europe was about 6.5 million. However, the inflow of new worker migrants was brought to a nearly complete standstill around 1974 as a result of the economic slow-down and has not been revived. The number of foreign workers has declined since its peak—by about 10 per cent from 1974 to 1976.

Most of the migrants to the Northern and Western European countries came from nearby: the nations of Southern Europe, Ireland, Finland, Turkey and North Africa. The United Kingdom also received large numbers of immigrants from Commonwealth and former Commonwealth countries. Some of the countries of Europe also received significant numbers of returning citizens from former colonies.

It is estimated that there are a significant number of undocumented migrants in the leading countries of labour immigration in Europe. A common conjecture is that there is one undocumented guest worker for every 10 who are documented, but the number is, of course, impossible to verify.

Generally, as far as Europe is concerned, there has been a decline in the numbers moving internationally. There continues, however, to be a flow of emigrants both within Europe and from Europe to countries overseas. For example, the United Kingdom and Italy currently have a net overseas emigration of about 25,000 to 30,000 per year.

The other developed countries of large-scale international migration—Australia, Canada, New Zealand and the United States of America—have had comparatively little experience with temporary labour migration. New Zealand has had some guest workers from the islands of the Pacific and the United States has a substantial inflow of undocumented migrants, chiefly from Mexico, Colombia and other countries of Central America and the Caribbean, which bears a functional resemblance to temporary labour migration. However, the predominant pattern has continued to be of immigration for the purpose of long-term resettlement.

International migration has had a marked impact on the populations of each of the four countries. In Australia about 20 per cent of the population is foreign born; in Canada and New Zealand the proportion is around 15 per cent, and in the United States about 5 per cent. The United States is estimated to have a net immigration of about 350,000 annually and Canada somewhat less than 100,000; 60,000 are estimated as immigrating to Australia and just over 15,000 to New Zealand.

Traditionally, these countries drew most of their immigrants from Europe. Beginning somewhere in the 1960s, there was a shift of origin and each began to receive increas-

ing proportions of its immigrants from countries of Africa, Asia and Latin America. As a matter of policy, each of the countries has moved away from giving preference to immigrants of European origin. All now receive substantially less than 50 per cent of their immigrants from Europe—between some 40 per cent in Australia and 18 per cent in the United States.

Undocumented migration has been a matter of policy concern in all of the countries. Canada and Australia have tried amnesties to regularize the status of long-term undocumented immigrants, with somewhat limited success. In the United States, where undocumented migrants are thought to comprise some 2-3 per cent of the total population, a variety of proposals are actively under discussion.

Each of the countries has to some extent been a beneficiary of the inflow of highly trained migrants—the “brain drain”. Prevailing economic conditions and internal policy considerations may currently have the effect of reducing that inflow, however. In the United States, for example, newly enacted regulations will make it substantially more difficult for foreign medical graduates to enter the country and practise. In Canada, there has been a reduction in the total number of persons admitted on the basis of their occupational skills.

Urbanization and population distribution

Reflecting high rates of natural increase, the world's urban and rural populations alike are growing rapidly. Urban populations grew by an estimated 206 million between 1970 and 1975. Of this growth, 31 per cent occurred in the more developed regions and 69 per cent in less developed ones. The more rapid urban accretion in less developed regions has raised their urban populations slightly beyond those of the more developed countries, whose urban population constituted 49.2 per cent of the world's total in 1975. By 2000, this figure is projected to decline to 34.1 per cent as urban growth continues at a more rapid rate in developing countries. In fact, the projected gain of 1.32 billion in the urban population of developing countries by 2000 is nearly double the total urban population of more developed countries in 1975 (768 million). Africa's annual urban growth rate of 4.94 per cent is the highest of any major region.

Of the world's rural population, 85 per cent lives in less developed countries at the present time, and the figure is projected to grow to 90 per cent by 2000. The projected rural increment of 714 million between 1975 and 2000 in developing countries represents a growth factor of 35 per cent during this quarter of a century. On the other hand, rural populations of more developed countries are in the midst of a slow decline that is projected to continue until the end of the century. There is more uncertainty attached to this projection because of recent indications that urbanization has slowed down or even reversed itself in several more developed countries such as Japan, Sweden, Norway, Italy and the United States. Many factors have been invoked to account for this “turn-about”. Continued improvements in transportation and communication may have reduced the economies of agglomerating into very dense aggregates (while the much poorer transport systems of less developed regions offer continued incentives to agglomerate into areas that facilitate face-to-face interaction); an increase in government transfer payments as a fraction of the national product may have allowed larger proportions of the population to take up residence in smaller areas without economic sacrifice; economic recession may have inhibited

the formation of new firms which tend to establish themselves in smaller areas without economic sacrifice; economic recession may have inhibited the formation of new firms, a disproportionate number of which tend to take up business in large cities; high income elasticities of demand for outdoor recreational opportunities may have led increasing proportions to establish themselves outside a metropolis; and government deconcentration policies may have had an effect in certain places. Sorting out these and other influences will prove very difficult, and can scarcely begin until the 1980 round of censuses provides more data on the types of cities involved in the turn-about and on its breadth and continuity.

In 1975, an estimated 39.3 per cent of the world's population lived in urban areas (67.8 per cent in more developed regions and 27.9 per cent in less developed ones). The average annual gain in the urban percentage between 1975 and 2000 is projected at 0.61 percentage points in less developed regions and 0.50 percentage points in more developed ones. The projected gain for the world as a whole is only 0.48 percentage points. The world is urbanizing less rapidly than either the more developed or the less developed regions simply because regional differentials in rates of demographic growth are giving increasing weight to the less urbanized regions. If the projections prove to be accurate, the next century will begin just after the world's population achieves an urban majority; in 2000 the world is projected to be 51.25 per cent urban. Nevertheless, in Eastern Africa, Western Africa, China and South Asia rural residents are still expected to outnumber urban residents by more than 50 per cent.

Recent estimates prepared in the Population Division suggest that most of the urban growth in less developed countries results from the natural increase of the urban population. Of the 29 developing countries whose data are sufficient to support an analysis of components of change, an average of 60 per cent of the urban growth between the last two censuses was ascribed to this source. The remaining 40 per cent is attributable to net migration from rural areas and to a reclassification of places from the rural to the urban category. The fraction of growth attributable to migration or reclassification seems relatively stable over a period, with, perhaps, a slight tendency to decline. In more developed countries, on the other hand, the figures are nearly reversed: an average of 59 per cent of intercensal growth in 20 countries was attributable to migration or reclassification, of which the reclassification component is undoubtedly quite important.

Among developing countries, net rural-urban migration seems to be a more important contributor to urban growth in countries that are more advanced economically and where economic growth has been relatively rapid (e.g., Puerto Rico, the Republic of Korea and Turkey). A more detailed investigation of the intercensal rates of net rural-urban migration supports this inference. Rural net outmigration is highly and positively correlated with a country's level of gross national product *per capita*. It is also highly and significantly correlated with a nation's growth rate of labour productivity in agriculture. Viewed in a comparative context, rural-urban migration seems to play a less erratic and disruptive role in economic and social development than sometimes appears to be the case at a national level.

Urban growth is not evenly distributed among places of different size. An examination of the latest intercensal growth rates for the 1,338 cities that had a population of more than 100,000 at the initial census reveals that, in

more developed countries, city growth rates are negatively related to city size. The fastest-growing cities are those in the 100,000-250,000 population range (averaging a growth rate of 2.23 per cent annually), while cities with a population of over 4 million grow at an average rate of 1.56 per cent. Among less developed countries the pattern is U-shaped, the fastest growth (3.90-3.95 per cent annually) occurring in both the smallest and the largest size categories, with a minimum of 3.08 per cent for cities in the 1-2 million range. In both groups of countries, the variability of growth rates declines systematically as size increases, reflecting a greater inertia in growth patterns among the larger cities.

Far more important than city size as an influence on city growth rates is the population growth rate of the country in which the city is situated. The simple correlation between the city growth rate and the national growth rate for these 1,338 cities is 0.50. Within every size class of city, those situated in faster-growing populations are themselves growing at a faster average rate. In view of the multiple and complex influences on a particular city's growth, it is perhaps surprising to find any one influence standing out so vividly.

Age structure

A population's age structure is a product of its past history of fertility, mortality and migration. Mortality reductions tend to inflate the proportions of the population that are in the ages of childhood and in the very high ages. Fertility reductions, on the other hand, invariably make a population older and decrease the proportion in the childhood years. In many developing regions, recent fertility declines have more than offset the effects of mortality declines, with the result that the proportion of the population that is below age 15 has fallen. The proportion in this age interval fell between 1970 and 1975 in less developed regions as a whole and particularly in the Caribbean, Middle America, Temperate South America, Eastern South Asia and Middle South Asia. The largest decline, more than 1 percentage point, is estimated to have occurred in South America. However, in Eastern, Western and Southern Africa, the proportion in the childhood ages is estimated to have risen during this period, reflecting the effects of mortality declines and in some cases of fertility increases. An increase is also said to have occurred in Western South Asia. Although the changes in either direction during a short period are necessarily small and are only suggestive of long-term trends, they are especially noteworthy because they reverse a long-standing history of stability or slight increase in the youthful group. For example, between 1950 and 1970 the percentage of the population in less developed regions aged 0-14 years grew by 2.2 percentage points.

This recent reversal of long-standing demographic trends is expected to continue and even to accelerate during the remainder of the century. Between 1975 and 2,000, the medium variant projection implies a decline of 6.4 percentage points in the percentage of the population under age 15 in less developed regions. This decline represents 15 per cent of the total population that would have been in this age range in 2000 had the 1975 age distribution been maintained. Between 1985 and 2000 all the major less developed regions, including Africa, are expected to be sharing in the declining proportion of young people. Virtually all of the youthful loss will be absorbed by the working ages of 15-64 years. The proportion over age 65

is expected to grow by less than 1 percentage point in the last quarter of the century. The result is that the burden of dependency in developing countries is expected to decline continuously for the remainder of the century. In 1975, a person of labour-force age "supported" an average of 0.80 persons outside the labour-force age; by 2000 the figure is expected to have declined to 0.64, a decrease of 20 per cent.

Among the more developed countries the aging of the population has been even more rapid and pronounced. Between 1970 and 1975 the percentage of the population in the age group 0-14 years declined from 27.1 to 25.3. This decline of 1.8 percentage points was absorbed in equal parts by the working ages and by ages 65 and above. Although all the developed regions experienced a rise in the proportion of aged people, the increase was more rapid in Europe than elsewhere. By 1975, the percentage in the retirement years exceeded 13 in Western Europe and Northern Europe, whereas it was still less than 9 in the USSR, Australia-New Zealand and Japan. By 2000, the percentage over age 65 is expected to be 12.8 in the more developed regions as a whole. The age distribution in developed regions is approaching with considerable speed the age distribution of a stationary population with a life expectancy at birth of 70 years. In a typical population with this life expectancy at birth and zero growth, about 21 per cent of the population is under age 15, 64 per cent is aged 15-64, and 15 per cent is above age 65. By 2000, the percentage of the population in more developed regions in these age ranges is projected to be 22.2, 65.1 and 12.8. In Western Europe, the stationary stage will be even closer at hand, with corresponding percentages of 18.2, 66.9 and 14.9. The achievement of stationary age distributions, with their attendant problems of reduced intragenerational mobility and increased proportion of retirement-aged persons, is for all practical purposes less than a generation away in developed regions.

POPULATION AND DEVELOPMENT

Trends in population and development in the 15 years between 1960 and 1975 reveal a mixed pattern of substantial progress in some respects and stagnation and deterioration in others. Thus, for the developing countries as a whole economic growth has been substantial and, in a historical perspective, even high. Gross domestic product at constant prices in these countries (excluding China) sustained an average annual rate of increase of the order of 5.5 per cent and *per capita* gross domestic product rose from somewhat less than \$170 in 1960 to \$260 in 1975. However, despite this rapid growth, the gap in average *per capita* product between developed and developing countries was not reduced. In absolute terms the difference in product *per capita* between developing and developed market economies increased and the ratio increased slightly to about 1 to 13. Moreover, within the group of developing countries income differentials widened. Countries with a *per capita* gross product of \$200 or less in 1970 experienced in the 1960-1975 period substantially lower growth in total and *per capita* product (about 4.0 and 1.5 per cent annually, respectively) than countries with *per capita* products between \$200 and \$400, where total and *per capita* product increased at average annual rates of the order of 5.4 and 3.3 per cent, respectively. Economic growth in the latter group in turn remained below

that in the group of developing countries that in 1970 had a *per capita* product of \$400 or more. In this group average annual growth rates for total and *per capita* were about 6.7 and 3.8 per cent, respectively, for 1960-1975.

Similar patterns of relatively favourable changes in combination with other negative aspects are also found in demographic trends when they are compared with economic growth trends. A crucial aspect in this regard is the issue of fertility behaviour. There are indications, as noted before, of a decline of fertility in a substantial number of developing countries during the 1960-1975 period, and especially in the latter part of this period. However, according to available estimates, these declines have been concentrated mostly in countries in the higher range of economic development. Only in the group of countries with a *per capita* gross domestic product in 1970 of \$400 or more are present crude birth rates in the lower 30s per 1,000. In the next lower group (with a *per capita* product of between \$200 and \$400), the birth rates are still of the order of 40 per 1,000. In the lowest income group (*per capita* product under \$200 in 1970) the birth rate is still well above 40 per 1,000. With a still high mortality, these countries, besides having a lower economic growth, also have the highest long-term population growth potential. Moreover, despite the increasing signs of declining fertility, other data based on a somewhat different grouping of countries strongly suggest a continued dichotomy in fertility levels, with a *per capita* gross product of about \$750 in 1970 separating the high-fertility from the low-fertility countries.

A more detailed analysis of the association between fertility and a number of different social and economic indicators in developing countries points to the conclusion that changes in fertility appear to have occurred independently of changes in the selected socio-economic variables. By the same token, only a weak relation would seem to exist between fertility changes and levels of socio-economic variables. However, confirmation was found of a comparatively stronger relation between levels of fertility and levels of the majority of social and economic indicators. To the extent that these observations permit a generalization, they suggest that the achievement of a given level of socio-economic development rather than the pace of development remains the most important factor in bringing about fertility transition.

Both progress and setbacks are also evident in such sectoral trends as food and education. A recovery in food production and slow improvements in *per capita* calorie supplies in developing countries in recent years have not improved the food situation or reduced the gap between requirements and supply. In fact, declines in *per capita* food production in recent years have been widespread, showing a further deterioration in Africa in particular, where *per capita* food production has been declining for a long time. In general, the number of developing countries in which growth rates of food production remained below those of population increased from 56 in the 1960s to 69 in the first half of the 1970s. In education, substantial progress was made in school enrolment, with, for instance, an increase in the enrolment of 6-11-year-olds from 46 to 62 per cent between 1960 and 1975, but the number of those out of school in developing countries rose by 10 per cent in the same period. Rapid progress in school enrolment was, moreover, associated in the developing countries with a steep increase in the educational dependency ratio, in terms of pupils per working person. This ratio for the developing countries, which was 281 per 1,000 in 1965 (sim-

ilar to the figure of 295 pupils per 1,000 working persons in developed countries) increased to 338 per 1,000 by 1975, while the ratio for developed countries fell to 258 per 1,000.

Demographic aspects of intercountry income distribution

Relations between level of income and selected demographic indicators, 1975

In 1975 the poorest 20 per cent of the population of the world, living in 12 countries, received only 2 per cent of the income generated in all countries, while a share of 69 per cent accrued to the richest 20 per cent of the people, who lived in 34 countries. By comparing data for 1960 with the 1975 data, it can be seen that the population in the second richest quintile was the only group to experience an increased share, from 18 per cent in 1960 to 21 per cent in 1975.

The inequalities in the distribution of world income and population between the economically developed and the developing countries were, as might be anticipated, very striking. The developing economies, with about 71 per cent of the world's population, obtained only 18 per cent of the world's income in 1975. The developed market economies, with 20 per cent of the total population, accounted for 66 per cent of the world's income and the centrally planned economies of Eastern Europe and the USSR, with 9 per cent of the total world population, had 16 per cent of the world's income. The average *per capita* income of the developed market economies was about 13 times that of the developing economies, and in the case of the centrally planned economies the average was about seven times that of the developing countries.

The distribution of income within each of these three broad groups varies substantially from group to group, and it is especially skewed within the group of developing countries. The degree of concentration, as measured by the Gini coefficient, for the centrally planned economies was 0.053 and within this group the *per capita* income in the highest income country was only 1.7 times that of the lowest. For the developed market economies as a whole the Gini coefficient was significantly higher, 0.254, and the *per capita* income of the highest income countries was over six times as large as that of the lowest income. In the case of the developing countries the within-group differences in *per capita* income were considerably larger. Within this group the highest quintile received 49 per cent of the group's income; in comparison the lowest two quintiles accounted for only 7 and 9 per cent, respectively, of the total. The ratio between the *per capita* income of the richest and poorest countries was about 34 to 1 and the Gini coefficient was 0.421.

The findings with respect to the international distribution of income are not significantly different if the effects of the demographic composition (specifically the sex and age structure) are taken into account. Inequality in size distribution of income by country could be exaggerated by the differences among countries in total consumption needs arising from a different sex and age composition and in the influence of the relative size of the labour force on production (due to differences in sex-age composition and participation rates). To allow for these two factors, population size was weighted both by the consumption requirements of different sex and age groups and by the numbers in the labour force, and the corresponding Gini coefficients were

computed for income per adult consumer equivalent and for income per worker. The resulting values, 0.650 and 0.655 respectively, were very close to the value of 0.658 previously obtained in the case of income *per capita*, thus indicating that these demographic differences were not a major factor in the international distribution of income.

A comparison of selected demographic indicators (population growth, fertility, mortality, adult population ratio and urban population proportion) for different income groups reveals for most of these variables a clear dividing line at the \$750 *per capita* income level at 1970 prices: above this level values of demographic variables were on the whole typical for countries that had completed the demographic transition; below it the values were more representative of countries in the transitional as well as the pre-transitional states.² The average values of those demographic variables for countries in the income groups immediately below and over \$750 are illustrative in this respect. The individual readings were weighted by population size.

Weighted average of indicators for groups with per capita income level at 1970 prices

	\$350-\$749	\$750-\$1,999
Rate of population growth (percentage)	2.80	0.90
Rate of natural increase	2.77	0.92
Total fertility rates (number of children per 1,000 women)	5 426	2 476
Life expectancy at birth (years)	60.4	70.8
Adult population ratio ^a (percentage)	53.6	64.3

^a Proportion among the total population of persons aged 15-64.

Furthermore, the average values of these variables for groups below or over this income level varied comparatively little, the exception being China. Excluding the latter, the range of variation of the indicators was:

Range of weighted indicators for groups with per capita income levels at 1970 prices

	Below \$750	\$750 and over
Rate of population growth (percentage)	2.50-2.90	0.90
Rate of natural increase	2.51-2.93	0.68-0.92
Total fertility rate (number of children per 1,000 women)	5 426-5 919	2 186-2 476
Life expectancy at birth (years)	49.9-60.4	70.8-73.1
Adult population ratio (percentage)	52.2-53.9	64.3-64.5

The exception is China, where levels of growth and fertility were well below the average level of other groups with a *per capita* income below \$750, although the indicators were still substantially different from those typical of high income countries.

Although the proportion of urban population increased in relative terms for successive income groups, mostly in the early and latter stages of economic development, no sharp dividing line existed at the \$750 income level. Besides, this pattern of change in the proportion of urban

² The 116 countries were grouped into seven income strata as follows: *per capita* income less than \$175; China; \$175-349; \$350-749; \$750-1,999; \$2,000 and over; and the United States of America. China and the United States are treated as separate income groups simply because of their larger share of world population and income, respectively.

population was not significantly associated with any pronounced change in fertility. In fact, the largest decline in fertility (between income groups \$350-\$749 and \$750-\$1,999) was accompanied by a relatively modest increase in the urban population proportion.

In general, the dividing line of \$750 seems to be most significant from a demographic point of view, while the cross-sectional observations would appear to support, to some extent, the theory of demographic transition. On the one hand, for the lower income group with a *per capita* income below \$750, the results show, with the exclusion of China, that the natural rate of increase rose from 2.6 to 2.9 as *per capita* income increased from less than \$175 to \$175-\$349 and then to \$350-\$749. The corresponding mortality of these groups decreased substantially: life expectancies at birth went up from 49.9 years to 57.7 and then to 60.4 years. Likewise, fertility decreased in the successive groups, but only slightly, from 5,919 children in the first group to 5,426 in the third. On the other hand, the demographic indicators for the higher income groups, those in the income group \$750 and over, are illustrative of the final stages of transition. Mortality, although already low, shows a further moderate decline between the income groups \$750-\$1,999 and \$2,000 and over (with a life expectancy at birth increasing from 70.8 to 73.1 years) as does fertility (from 2,476 to 2,196 children per 1,000 women). While the data thus tend to be in conformity with the theory of demographic transition, they only represent the initial and final stages of transition and they do not shed much additional light on the critical phase of accelerated fertility decline.

Although in general the groups, and most countries within each group, conformed to the patterns described above, a number of countries deviate, revealing levels of demographic variables different from the typical ones observed and suggesting that levels of *per capita* income cannot by themselves explain differences in demographic behaviour among countries. The most important case in this respect was China, which has low levels of fertility and mortality compared with other countries in the same income brackets. The estimated fertility in China, 3,362 children per 1,000 women, was much closer to that typical of countries nearing the completion of their transition, that is, the group with a *per capita* income between \$750 and \$1,999, than to the \$350-\$749 income group. Likewise, mortality in China (with an estimated expectation of life at birth of 63.6 years) was lower than the average for the countries with *per capita* incomes between \$350 and \$749. Other cases also exist, Cyprus, Mauritius and Sri Lanka among others, which had comparatively low fertility rates, suggesting that they were already in a more advanced stage of fertility transition than other countries in the same income groups. In contrast, other countries, such as Saudi Arabia, Iran, Gabon, Venezuela, the Libyan Arab Jamahiriya and Kuwait, all of them petroleum-exporting countries, as well as Israel, had comparatively high fertility rates in relation to other countries in their own income groups. These observations emphasize the importance of other development factors in regard to demographic transition.

Interperiod changes in levels of income between 1960 and 1975

Despite a more rapid growth of income in the developing countries as a whole, as compared with the developed

market economies (but not with respect to the group of centrally planned economies), *per capita* income growth in the developing countries remained below that in the other two groups, owing to higher population growth. During the period 1960-1975, the growth of national income in the developing economies was 5.3 per cent per annum, 1.1 percentage points higher than in the developed market economies, but 1.3 percentage points lower than in the centrally planned economies. Population increased at a rate of 2.3 per cent per year in the developing countries, which was more than twice the rate in the developed market and centrally planned economies. Consequently, the rate of growth of income *per capita* in the developing countries was 2.9 per cent, compared with 3.1 per cent in the developed market economies and 5.5 per cent in the centrally planned economies of Eastern Europe and the USSR. Differentials in *per capita* income levels in absolute terms increased further, as annual absolute increments corresponding to these rates were, on the average, \$5, \$72 and \$52, respectively. It should be noted in addition that if countries are further divided by their level of *per capita* income in 1975 the differential increase in *per capita* income between 1960 and 1975 becomes even more pronounced.

The comparative deterioration of the relative income in the poorer countries compared with richer countries was associated, to some extent, with changes in demographic patterns, particularly a tendency towards higher population growth, in the economically less developed countries and a slowing down of population growth in the richer countries. For countries with a *per capita* income of less than \$750 in 1975 (excepting China), the rate of natural population growth in 1975 was higher than in 1960, the increment ranging between 0.02 and 0.18 for the different income groups. However, the corresponding rate for China decreased by 0.06. In contrast, for countries with a *per capita* income of \$750 or more in 1975, population growth in 1975 was lower than in 1960, the decrease ranging from -0.18 to -0.57 for the different income groups.

Association between levels and trends in fertility and in socio-economic variables in developing countries

Some further insight into the associations between socio-economic and demographic variables, specifically fertility, is provided by a comparison of the evolution of fertility and of socio-economic development in developing countries in the period 1960-1975. For this comparison, 12 variables associated with socio-economic development grouped into five broad categories were selected. These are: (a) *mortality indicators*—life expectancy at birth; infant mortality rates; (b) *education indicators*—proportion literate among the population aged 15 years and over; school enrolment ratio, first plus second levels for both sexes; (c) *status of women indicators*—ratio of the proportion of literate females to the proportion of literate males aged 15 years and over; ratio of the female school enrolment ratio to the male school enrolment ratio; proportion "ever-married" of women aged 15-19; proportion of women in the non-agricultural, economically active population; (d) *income indicators*—gross domestic product *per capita*; share of the poorer 40 per cent of the population in gross domestic product; (e) *urban-rural indicators*—proportion of the total population in urban areas; proportion of economically active males in non-agricultural activities.

Information on fertility for the period 1960-1975 was obtained for 87 developing countries, but 38 of these countries had only one fertility observation during the period, and a detailed analysis was made only for the 49 remaining countries, i.e., those for which it was possible to compute a fertility trend by taking the average annual change in the gross reproduction rate between the two extreme dates for which observations existed. Of the 49 countries, 14 were in Africa, 20 in Latin America and 15 in Asia.

It should be noted first that there is an inherent bias in an analysis based on actual observations of indicators, since such observations are more likely to exist in countries at a more advanced stage of development. In the above comparison, the differences were substantial between countries which, for the period under consideration, had two or more estimates of fertility and those for which only one estimate existed. Thus, in the former group the level of the crude birth rate was 17 per cent lower, life expectancy 39 per cent higher, infant mortality 43 per cent lower, literacy 56 per cent higher, school enrolment 32 per cent higher, female non-agricultural labour 20 per cent higher, gross domestic product *per capita* 97 per cent higher etc. Only income distribution and male non-agricultural labour showed no marked difference. Similar results are obtained when the criterion is the existence of data on changes and levels of the socio-economic variables. Indeed the existence of actual observations is itself a discriminating indicator.

Within the countries for which data were available, the analysis, which was carried out using a simple regression analysis of the gross reproduction rate against each of the 12 socio-economic variables taken one by one, suggested that for the period covered by the analysis there was little relationship between changes in fertility, on the one hand, and changes in socio-economic factors, on the other. The same holds true for the relation between changes in fertility and levels of socio-economic variables, but the evidence regarding the existence of a relationship was much stronger as far as levels of fertility and levels of socio-economic variables were concerned. The results would thus seem to indicate that if there is any relationship between fertility and socio-economic variables, on a cross-country basis, it is between the levels of these variables that the relationship exists, and not between their trends. These results should, however, be used with caution because of the questionable accuracy of the data on changes, and also because in many cases the changes, particularly fertility changes, were very small.

In the following paragraphs the results are discussed in greater detail. For the period 1960-1975 the data analysed suggest that changes in fertility may in most cases have occurred independently of socio-economic change. Fertility changes in 1960-1975 showed a moderately strong negative relationship with only two variables, the proportion of women in the non-agricultural labour force ($r = -0.62$) and the proportion literate among the population aged 15 years and over ($r = -0.55$). The relation between changes in the gross reproduction rate and changes in other socio-economic variables selected appeared to be weaker or virtually non-existent; absolute values of the correlation coefficient were equal to 0.25 or less in most cases.

As in the case of changes, the results suggest only a weak relation between changes in fertility and levels of socio-economic variables, even though, on the whole, correlation coefficients for the latter were a little higher than

for the former. A moderately strong relation was found between fertility changes and levels of two socio-economic variables, infant mortality ($r = -0.69$) and life expectancy ($r = -0.54$). Weaker associations were found for gross domestic product *per capita* ($r = -0.40$) and the proportion of those literate among the population aged 15 years and over ($r = -0.36$). The values of all other correlation coefficients were lower.

The data showed the strongest relation to be between levels of fertility and levels of socio-economic variables; for eight socio-economic variables the absolute values of the correlation coefficient between their levels and the gross reproduction rate were over 0.5. The variables, in order of magnitude of the apparent associations, were level of infant mortality ($r = -0.83$), life expectancy ($r = -0.71$), proportion of economically active males in non-agricultural activities ($r = -0.69$), proportion literate among the population aged 15 years and over ($r = -0.64$), gross domestic product *per capita* ($r = -0.61$), urban proportion of the total population ($r = -0.53$), share of the poorer 40 per cent in gross domestic product ($r = -0.51$), and proportion "ever married" of women aged 15-19 years ($r = -0.51$). The other correlation coefficients were below 0.5 but over 0.4 in absolute value, except in the case of the proportion of women in the non-agricultural economically active population, which had a low correlation coefficient ($r = -0.16$).

It is thus clear that the relation between levels and changes of fertility and the different groups of socio-economic indicators mentioned above does not reveal a systematic pattern. The change in the proportion of women in the non-agricultural economically active population (as an indicator of status of women) had the highest correlation coefficient with change in gross reproduction rate, but its level—or that of any other of the indicators of status of women—did not reveal any relationship with changes or levels of gross reproduction rate. On the other hand, changes in the two mortality indicators (life expectancy and infant mortality) were virtually unrelated to changes in gross reproduction rate, but their levels showed a strong or moderately strong relationship with both changes and levels of fertility. Of the education indicators, changes in the proportion literate among the population aged 15 years and over showed a moderately strong relation with changes in fertility, while levels of the same were moderately related with levels of fertility, but the relation between levels of proportion literate and change in fertility was weak. Of the economic indicators, changes and levels in *per capita* gross domestic product were weakly related to changes in fertility, but a moderately strong relation existed with regard to levels of gross domestic product *per capita* and gross reproduction rate. Finally, of the urban-rural indicators, only the level of proportion of economically active males in non-agricultural activities showed a moderately strong relation with the level of fertility, but neither levels nor changes in this socio-economic variable were related to fertility change.

In the long run, of course, it is not possible to maintain a relation between levels of fertility and development unless changes in these variables are also related to one another. The main point to be drawn from the present data and their analysis is that short-run changes in these variables are loosely related at present and allow considerable scope for other factors to influence fertility.

Demographic aspects of the integration of women: patterns of female participation

Considering that in the process of women's integration into development and its relation with demographic factors the role of women's employment is crucial, it is significant that the growth of female participation in the labour force has been one of the most important factors in labour force trends in the past decade and a half or so. According to estimates prepared by the International Labour Organisation (ILO), between 1950 and 1975 the female labour force increased at an average annual rate of 2.1 per cent compared with an annual rate for the male labour force of 1.4 per cent. As a result, the proportion of females in the total labour force increased from 31.3 to 34.9 per cent and the female crude activity rate from 27.5 to 29.0 per cent between 1950 and 1975.

A more rapid growth of the female labour force was found in both more developed and less developed regions. According to the data cited above, the average annual rate of labour force growth was 1.4 and 2.5 per cent, respectively, for more developed and less developed regions, compared with 0.9 and 1.6 per cent, respectively, among the male labour force. The share of females in the total labour force increased between 1950 and 1975 from 36.7 to 39.7 per cent in the more developed regions and from 28.2 to 32.7 per cent in the less developed ones.

These trends in female participation, in turn, have been associated with changing patterns in participation rates, affecting particularly participation rates in the intermediate age groups (25-54 years). Whereas, according to ILO estimates, for 1950 and 1975 participation rates for females in the younger and more advanced age groups did not change much (except for a decline in participation rates for girls and young women in the 10-24-year age group in the more developed regions), substantial increases were found in both more developed and less developed regions in the extent of participation in the central ages. In the more developed regions participation rates for women in this age group rose from 20.6 per cent in 1950 to 25.9 per cent in 1975, whereas in the less developed regions the increase over this period was from 14.5 to 18.0 per cent.

Significant shifts also took place in the industrial structure of the female labour force. Between 1950 and 1970 in both the more and the less developed regions, according to ILO estimates, the proportion of the female labour force in secondary sectors (industry) and tertiary sectors (services) increased. However, while in the more developed regions the proportion in the latter rose most steeply (from 34.4 per cent in 1950 to 52.3 per cent in 1970), in the less developed regions the most pronounced increase occurred in the secondary sectors (where the proportion increased from a low 5.6 to 12.4 per cent). The growth rate of female labour force in the secondary sector in this group of countries between 1950 and 1970 was 6.6 per cent annually, compared with 4.7 per cent for services). In contrast to trends in the secondary and tertiary sectors, the proportion of active women engaged in agriculture declined in both groups of countries (with a pronounced fall from 44.9 to 20.3 per cent in the more developed regions and from 85.8 to 73.8 per cent in the less developed regions).

Levels and patterns of female participation varied considerably between countries and groups of countries, a classification of countries according to proportions of adult

women working in agriculture and in modern sectors reveals a number of special characteristics in terms of the over-all participation of women, sex and age patterns and patterns of participation by marital status. In general, for countries grouped according to these criteria, the data suggest a distinction between more developed and developing countries, but within each of these groups considerable differences remain. Within the group of more developed countries comparatively low activity rates are still found as a result of the low participation of women in modern sectors, as well as in agriculture. Low participation rates in the less developed regions are typical of those countries where women engage little in agricultural activities, but in addition in this group of countries major differences exist with respect to participation in modern sectors. These differentials in the degree of integration of women are in turn associated with significant differences in the demographic aspects of female participation.

Population, food and nutrition

The situation in the critical area of food production is unsatisfactory in that the rate of growth of food production in the developing world during the 1970s has slowed down to a point where it is barely higher than the growth rate of population. The annual growth rate of *per capita* food production in the developing countries, which was 0.7 per cent in the 1960s, declined to 0.3 per cent during 1970-1976. In Africa, where there was very little growth *per capita* in the 1960s (only 0.1 per cent annually), the rate of food production in the 1970s has fallen back to less than half its value in the 1960s, thus causing an actual decline in *per capita* production at an annual rate amounting to -1.4 per cent between 1970 and 1976. The developed countries, on the other hand, maintained the same rate in the 1970s as in the 1960s, namely, 1.4 per cent.

There has been a significant recovery in food production since 1973 and particularly in 1975 and 1976 in the developing countries after the setbacks caused by bad weather in 1971 and 1972. However, data from the Food and Agriculture Organization of the United Nations (FAO) for 1977 indicate that the situation has not improved and that in fact there has been a 1 per cent decline in *per capita* food production since 1976. A decline of 2-3 per cent was observed in all developing regions except the Far East (developing market economies in South and East Asia), where the positive trend was mainly the result of gains in India. The situation appears especially critical in Africa, where the index of *per capita* food production is more than 10 per cent lower than in 1961-1965 and has reached its lowest point since the Sahelian drought in 1973. Disaggregating the data by countries indicates the serious problems experienced by a number of countries. During the 1960s, 56 out of 128 developing countries experienced higher growth rates for population than for food production. During the 1970s, the number rose to 69 and they now include such large countries as India, Pakistan, Mexico and Egypt. The production of cereals, that most important of food groups, showed generally similar trends.

Food balance sheets prepared by FAO for 162 countries make it possible to compare food supply and requirements in terms of calories in various regions. Although data for 1975-1976 are not yet available, it is evident at the world level that there has been a slow but steady improvement in calorie supply, from 2,410 kilocalories daily in 1961-1963 to 2,550 in 1972-1974, and in meeting the calorie require-

ment (from 101 per cent in the former period to 107 per cent in the latter). This trend may be observed in the developing countries as a whole, although requirements have not yet been met, since in 1972-1974 the supply was only 96 per cent of requirements. In fact the excess at the world level arises from a 32 per cent excess of supply over requirement in the developed countries. The difference in the supply of protein between developed and developing countries as a whole is even larger than that for calories, and the *per capita* supply in the latter is only 58 per cent of that in developed countries, this proportion having remained almost unchanged between 1961 and 1974.

This shows that, in terms of the world average, available food supplies can be adequate for satisfying needs. There is a vast disparity, however, among regions and countries in *per capita* food supply, and there are many developing countries, notably in Africa, where supply is far below nutritional requirements. Within countries, insufficiency of food affects several sectors as a result of considerable unevenness of distribution among different socio-economic groups. The data available invariably show that the poorer generally have access to smaller amounts of food. In fact, the insufficient effective demand resulting from low income can partly explain the low food production in some countries. It should also be noted in this regard that the low productivity of agricultural workers in many developing countries, although primarily due to technique and input, is influenced by the low caloric intake of the workers, creating, therefore, a vicious circle of low income/low demand/low production.

From a nutritional standpoint, infants, children and pregnant or lactating women are particularly vulnerable to the dangers of inadequate food supply. Indeed, poor nutrition among women of gestational age is reflected in a low birth weight and subsequent high degree of infant mortality. It is estimated that about one sixth of the world's live births are below the WHO standard that distinguishes normal from low birth weight, namely, 2,500 grammes, and that roughly 95 per cent of all low-birth-weight babies are born in developing countries. Regional averages are particularly significant in this regard. Thus, while live births below this limit amount to 4 per cent of all live births in Northern Europe and 7 per cent in Western Europe and Northern America, the percentage is as high as 30 in South Asia.

Malnutrition is seldom seen during the first six months of life of a breast-fed infant. The decline of breast-feeding, both in the proportion of mothers who breast-feed and in the duration of breast-feeding, has a serious effect on child nutrition. Beyond the first six months, however, inadequate food supplementation of breast milk, coupled with exposure to infection, is responsible for impaired growth in a good proportion of the children in developing regions. Protein-energy malnutrition occurs particularly at weaning age in the second year. Although data are not available for many countries, recent studies indicate that the percentage of children below five years of age suffering from this form of malnutrition is as high as 30 or 40 or more in some African, Central American and Caribbean countries and even, perhaps, above 50 in some South Asian countries. The end result of severe malnutrition for many children is death. If Latin American data can be generalized, nutritional deficiency is a factor in perhaps more than 60 per cent of all deaths from infectious diseases.

FAO estimates of the number of persons undernourished in the developing countries, derived on the basis of data on

the distribution of food supplies and a critical (subsistence) limit of food intake set at 1.2 times the basic metabolic rate, indicate that in 1972-1974 there were about 450 million persons whose food intake was below this critical limit in the developing countries, excluding the Asian centrally planned economies. This figure amounts to 25 per cent of the total population in these regions. Among the vulnerable young children, however, it was estimated that up to 50 per cent might be undernourished.

Population and education

An important illustration of the effect of demographic trends on education, whose impact on the educational status of the population in developing nations is to be reckoned with, is the fact that, despite a considerable increase in primary and secondary school enrolment, the numbers of those who are not in school have not yet started declining and, in fact, are still showing a slight increase. Data prepared by the United Nations Educational, Scientific and Cultural Organization (UNESCO) show that among the 6-11-year-olds, although enrolment increased impressively from 46 to 62 per cent between 1960 and 1975, the numbers of those out of school rose from 110 to 121 million, resulting in an addition of 11 million to the number of illiterates. This situation reflects clearly the effect of population growth in Africa and South Asia: in Africa, enrolment in these ages increased from 33 to 51 per cent and the number out of school from 29.1 million to 31.6 million; and in South Asia, while enrolment increased from 48 to 61 per cent, the number of children aged 6-11 who were out of school increased from 65.7 million to 77.2 million. In Latin America, on the other hand, progress in enrolment outpaced population growth, and the number out of school declined from 14 million to 11 million between 1960 and 1975.³

Among 12-17-year-olds, enrolment in Africa, South Asia and Latin America increased, again impressively, from 22 to 35 per cent and yet the numbers of those out of school rose from 131 million to 173 million. A failure of enrolment to keep pace with population increase in this age group was observed in each of these three major areas. It is to be noted that during the same period the developed countries were able to further increase their enrolment ratios and reduce the numbers out of school in both age groups.

The future effects of population growth on enrolment may also be very grim. Even if no consideration were given to countries' aspirations for raising enrolment, the developing countries of Africa, South Asia and Latin America would have to add before the end of this century three places to every four that now exist in their primary schools (6-11-year-olds) in order simply to maintain the

1975 enrolment ratios. The required increase is estimated to be 63 per cent in South Asia, 75 in Latin America and as high as 107 in Africa. Needless to say, when efforts are concentrated on trying to ensure a minimum education for as large an enrolment as possible, little is left for improving the quality of education. It is to be noted in this regard that when fertility declined in some countries, educational expenditure did not slow down but was diverted from expansion to improvement of the system.

Population structure determines the relative proportions of the population requiring education and training and is a factor in determining some of the needed skills; it also determines the educational dependency ratio, expressed as pupils per working person, which is a determinant of a country's potential for supporting education. In the developing countries, owing essentially to their young age structure, this ratio in 1965 was almost equal to that of the developed countries (281 and 295, respectively, per 1,000 working persons). Between 1965 and 1975, while the "burden" decreased for the latter (to 258), it increased considerably for the former (to 338). The continuation of present trends would lead to a widening of the gap by 1985 according to projections prepared by UNESCO.

The effect of education on population variables is far from being clearly understood. The difficulty lies in the interrelatedness of a whole complex of social and economic factors influencing demographic behaviour. Thus, while the association between women's education and fertility is generally (but not universally) negative, the observed pattern of association shows considerable variation among different communities where fertility is high. The observed patterns are more consistent, however, in countries where fertility is on the decline. In these countries a negative relationship pattern is observed, although there are differences regarding the level of education at which the decline is significant. The same complexity exists in the case of the relation between education and age at marriage. There is fairly substantial evidence of a negative relation, but the relation is far from being simple. It is true that education tends to lead to postponement of marriage, but cultural factors can also be very influential in this regard, since in many communities where early marriage is encouraged higher education is discouraged.

Migration and education in developing countries are more clearly related, in that, in general, rural-to-urban migrants have a higher level of education than average in the place of origin and, as various studies in Asia, Africa and Latin America have shown, the propensity to migrate tends to be positively related with the level of education; indeed, a lack of educational facilities is one of the motivating factors for out-migration. On the other hand, immigrants usually have less education than the population in the area of destination, although there are situations where the migrants have higher proportions at both ends of the educational scale. This is not to deny the importance of other factors correlated with education, such as occupation, income and unemployment.

³ China and two other East Asian countries are not included.

CONCISE REPORT ON THE MONITORING OF POPULATION POLICIES

*United Nations Secretariat**

SUMMARY

This article presents a concise report on the findings of the second round of monitoring of population policies, called for in the World Population Plan of Action.** It summarizes the findings as they refer to Governments' perceptions and policies with regard to population increase, mortality, fertility, internal migration and international migration. It also provides a general picture of some present and future problems associated with population policies in both developed and developing countries.***

INTRODUCTION

The present study, in which population policies are reviewed, is divided into two sections: in the first, an analysis is made of Governments' perceptions and policies regarding the individual demographic processes (rate of natural increase, mortality, fertility, spatial distribution, internal migration and international migration); the second gives a general picture of some present and future problems associated with population policies.

All the documentation used comes from official sources, including replies to the fourth inquiry among Governments entitled "Fourth Population Inquiry among Governments in 1978: review and appraisal of the World Population Plan of Action", statements made by senior government officials on various occasions and national development plans. All this information is collected continuously in the data bank on population policies, which has been in operation in the Population Division for the past few years.

The data presented in this report concern 158 States Members of the United Nations and members of the specialized agencies. It can therefore be said to be a virtually complete representation of the status of population policies throughout the world in 1978.

The situation studied throughout is that existing in 1978 and more specifically on 1 July 1978, the last date on which replies to the fourth Inquiry among Governments could be taken into consideration. In the first section of this report, a number of paragraphs are devoted to the most important changes that occurred during the period under consideration, that is, from 1 July 1976 to 1 July 1978. For the

previous period, reference may be made to three other reports prepared by the United Nations Secretariat.¹

The general situation with regard to population policies is as a rule fairly stable, but changes in matters of detail cause the documentation to become out-of-date. Moreover, the finding of documentation is made difficult by the wide variety of sources of information and the occasionally complicated process of interpreting some texts or statements. Despite all the precautions taken, errors may have crept into the raw data and the analysis of data. The Secretariat would be grateful for any comments that could enable the information contained in this report to be improved or corrected.

Nevertheless, it should not be forgotten that the short period of monitoring, from 1976 to 1978, falls in the broader context of a movement which began some 10 years ago. Those 10 years have witnessed considerable changes in the perceptions and policies of Governments with regard to population problems. The United Nations World Population Conference, held at Bucharest in 1974, was, so to speak, a point of no return for the entry of population concerns into the governmental domain. In 1978, as the report shows, there was hardly a Government, whether of a developed or a developing country, that did not believe that an understanding of the parameters of its population trends was vital for the future success of the national development plans. Governments have realized that they all have population problems, which are not confined to the growth of population but extend to its poor distribution in the national territory, and are not confined to the global aspects of fertility and its effects on population growth but also extend to its personal aspects—a private matter, and one concerning which there is strong pressure to respect the freedom of the individual. Therefore, under the pressure of Governments, the scope of demography has been greatly expanded, and it has been restored to its proper place at the heart of the economic and social development process of a society. What is more, this national recognition of the importance of the problem has

* Population Division, Department of International Economic and Social Affairs.

** In paragraph 107 of the Plan of Action it was recommended that population trends and policies should be monitored on a continuous basis as a specialized activity of the United Nations and the results reviewed biennially by the appropriate bodies of the United Nations system. For the report on the findings of the first round of monitoring of population policies, see *World Population Trends and Policies: 1977 Monitoring Report*, vol. II (United Nations publication, Sales No. E.78.XIII.4).

*** The findings of the second round of monitoring of population trends are summarized in the preceding article.

¹ See "Population policies and programmes" (E/CONF.60/CBP/21), "Report on the Second Inquiry among Governments on Population Growth and Development" (E/CONF.60/CBP/32) and "Concise report on monitoring of population trends: report of the Secretary-General" (E/CN.9/337).

been coupled with a growing awareness of the possible international consequences of the adoption of national stands on population matters.

Because of the concise nature of this study, Governments' policies and perceptions have been analysed at a high level of aggregation; the tables thus provide data only at the regional level and by level of development.² Regional groupings are defined by reference to the boundaries of the regional commissions. The criterion used to distinguish between developed and developing countries is that used for the population projections prepared by the Population Division.³

The terms of reference for analysing the population policies considered in this report cover the following points: the acceptability or unacceptability of existing relations between demographic and non-demographic processes; identification of the appropriateness or inappropriateness of direct or indirect intervention on these processes; identification of objectives; and statement of the means to be used when intervention is considered appropriate. The definition therefore includes policies of non-intervention.

ANALYSIS OF GOVERNMENTS' PERCEPTIONS AND POLICIES WITH REGARD TO INDIVIDUAL DEMOGRAPHIC PROCESSES

Governments' perceptions and policies with regard to the rate of natural increase⁴

The trend in the rate of natural increase of the population is one of the basic concerns of most Governments in both industrialized and developing countries. It is also one of the areas reserved, by growing consent, for government action in the field of population. Every population is composed of subgroups, individuals, families, regions and so forth, which may be affected differently by the national rate of natural increase. Moreover, the effects are not stable: they change as the demographic, economic and social conditions of countries evolve. Governments therefore face complex situations, and their perception of the effects of a given natural rate of increase must take into account numerous factors before an over-all perception of its effects can emerge. Only after Governments have completed this process of analysis can they decide to intervene in order to change their growth rates. Difficult judgements are then required because a rate deemed to be optimum for the population as a whole is not necessarily so for the groups of which it is composed. A brief description of some of the elements that are generally taken into consideration when Governments adopt a specific attitude towards a complex demographic process such as the rate of natural increase may therefore be useful.

First of all, Governments review the advantages and drawbacks of the short-term and long-term rate of natural

² The names of the countries concerned are given in the more detailed *World Population Trends and Policies; 1979 Monitoring Report* (to be issued as a United Nations publication).

³ "Selected world demographic indicators by countries, 1950-2000" (ESA/P/WP.55).

⁴ It has been thought preferable to analyse natural increase rather than population growth, because for many countries international migration is viewed as being demographically not significant; furthermore, where there is considerable international migration, Governments are initially concerned because the rate of natural increase is unsatisfactory, and in response to this situation policies are then adopted to encourage immigration or emigration.

increase for the achievement of the development objectives they have set themselves. These objectives can be quite varied: economic, political, social, strategic, ecological and so forth. Table 1 shows how the 158 countries' perceptions of the advantages and disadvantages, and of the net balance of advantages and disadvantages, were distributed in 1978.

The table shows, first of all, that all Governments considered the rate of natural increase to be an advantage, even if only a minor one, for the achievement of development objectives. Slightly more than half of the developed countries, but only slightly more than one in three of the developing countries, considered the advantage to be a major one. Expressed as a percentage of the population represented by these countries, developed and developing, the figures were 73 per cent of the population of the industrialized countries and 7 per cent of the population of the developing countries.

With regard to the disadvantages, 22 of the 158 countries considered that there were none. Among the remaining 136 countries the contrast between industrialized and developing countries is again striking. Fewer than one in five of the industrialized countries consider the disadvantages to be major, whereas half of the developing countries are of that view. In terms of population, the figures are respectively 9 per cent for the industrialized countries and 82 per cent for the developing countries, which include the most densely populated countries.

On the matter of the net balance of advantages and disadvantages, nearly three quarters of the industrialized countries believe that the advantages outweigh the disadvantages, compared with less than half of the developing countries. Conversely, there is an even wider disparity in the views of industrialized and developing countries on whether the disadvantages outweigh the advantages; less than a quarter of the industrialized countries believe they do, while over half of the developing countries hold that view. In terms of population, countries that consider that the advantages outweigh the disadvantages represent 85 per cent of the population of the industrialized countries, compared with 17 per cent of the population of the developing countries. In the opposite situation, countries representing 9 per cent of the population of the industrialized countries and 82 per cent of that of the developing countries consider that the disadvantages outweigh the advantages.

The reasons Governments give for their general perception of the net balance of advantage or disadvantage vary widely depending on whether the countries are industrialized or not. The industrialized countries, in which population growth is low and in some cases nil or even negative, tend to emphasize, in connexion with the disadvantages, the fear of a shortage of manpower. The developing countries, on the other hand, with their high rate of growth, frequently refer to such disadvantages as unemployment problems, difficulty in providing efficient public services, depletion of natural resources and great difficulty in achieving adequate rates of savings and investment. Nevertheless, most developed and developing countries agreed on the need for a degree of demographic vitality in order to maintain what has been called their "national identity".

This appraisal of specific advantages and disadvantages has a decisive effect on the formation of perceptions and on the adoption of a policy on the growth rate. If the 22 countries which consider that the effect of their growth rates on the achievement of their development objectives is

TABLE 1. GOVERNMENTS' PERCEPTIONS OF THE ADVANTAGES AND DISADVANTAGES OF THEIR GROWTH RATE FOR THE ACHIEVEMENT OF THEIR DEVELOPMENT OBJECTIVES

Governments' perceptions	Developed countries		Developing countries		Total	
	Number of Governments	Percentage of population represented *	Number of Governments	Percentage of population represented *	Number of Governments	Percentage of population represented *
Rate of natural increase is an advantage:						
Major	22	73	16	7	38	25
Significant	14	20	74	61	88	50
Minor	6	7	26	32	32	25
	42	100	116	100	158	100
Rate of natural increase is a disadvantage:						
Major	8	9	57	82	65	61
Significant	5	29	12	1	17	9
Minor	17	27	37	12	54	16
No disadvantage	12	35	10	5	22	14
	42	100	116	100	158	100
Advantages outweigh disadvantages	32	85	46	17	78	36
Disadvantages outweigh advantages	8	9	58	82	66	62
Advantages equal disadvantages	2	6	12	1	14	2
	42	100	116	100	158	100

* Demographic Estimates and Projections for the World, Regions and Countries as Assessed in 1978 (to be issued as a United Nations publication).

nil or neutral are excluded from the analysis, there are 66 countries (8 industrialized and 58 developing) which think that the disadvantages arising from their growth rates ultimately outweigh the advantages. It is probably in this group that the highest proportion of countries recording perceptions such as "not satisfactory, lower rate desirable" or "not satisfactory, higher rate desirable" is to be found. It is on the basis of this perception that they will decide whether or not intervention is needed in order to change the rate.

Table 2 gives the 1978 distribution of Governments' perceptions with regard to the rate of natural population increase by reference to three categories of reaction—"Higher rate desirable", "Rate satisfactory" and "Lower rate desirable". Slightly fewer than half of the 158 countries say they are satisfied and slightly over half are dissatisfied. The category of countries that say they are "satisfied" is heterogeneous in several respects: on the one hand, it includes countries with very different levels of development—for example, countries in the regions covered by the Economic Commission for Europe (ECE) and the Economic Commission for Africa (ECA)—but, on the other hand, it contains countries that have no policy of encouraging voluntary action and are satisfied with the spontaneous trend in their rates, and countries that have a policy of intervention, the effects of which are such as to prompt them to express satisfaction with the rate recorded in 1978. The group of countries that are not satisfied may also be divided into two subgroups: 36 which consider that a higher rate is desirable and 46 which consider a lower rate to be desirable. The latter category is composed totally of developing countries. Now if we take into consideration

the population corresponding to the countries thus classified, sharp contrasts appear. Fifty-seven per cent of the world's population lives in countries desiring a lower rate, representing 80 per cent of the population of the developing countries and 0 per cent of the population of the developed countries. Thirty per cent of the world's population falls in the "satisfied" category, representing 63 per cent of the population of the industrialized countries and only 17 per cent of the population of the developing countries. Finally, only 13 per cent of the world's population is represented in the "Higher rate desirable" category, 37 per cent being in the developed countries and 3 per cent in the developing countries.

If the countries are classified according to perceptions and levels of development, the distribution of the countries in the more developed regions is very different from that of countries in the developing regions: 13 out of 42 industrialized countries want a higher rate, compared with only 23 out of 116 developing countries. Dissatisfaction is even more marked when the question is whether a lower rate is desirable: no industrialized country wants a lower rate, but 45 developing countries do.

Finally an attempt has been made in table 3 to distribute countries according to their perceptions, their present rates of natural increase (table 3, part A) and their present size (table 3, part B).

Among the 116 developing countries, the proportion of countries that have identically high rates but have expressed a desire for lower rates or declare themselves satisfied with them is similar. In fact a number of Governments (19) whose present rates are over 2 per cent consider even

TABLE 2. GOVERNMENTS' PERCEPTIONS REGARDING THE PREVAILING RATES OF NATURAL INCREASE, BY CATEGORY OF PERCEPTION, REGION AND LEVEL OF DEVELOPMENT

Region and level of development	Higher rate desirable		Rate satisfactory		Lower rate desirable		Total	
	Number of countries	Percentage of population represented ^a	Number of countries	Percentage of population represented ^a	Number of countries	Percentage of population represented ^a	Number of countries	Percentage of population represented
Economic Commission for Africa	8	7	26	60	16	33	50	100
Economic Commission for Western Asia	5	24	7	76	0	0	12	100
Economic Commission for Latin America	4	11	10	56	13	33	27	100
Economic Commission for Europe	13	40	25	56	1	4	39	100
Economic and Social Commission for Asia and the Pacific	6	1	8	9	16	90	30	100
Developed countries	13	37	29	63	0	0	42	100
Developing countries	23	3	47	17	46	80	116	100
All countries	36	13	76	30	46	57	158	100

^a Demographic Estimates and Projections for the World, Regions and Countries as Assessed in 1978 (to be issued as a United Nations publication).

TABLE 3. RELATION BETWEEN GOVERNMENTS' PERCEPTIONS AND ACTUAL RATES OF NATURAL INCREASE AND SIZE OF POPULATION

Category	Total number of countries				Countries in more developed regions				Countries in less developed regions			
	Higher rates desirable	Rates satisfactory	Lower rates desirable	Total	Higher rates desirable	Rates satisfactory	Lower rates desirable	Total	Higher rates desirable	Rates satisfactory	Lower rates desirable	Total
A. Countries classified according to rates of natural increase, 1975-1979												
Rate of natural increase (percentage)												
0.4 or less	4	7	1	12	4	7	—	11	—	—	1	1
0.5-0.9	4	12	—	16	3	12	—	15	1	—	—	1
1.0-1.4	6	9	2	17	5	8	—	13	1	1	2	4
1.5-1.9	2	4	5	11	—	1	—	1	2	3	5	10
2.0-2.4	6	7	11	24	1	—	—	1	5	7	11	23
2.5-2.9	6	20	14	40	—	1	—	1	6	19	14	39
3.0-3.4	7	16	11	34	—	—	—	—	7	16	11	34
3.5 or more	1	1	2	4	—	—	—	—	1	8	2	6
TOTAL	36	76	46	158	13	29	—	42	23	47	46	116
B. Countries classified according to size as of 1975												
Population (millions)												
0.9 or less	11	12	12	35	4	3	—	7	7	9	12	28
1.0-4.9	11	22	10	43	1	5	—	6	10	17	10	37
5.0-9.9	7	15	5	27	2	7	—	9	5	8	5	18
10.0-19.9	2	12	6	20	1	5	—	6	1	7	6	14
20.0-49.9	2	9	8	19	2	5	—	7	—	4	8	12
50.0-99.9	2	3	3	8	2	2	—	4	—	1	3	4
100.0 or more	1	3	2	6	1	2	—	3	—	1	2	3
TOTAL	36	76	46	158	13	29	—	42	23	47	46	116

higher rates to be desirable. Of the 42 developed countries, none wishes to have a lower rate, but one third would like to see a higher rate and the remaining two thirds are satisfied, regardless of what the observed rate is. Thus there is no strong correlation between the actual levels of the rate of natural increase and perceptions: clearly the latter are determined principally by non-demographic factors.

An examination of the relationship between the size of a country and its category of perception will show that none of the 19 developing countries with a population of more than 20 million considers its rate of population growth to be unsatisfactory because it is too low. On the other hand, 12 consider it to be too high, while six consider it to be satisfactory. Only one country with a population of 10 mil-

lion or more wishes to attain higher rates of population growth, while 19 desire a lower rate and 13 consider the rate to be satisfactory. Of the same 65 countries within the 5 million range, 22 desire a lower rate and 17 desire a higher rate. Clearly, given similar rates of population growth, the Governments of the largest countries in the developing world tend to desire lower rates of population growth.

With regard to Governments' policies of intervention to change rates that they consider to be unsatisfactory, it should be noted that 22 out of 158 countries, divided almost equally between developed countries and developing countries, perceive no problems in connexion with the level or trend of their rates of natural increase. The other

countries view the rate of natural increase as a source of problems of varying degrees of seriousness. Governmental intervention may be divided into two main categories: action affecting the demographic processes themselves, such as that directed at fertility, mortality, internal migration and international migration, and action designed to change the national economic and social structure and thereby to influence demographic processes indirectly and also to affect the socio-economic causes of the observed imbalances.

Table 4 shows the demographic and non-demographic processes on which action is most frequently taken. The demographic process most often mentioned is spatial distribution (cited by 117 countries, 98 of which are developing countries); then come international migration (81 countries, 62 of them developing) and fertility (72 countries, 58 of them developing). The process least often mentioned is mortality (only 35 countries). The very high frequency of action aimed at socio-economic restructuring should be noted (cited by 128 countries, 104 of which are developing countries).

As has already been mentioned, such action is rarely taken in isolation; it is generally aimed at several processes at once. Table 5 shows the combinations of demographic processes that recur most frequently in government intervention. For the sake of simplicity, intervention has been classified into three categories: action on the rate of natural increase alone, on the geographical distribution of the pop-

ulation alone (internal and external migration), and on the rate of natural increase and geographical distribution of the population simultaneously. Among the developing countries there is no case of intervention on the rate of natural increase alone, but 70 countries intervene on a combination of natural rate of increase and geographical distribution of population, and 36 on geographical distribution alone. The figures for the developed countries are, respectively, 2, 16 and 12.

Having considered the demographic and non-demographic variables chosen by Governments for direct or indirect action on the rate of natural increase, it is interesting to analyse the relative weight given to demographic as against non-demographic intervention in the implementation of policies to correct imbalances created by rates of natural increase. These data are presented in table 6: 19 countries, 13 of them developing, have policies in which the weight of non-demographic action is preponderant, although they do use limited demographic measures; 99 countries, 81 of them developing, have policies in which demographic and non-demographic intervention are equally weighted; and 18 countries, 12 of them developing, have policies in which demographic action has a dominant role and socio-economic action is secondary. This analysis of the range of types of intervention shows, therefore, that Governments generally are very much aware of the interdependence of demographic phenomena and social and economic phenomena.

TABLE 4. DEMOGRAPHIC AND NON-DEMOGRAPHIC VARIABLES MOST FREQUENTLY CHOSEN FOR INTERVENTION AFFECTING THE RATE OF NATURAL INCREASE

Countries	Mortality	Fertility	Spatial distribution	International migration	Socio-economic restructuring	No problems found to be associated with the rate of natural increase
Developed countries	9	14	19	19	24	12
Developing countries	26	58	98	62	104	10
TOTAL	35	72	117	81	128	22

TABLE 5. COMBINATIONS OF DEMOGRAPHIC PROCESSES CHOSEN FOR INTERVENTION AFFECTING THE RATE OF NATURAL INCREASE

Countries	Natural increase alone	Natural increase and geographical distribution	Geographical distribution alone	No problems found to be associated with the rate of natural increase	Total
Developed countries	2	16	12	12	42
Developing countries	—	70	36	10	116
TOTAL	2	86	48	22	158

TABLE 6. TYPES OF ACTION CHOSEN BY GOVERNMENTS TO DEAL WITH PROBLEMS CAUSED BY AN UNSATISFACTORY RATE OF NATURAL INCREASE

Countries	Action on non-demographic factors predominant	Action on demographic and non-demographic factors equal	Action on demographic factors predominant	No problems found to be associated with the rate of natural increase	Total
Developed countries	6	18	6	12	42
Developing countries	13	81	12	10	116
TOTAL	19	99	18	22	158

Between 1976 and 1978, a number of changes occurred in the perceptions of countries with regard to their rate of growth and, consequently, their policies. Several developed countries, for example, changed their perception from "higher rate desirable" to "rate satisfactory"; this is true of Greece, Finland and Ireland. On the other hand, countries such as France, the Federal Republic of Germany and Switzerland displayed a growing concern over their rates, which they considered too low. New Zealand changed its perception from "lower rate desirable" to "rate satisfactory" and Cyprus from "rate satisfactory" to "higher rate desirable". Finally, countries such as Canada and the Netherlands, while terming their rate satisfactory and continuing to do nothing about it, adopted a wait-and-see attitude, keeping open the possibility of taking action if they considered that the trend in their rate was becoming unsatisfactory.

Several interesting changes have occurred in the developing countries. First, several of the countries that had considered a "lower rate desirable" now view their rate as satisfactory as a result of success in their policy of intervention or of a spontaneous trend deemed to be favourable: in the region covered by the Economic Commission for Latin America (ECLA) this is true of Colombia, Ecuador and Panama, and in the region covered by the Economic and Social Commission for Asia and the Pacific (ESCAP) it is true of Malaysia. In ECA, while Madagascar and Sierra Leone now consider their rate satisfactory, they still believe that the observed rates cause certain problems. On the other hand, Guinea, which had considered its "rate satisfactory", in 1978 said that a "higher rate is desirable" and has adopted measures to that end. The only developing country that has entirely changed its perception of its growth rate is Bolivia, which in 1978 considered that a "higher rate is desirable", whereas previously it had felt that a "lower rate is desirable". This change of position was brought about by the results of the latest census of population, which showed the total size of the population to be far lower than had been forecast.

Governments' perceptions and policies with regard to mortality

All Governments have policies aimed at reducing mortality, but differences in the stated objectives of these policies must be identified. As was seen in the discussion of policies on the rate of natural increase, a number of Governments believe that, in addition to its intrinsic purpose, a policy of mortality can have an explicitly demographic content: any decline in mortality has a favourable effect on the level and trend of the rate of natural increase. These are, of course, the Governments of countries whose growth rates are considered too low, but the countries in question are situated in both the most developed and the least developed regions, and their stand is to some extent independent of the level of their rate of natural increase. In all countries in which the mortality level is still high, the realization that health is dependent on economic and social development is paralleled by the realization that improved health also contributes to economic and social development.⁵ Therefore, in these countries public health policies designed to reduce mortality and morbidity are considered to be part of the over-all development policy.

The fourth inquiry among Governments, entitled "Review and appraisal of the World Population Plan of Action", which focused on population policies in 1978, contained, *inter alia*, a question on the acceptability of present levels of mortality. In fact no Government considers the present levels of mortality to be totally satisfactory, but some Governments admit that in the present circumstances and in view of the constraints affecting changes in mortality, the level achieved is acceptable. Table 7 shows clearly that acceptability increases in step with the observed level of expectation of life at birth, but this relation is not absolute. While all but two of the 56 coun-

⁵ See "Report of the International Conference on Primary Health Care, Alma Ata (USSR), 6-12 September 1978" (ICPHC/ALA/78.10), recommendation 1.

TABLE 7. GOVERNMENTS' PERCEPTIONS REGARDING PRESENT LEVELS OF AVERAGE EXPECTATION OF LIFE AT BIRTH AND THEIR ACCEPTABILITY IN PREVAILING ECONOMIC AND SOCIAL CIRCUMSTANCES
(Number of countries)

Regions and countries	Levels of expectation of life at birth										Total
	70 years and over		62 ^a -69 years		50-61 years		50 years and under		All ages		
	Acceptable	Unacceptable	Acceptable	Unacceptable	Acceptable	Unacceptable	Acceptable	Unacceptable	Acceptable	Unacceptable	
Economic Commission for Africa	—	—	2	1	—	8	1	38	3	47	50
Economic Commission for Western Asia	—	—	3	2	3	—	—	4	6	6	12
Economic Commission for Latin America	—	—	9	6	2	9	—	1	11	16	27
Economic Commission for Europe	25	7	4	2	—	1	—	—	29	10	39
Economic and Social Commission for Asia and the Pacific	5	—	2	2	3	6	1	11	11	19	30
Developed countries	26	7	6	3	—	—	—	—	32	10	42
Developing countries	4	—	14	10	8	24	2	54	28	88	116
TOTAL	30	7	20	13	8	24	2	54	60	98	158

^a A life expectancy at birth of 62 years corresponds to the average expectation of life by 1985 for the world as a whole, referred to in paragraph 22 of the World Population Plan of Action. The other categories in this table were chosen by reference to that figure.

tries with an expectation of life at birth of less than 50 years say that this level is unacceptable, only seven of the 37 countries having achieved an expectation of life of over 70 years say that the level is unacceptable. Among the 42 industrialized countries, 10 consider their levels to be unacceptable and 32 find them acceptable. Among the 116 developing countries, the frequency of unacceptable ratings is naturally higher: only 28 countries consider the level acceptable, while 88 feel it to be unacceptable.

TABLE 8. 1985 POPULATION OF COUNTRIES WHICH MAY HAVE AN AVERAGE EXPECTATION OF LIFE AT BIRTH OF UNDER 50 YEARS AND OF 50-62 YEARS, ACCORDING TO UNITED NATIONS PROJECTIONS AND TARGETS SET BY GOVERNMENTS

Levels of expectation of life at birth	United Nations estimate (1970-1975)	Level of expectation of life at birth (1980-1985) (medium variant) ^a	Projections of Governments that have set targets (1985)
<i>Under 50 years</i>			
Number of countries	54	40	34
Population (millions)	1 337	472	279
Proportion of the world's population (percentage)	33.7	9.8	5.8
<i>50-62 years^b</i>			
Number of countries	36	30	39
Population (millions)	1 429	1 542	1 731
Proportion of the world's population (percentage)	36.0	31.9	35.9
<i>Total</i>			
Number of countries	90	70	73
Population (millions)	2 766	2 014	2 010
Proportion of the world's population (percentage)	69.7	41.7	41.7

^a "Provisional estimates and projections of population of world regions and countries as of 1975 and as assessed in 1978" (document prepared by the Population Division of the United Nations Secretariat).

^b An expectation of life at birth of 62 years is referred to in paragraph 22 of the World Population Plan of Action.

Table 8 gives a tentative estimate of the situation in 1980-1985, based on provisional mortality projections made by the Population Division (medium variant) and on the targets that Governments consider to be attainable by 1985. Under the most optimistic projections—those made by Governments—34 countries, representing 5.8 per cent of the world's population, will by that date still have a life expectancy of under 50 years. In the category of those having an expectation of life of between 50 and 62 years, there will still be 39 countries, or 35.9 per cent of the world's population. At the regional level, it is in the ESCAP region that the greatest efforts must be made to achieve the world goal of an average expectation of life at birth of 62 years by 1985. In the ECA region it is unlikely that this target can be achieved.⁶

In a previous concise report on the monitoring of population policies (E/CN.9/324 and Corr. 1) it was noted that, while all Governments had policies to improve health, significant differences existed, particularly among the developing countries, in the strategies used to reduce high mortality among the poorest segments of the population. In that respect, at the recent International Conference on Primary Health Care, held at Alma Ata from 6 to 12 September 1978 under the auspices of the World Health Organiza-

tion (WHO) and the United Nations Children's Fund (UNICEF), the developing countries acknowledged the need to re-evaluate the objectives and methods of their health policies. Four subjects covered by the recommendations of the Conference will be discussed here: recognition of the key role of primary health care in all health policies; selection of the groups that should be given high priority in obtaining primary health care (women, children, working populations at high risk and underprivileged segments of society, such as the rural population); choice of the means best suited to the needs of the population groups concerned, not only at the technical level but also at the social and cultural levels; and the content of primary health care (education, prevention and control of major diseases, improvement of food supply and nutrition, expanded maternal and child care, including birth control, and lastly provision of essential drugs).⁷

In attempting to characterize the changes observed in health policies between 1976 and 1978, it will be useful first to make a distinction between developing and developed countries. In the former, growing importance is being given to education, the prevention of disease, the dissemination of appropriate medical technology to underprivileged groups and the improvement of health through a raising of the basic level of life. Also notable are the multidimensional policies which address themselves to such varied matters as nutrition, education and birth control, in addition to health *per se*. The programmes also set out to cover the various population groups: rural workers, women and children. With regard to the latter, the question is whether these programmes will be more effective than previous ones in restoring the declining trend in the mortality of infants and young children, which had slowed down and even stopped in recent years in some of the developing countries where socio-economic progress was slow or affected only a small part of the population.

In the developed countries, increasing efforts are being made to reduce the factors that still differentiate between population groups, especially those exposed to specific risks because of living or working conditions or place of residence, or even because of age or sex. Of interest in this connexion is a programme initiated in Finland to help prevent deaths among men aged 45 and over. Budgetary reasons seem to militate increasingly in favour of programmes to promote health education and preventive medicine, especially in view of the success of such programmes in the field of cardio-vascular diseases, and as Governments of the developed countries find curative medicine to be more and more costly.

Governments' perceptions and policies with regard to fertility

Fertility, as the demographic variable most likely to alter the trend in the rate of natural increase, has for more than 30 years received special attention from Governments. It was in 1952 that the first Government-supported birth-control programme was launched in India.⁸ In the de-

⁷ "Report of the International Conference on Primary Health Care, Alma Ata (USSR), 6-12 September 1978" (ICPHC/A/A/78.10), chap. IV.

⁸ See annex I below for a more detailed survey of the development between 1952 and 1976 of birth-control programmes with demographic goals.

⁶ Report of the United Nations World Population Conference, 1974, Bucharest, 19-30 August 1974 (United Nations publication, Sales No. E.75.XIII.3), chap. I, para. 22.

bate on population growth in the third world, reduction of fertility has often been regarded as the only way to create a balance between population and the means of subsistence. The controversy quickly became even sharper as ideological arguments came to be mingled in the perhaps somewhat too technical discussion conducted until recently by economists, sociologists and demographers. Today a middle way seems to be emerging, and this has unquestionably helped to lessen not the importance of the subject but the fervour of those who have been discussing it. However, the debate has recently started up again with the emergence of a new dimension which might be characterized as individualistic in contrast to the first, global dimension. Couples, and particularly women, have insistently demanded the right and the means of freely determining their own fertility. Some Governments, particularly in developed countries, have found themselves in a difficult position, in which the desire expressed by couples to control and, in fact, reduce their fertility has rarely been in conformity with the need perceived by Governments to ensure at least the replacement of the present population.

With regard to policies of Government intervention in the matter of fertility, it is customary to make a distinction between policies whose main objective is a demographic one and those which are designed mainly to promote the well-being of the family or the individual. However, this

distinction is not completely clear-cut, since a Government whose policy of intervention is mainly directed towards a demographic objective will normally feel that such intervention also affects the well-being of the family and that the interests of the nation coincide with those of the individuals of whom it is composed. Conversely, it is most unlikely that a policy of intervention designed to promote the well-being of the family will have no effect on the level and trend of fertility. There are a number of subtle factors here which complicate the task of analysis, and the findings should in any case be interpreted with the utmost caution.

Table 9 contains information on how present fertility rates are perceived. Out of 158 countries, 22, including 10 developed countries, consider their fertility rate "too low"; 84, including 31 developed countries, consider it "satisfactory"; and 52, including one developed country, consider it "too high".

The decline in fertility in most of the developed countries is a matter of concern to a growing number of Governments, even though some of them have recently had some success in checking the decline. There is therefore a bimodal distribution of Governments between two groups of perceptions; "too low" or "satisfactory". The situation among the developing countries is radically different. In

TABLE 9. GOVERNMENTS' PERCEPTIONS OF PRESENT LEVELS OF FERTILITY
(Number of countries)

Regions and countries	Rate			Total
	unsatisfactory: too low	satisfactory	unsatisfactory: too high	
Economic Commission for Africa	6	25	19	50
Economic Commission for Western Asia	1	9	2	12
Economic Commission for Latin America	3	11	13	27
Economic Commission for Europe	10	28	1	39
Economic and Social Commission for Asia and the Pacific	2	11	17	30
Developed countries	10	31	1	42
Developing countries	12	53	51	116
TOTAL	22	84	52	158

TABLE 10. GOVERNMENTS' POLICIES REGARDING INCENTIVES AND DISINCENTIVES
FOR CHANGING FERTILITY
(Number of countries)

Regions and countries	Incentives or disincentives				Total
	To increase fertility	To maintain fertility	To reduce fertility	No incentive	
Economic Commission for Africa	3	2	12	33	50
Economic Commission for Western Asia	1	5	—	6	12
Economic Commission for Latin America	3	—	8	16	27
Economic Commission for Europe	8	11	1	19	39
Economic and Social Commission for Asia and the Pacific	2	3	16	9	30
Developed countries	9	11	—	22	42
Developing countries	8	10	37	61	116
TOTAL	17	21	37	83	158

many of them high fertility persists, and in some of them demographically the rate has only recently begun to decline. Nevertheless, quite a number of small countries consider their high fertility to be satisfactory or even too low.

Table 10 shows the distribution of Governments according to whether the main purpose of their action on fertility is to increase, to maintain or to reduce it. A comparison of tables 9 and 10 reveals that the perception of an unsatisfactory rate and the existence of a policy to change it in the desired direction indicates close parallelism. However, some countries in this category refrain from intervening for reasons of expediency or effectiveness. The category of satisfied countries includes two types of country: those satisfied with the spontaneous trend in fertility, which have decided not to take action; and, on the other hand, those satisfied with fertility after having intervened to change it in the desired direction. Thus, 83 countries, 22 of them developed, have no policies of intervention. The remainder are distributed as follows, by objective: 17 countries, 9 of them developed, have policies to increase fertility; 21 countries, 11 of them developed, have policies to maintain it; and 37, none of them developed, have policies to reduce it. In terms of population, rather than of countries, an estimated 3 per cent of the world's population lives in countries whose Governments have policies aimed at increasing fertility, 10 per cent lives in countries having policies aimed at maintaining the present level, 56 per cent lives in countries having policies aimed at reducing it, and lastly, 31 per cent lives in countries whose Governments do not want to intervene.

A question that frequently arises when the implementation of programmes to change fertility levels is considered is that of quantitative time-bound targets. It is noteworthy that, of the developing countries that have adopted policies to reduce the birth rate, only 20 or so have set quantitative dated targets. The others confine themselves to more general statements. Furthermore, a factor often forgotten is that quantitative targets are frequently adopted in those industrialized countries in which fertility is judged to be too low: this is true of many countries in Eastern Europe and some countries of Western Europe, for example, Finland and France. Lastly, some countries, such as Japan and the

Netherlands, express their targets in more vague terms as the pursuit of a static population situation.

As noted earlier, a distinction must be made between the two categories of governmental policies of intervention on fertility: those whose main objective is to change the rate of natural increase, and those whose main objective is the well-being of individuals or families and which focus on access to modern methods of contraception. In some cases, the objectives of the two categories of policies coincide but in others they may be antithetic. While it is true that the 37 countries that have adopted a policy of reducing fertility all favour access to modern methods of contraception, most of the other 37 countries that have adopted policies with the opposite objective (to increase or maintain fertility) do not restrict access to modern methods of contraception and in some instances even encourage it (see table 11).

If one looks at the non-demographic reasons that induce Governments to adopt a policy of making modern methods of contraception accessible, one finds three principal reasons: concern for the health of the mother and the child in relation to fertility, concern to ensure the freedom to have children or not in the more general framework of respect for human rights, and the desire to improve the status of women by enabling them to decide whether or not to have children. Government action in these three areas varies considerably depending on the status of the country. For the developed countries, relatively modest assistance, favourable regulations or better education may be enough to ensure a satisfactory dissemination of modern methods of contraception. In the developing countries, the Government's commitment often has to be more vigorous: an entire organization for the dissemination of contraceptive methods must be created, often in conjunction with maternal and child welfare centres. State participation in terms of staffing and financing is also very important.

Table 11 lists four categories of policies by region and by level of development. In the first category, there are 13 countries that still restrict access to modern contraceptives. The remaining 145 countries have a policy broadly favouring their dissemination. While the Governments of 27 countries adopt a policy of non-intervention, most other countries intervene either directly (98 countries) or indi-

TABLE 11. GOVERNMENTS' POLICIES ON ACCESS TO MODERN METHODS OF BIRTH CONTROL
(Number of countries)

Regions and countries	Access restricted	Access not restricted			Total
		Not supported by Government	Indirectly supported by Government	Directly supported by Government	
Economic Commission for Africa	5	12	10	23	50
Economic Commission for Western Asia	1	5	2	4	12
Economic Commission for Latin America	1	4	1	21	27
Economic Commission for Europe	4	4	6	25	39
Economic and Social Commission for Asia and the Pacific	2	2	1	25	30
Developed countries	5	4	7	26	42
Developing countries	8	23	13	72	116
TOTAL	13	27	20	98	158

rectly (20 countries) to help dissemination. Direct governmental involvement is most frequent among the developing countries (72 out of 116 countries).

An analysis of the changes that occurred between 1976 and 1978 in perceptions of and policies on over-all fertility reveals a number of very significant changes in attitude. Among the ECLA countries, Colombia, Ecuador and Panama moved from the "not satisfied: rate too high" category to the "satisfied" category. Bolivia, on the other hand, after the publication of the results of the latest census, which were considered disappointing, radically changed its perception from "not satisfied: rate too high" to "not satisfied: rate too low". In ECWA, Iraq now considers its fertility "not satisfactory: rate too low" whereas previously it had considered it satisfactory. Jordan says for the first time that its fertility rate is too high. In ESCAP, Malaysia, previously dissatisfied with too high a rate, considers it satisfactory. In ECA, Guinea, formerly satisfied with its rate, now wants a higher rate. In ECE, Finland, with a somewhat increased birth rate for the period covered, records a "satisfactory" perception, as Hungary and Czechoslovakia had done previously for the same reason.

In terms of the policies implemented, some of the developing countries, such as Iraq and Guinea, have decided to institute governmental programmes in order to raise the fertility level. Colombia, on the other hand, has abandoned the governmental programme it instituted some 10 years ago, because it is satisfied with the results achieved. India, which had attracted attention with its extremely vigorous anti-natalist campaign and the more or less compulsory sterilization measures implemented during that period, has abandoned all coercive methods. The emphasis is on voluntary measures and, while a quantitative target for the reduction in fertility has been retained, it has been revised from 25 per 1,000 by 1983 to 30 births per 1,000 by 1985. The birth rate at present is 35 per 1,000. In China, the Government said at the beginning of 1978 that it wanted to achieve a population growth rate of less than 1 per cent within three years. Most likely the birth rate in China today should not exceed 22 per 1,000.

In the developed countries Governments satisfied with their growth rate nevertheless mention the need to retain some incentives as a precautionary measure: this is true of Finland, which, like some other Governments, such as

those of the Netherlands and Canada, is prepared to take action if the fertility rate again turns downward or continues to decline.

As for policies on individual fertility, Argentina and Spain have repealed their restrictive measures regarding the dissemination of modern methods of contraception. Among the developing countries, Brazil, Mozambique, Senegal, the United Republic of Tanzania and Togo have increased their support to agencies that help to disseminate contraceptive methods, without actually committing themselves to a policy of reducing global fertility. In developed countries the same changes have been observed in Israel and Italy.

Governments' perceptions and policies with regard to spatial population distribution and internal migration

If there is one sphere in which Governments are unhappy about the situation confronting them, it is the spatial distribution of the population and internal migration. In 1978, as in 1976, the number of Governments that have declared the geographical distribution of their population to be "highly unacceptable" is still very high: 73 countries, the vast majority of which (68) are developing countries. As table 12 also shows, 66 other Governments, 42 of them developing, consider the situation to be "unacceptable to some extent", and only 19 consider it to be "entirely acceptable".

While this concern is shared by both groups of countries, there is a striking contrast between the perceptions of seriousness of the situation of the developing countries and of the industrialized countries. Among the developing countries, the predominant perception is that the present distribution of the population within the national territory is very unsatisfactory from the point of view of optimum utilization of the nation's natural resources. There are many causes for this unsatisfactory situation, the most important of which are: the phase of demographic transition prevailing in a number of the developing countries has released vast manpower potential which cannot be absorbed in rural areas and emigrates to the few existing cities, especially the capital. Moreover, the newly independent countries have inherited urban and rural structures that are

TABLE 12. GOVERNMENTS' DEGREE OF SATISFACTION WITH THE SPATIAL DISTRIBUTION OF THEIR POPULATIONS
(Number of countries)

Regions and countries	Degree of satisfaction			Total
	Acceptable	Unacceptable to some extent	Highly unacceptable	
Economic Commission for Africa	—	15	35	50
Economic Commission for Western Asia	3	8	1	12
Economic Commission for Latin America	1	5	21	27
Economic Commission for Europe	13	25	1	39
Economic and Social Commission for Asia and the Pacific	2	13	15	30
Developed countries	13	24	5	42
Developing countries	6	42	68	116
TOTAL	19	66	73	158

TABLE 13. GOVERNMENTS' POLICIES REGARDING THE SPATIAL DISTRIBUTION AND INTERNAL MIGRATION OF THE POPULATION
(Number of countries)

Regions and countries	Governments' policies regarding the trend in internal migration from rural areas and small urban centres to the larger urban areas and the metropolitan area												Total
	To maintain migration				To reduce migration			To reverse the flow of migration					
	To increase migration and to change both urban and rural configuration	Without changing either urban or rural configuration	And to change rural configuration	Without changing either urban or rural configuration	And to change			Without changing either urban or rural configuration	And to change				
					Rural configuration	Urban configuration	Both urban and rural configuration		Rural configuration	Urban configuration	Both urban and rural configuration		
Economic Commission for Africa	—	6	5	6	10	1	16	—	3	—	3	50	
Economic Commission for Western Asia	1	4	—	1	1	—	4	—	—	—	1	12	
Economic Commission for Latin America	1	3	—	3	5	3	12	—	—	—	—	27	
Economic Commission for Europe	—	10	—	4	—	13	7	3	—	2	—	39	
Economic and Social Commission for Asia and the Pacific	1	4	2	4	4	1	6	—	2	1	5	30	
Developed countries	—	11	—	4	—	15	6	3	—	3	—	42	
Developing countries	3	16	7	14	20	3	39	—	5	—	9	116	
TOTAL	3	27	7	18	20	18	45	3	5	3	9	158	

ill-suited to autonomous development. Lastly, even after independence some countries have acquired industrial infrastructures the location of which often bears no relation to the countries' own needs.

As with mortality and, to a lesser degree, fertility, a spatial distribution policy is not confined to its stated purpose. As was seen in the discussion on policies regarding population growth, many Governments consider that their redistribution policy is also an important element of their action to overcome problems associated with an unsatisfactory rate of natural increase. This is particularly true of many of the developing countries which, having too high a rate of natural increase, think a redistribution of their population will offset the adverse effects of the growth rate and improve the utilization of natural resources. A change in the life style of rural populations migrating to cities or a higher standard of living among the population in the poorest regions can, of course, be expected to have indirect effects on the components (fertility and mortality) of the growth rate.

With regard, first, to policies on migration from rural to urban areas, which are represented in table 13, their aim may be to accelerate or maintain the present level, or to slow down or reverse it. On the other hand, these policies may or may not be accompanied by policies to reorganize the structure of urban and rural space, which are also the subject of table 13. Here again, different types of intervention are possible: changing the structure of urban and rural space; not changing it; or changing only one of the two.

Three of the developing countries want to accelerate migration, 23 to maintain it at the present level, 76 to slow it down and 14 to reverse it. The figures for the developed countries are respectively 0, 11, 25 and 6. As regards changes in the structure of urban and rural space, for the developing countries the changes most often involved affect both urban and rural space (51 cases) or rural space alone (32 cases). In the industrialized countries, the most frequent intervention naturally involves changes in urban

space (18 cases), followed by changes in both urban and rural space (6 cases).

Few major changes occurred between 1976 and 1978 in perceptions or major policy emphases. In most cases, they involved adjustments to policies already being implemented, details of which cannot be discussed at the level of aggregation used in this article. However, among the developing countries, particularly in ECA, mention must be made of Nigeria, which announced simultaneously a new policy of decentralization and the establishment of a new federal capital in the interior of the country. The United Republic of Tanzania also announced the creation inland of a new capital city, Dodoma. In ESCAP, Viet Nam announced that it was adopting a policy to redistribute its population and reduce overcrowding in the urban centres. Malaysia stepped up its policy of establishing or expanding new urban centres, and Papua New Guinea formulated a policy to develop urban centres in order to combat the excessive growth of the capital. In ECE, countries such as Turkey and Spain apparently want to emphasize rural development, hitherto somewhat neglected in favour of urban development. Countries such as Canada, Finland, Switzerland and New Zealand developed a series of measures to encourage an improved and more balanced regional development. The countries of Eastern Europe took similar steps: for example, the German Democratic Republic adopted stricter measures to encourage university graduates and skilled workers to settle in regions which the Government wishes to develop as a matter of priority.

Governments' perceptions and policies with regard to international migration

More perhaps than any other population policy, international migration policies have a wide variety of objectives. First of all, like fertility and mortality policies, they play a short-term or long-term demographic role in offsetting the effects of a rate of natural increase that is considered un-

satisfactory. An immigration policy may supplement or even replace a policy for increasing fertility that has become obsolete or too expensive. In conjunction with spatial distribution policies, they may help to change the geographical distribution of the population within the national territory. However, the demographic objectives should not overshadow the economic objectives, which often predominate, particularly in the case of short-term international migration, when the country of immigration imports a labour force of a given size and qualifications for a specific period. Lastly, international migration has always played a humanitarian role: it acts as a sort of safety valve for people who are obliged to leave their country for political, religious, racial or other reasons.

Unlike most of the other demographic processes, international migration is particularly susceptible to the vicissitudes of economic, social and political conditions. Although long-standing trends continue, cyclical changes may alter international migration for short periods. Inversely, new trends may emerge, obliging Governments to take new measures. This is therefore a field of frequent change. One final factor further complicates the analysis of perceptions and policies with regard to international migration: the sometimes extensive movements of illegal migrants. Originally such migration came primarily from neighbouring countries but the movement is becoming increasingly transcontinental.

Here, a distinction will first be made between the main regions of immigration and the principal countries of emigration in the world in 1978. Then the way in which the Governments concerned perceive the problems posed by these movements and the policies implemented between 1976 and 1978 will be reviewed. Several main poles of attraction have become apparent: the petroleum-producing countries of the Middle East and North Africa; the countries of Western Europe and North America; South American countries (Brazil, Venezuela, Argentina and Ecuador); African countries (the Ivory Coast, Gabon, Senegal and South Africa); and lastly, the industrialized countries of the Pacific (Australia and New Zealand). Some of the problems raised by the countries of immigration and of emigration in the areas already mentioned will be examined below.

The petroleum-producing countries of North Africa and the Middle East appear to be exercising a growing attraction, not only in terms of the volume of immigrants they receive but also in terms of the geographical origin of the immigrants. For example, Somalia and Mauritania are now participating in this movement for the first time, while the Republic of Korea and the Philippines are sending immigrants on short-term contracts, and countries such as the Sudan, Yemen, the Syrian Arab Republic, Jordan, Turkey and Egypt continue to contribute to the flow. However, some of them, for example, the Syrian Arab Republic and Jordan, are concerned about the considerable proportion of their skilled manpower that is involved in the movement. Lastly, non-Arab foreign workers, many of them from India and Pakistan, are having difficulties in adjusting, particularly in the United Arab Emirates. Iran's capacity to absorb manpower seems to have declined simultaneously with its rate of development.

In the countries of Western Europe, immigration primarily from the countries bordering the southern Mediterranean, from the West Indies and from southern Europe continues at a very slow rate. Certain countries of immigration have virtually closed their borders except to migrants who

are citizens of the European Economic Community. Furthermore, there is a general trend towards reducing the immigrant population. Some countries, Austria, France and the Federal Republic of Germany for example, have introduced financial incentives for the repatriation of immigrants. At the same time, the growing number of bilateral agreements between countries of immigration and countries of emigration help, among other things, to improve conditions for immigrants, since efforts are being made to integrate them more fully into the life of the host country. In some European countries of emigration, such as Greece, Finland and Ireland, there is a growing desire to see this outward movement decreased and, if possible, to have the emigrants repatriated. On the other hand, the Netherlands would like more people to emigrate.

In North America, the main pole of attraction is still the United States of America, which is experiencing acute problems involving illegal immigrants, especially from Central America and the West Indies. In Canada, a comprehensive review of short-term and medium-term development prospects prompted the Government to adopt a more restrictive attitude toward immigration, the volume of which is now closely tied to the demographic and economic situation: this is a basic change in an attitude that had previously been very liberal.

In South America, while Brazil, Uruguay and Venezuela would like to maintain immigration at the present levels, Argentina, despite vigorous efforts, still considers its immigration to be too low. Ecuador, after the rapid development of its economy, is now receiving a growing number of immigrants. Bolivia and Guyana are for the first time showing an interest in allowing a number of immigrants to settle in their territories. In contrast, Colombia and the Dominican Republic now consider their rate of emigration to be too high.

In Africa south of the Sahara, the poles of attraction are more widely dispersed. South Africa continues, at a reduced rate, to attract emigrants from the neighbouring countries of Botswana, Lesotho, Swaziland and Malawi, which are obliged to accept this situation. In West Africa, Senegal, the Ivory Coast and Gabon constitute three smaller poles of attraction. In the case of Gabon the Government's attitude towards migration has changed: an influx of political refugees has led the Government to view its immigration as being too high.

Lastly, in Asia and the Pacific, Australia has expressed a wish to receive 200,000 immigrants in the next three years. New Zealand now considers its level of emigration to be too high, whereas it had previously considered the immigration level to be too high. Because of the political situation in the Indo-Chinese peninsula, the Government of Thailand considers its level of immigration (which consists almost entirely of refugees) to be too high. Both skilled and unskilled workers are emigrating from the Republic of Korea and Pakistan; the latter now considers its level of emigration to be too low.

Table 14 gives a comprehensive picture of Governments' perceptions and policies with regard to immigration. A relatively small proportion of developing countries—24 out of 116—consider immigration to be of demographic importance: in the case of the industrialized countries, however, this proportion is much higher: 15 countries out of 42. It should be noted that these views apply only to migration that is large enough to have a demographic effect. Some Governments may be very concerned by the migration of skilled manpower, although it has no

TABLE 14. GOVERNMENTS' PERCEPTIONS OF THE DEMOGRAPHIC IMPORTANCE OF IMMIGRATION AND THE ACCEPTABILITY OF PRESENT LEVELS
(Number of countries)

Regions and countries	Governments that consider immigration to be					Total
	Demographically important			Demographically unimportant		
	And unsatisfactory: too low	And satisfactory	And unsatisfactory: too high	Although more immigration desirable	And perceived as satisfactory	
Economic Commission for Africa	3	3	2	1	41	50
Economic Commission for Western Asia	1	6	—	1	4	12
Economic Commission for Latin America	1	1	1	3	21	27
Economic Commission for Europe	1	11	2	—	25	39
Economic and Social Commission for Asia and the Pacific	2	2	3	—	23	30
Developed countries	2	11	2	—	27	42
Developing countries	6	12	6	5	87	116
TOTAL	8	23	8	5	114	158

TABLE 15. GOVERNMENTS' POLICIES ON IMMIGRATION
(Number of countries)

Regions and countries	Governments' policies in favour of				Total
	Higher rates of immigration	Maintaining present rates but with strict control	Slowing future immigration but maintaining already established immigrant population	Immigration considered demographically unimportant or not desirable	
Economic Commission for Africa	3	3	2	42	50
Economic Commission for Western Asia	1	6	—	5	12
Economic Commission for Latin America	4	1	1	21	27
Economic Commission for Europe	1	2	11	25	39
Economic and Social Commission for Asia and the Pacific	1	4	2	23	30
Developed countries	2	2	11	27	42
Developing countries	8	14	5	89	116
TOTAL	10	16	16	116	158

demographic consequences since very few people are involved.

Among the industrialized countries that consider immigration to be demographically important, 11 countries have said they are satisfied, while four are dissatisfied because the level is either too low or too high. Among the developing countries, the number expressing satisfaction and dissatisfaction is equally divided (12 in each case). Of those expressing dissatisfaction, six feel the level is too high and six consider it to be too low.

Official policies to control immigration are presented in table 15. This table concerns itself with legal immigration and the policies relating to it; it does not represent illegal migration. Among the industrialized countries, two have adopted a policy to increase immigration, two have a policy designed to maintain the present rates and 11 have a policy designed to slow immigration down. The figures for the developing countries are 8, 14 and 5, respectively.

Table 16 presents perceptions with regard to emigration. The proportion of countries concerned about emigration compared with the proportion concerned about immigration is larger in the case of developing countries (45 countries out of 116) and smaller in the case of the industrialized countries (11 countries out of 42, a relatively high figure in view of the levels of living and of employment achieved by most of these countries). Among the developing countries, 24 have said they are satisfied while 21 are dissatisfied; of the latter, 17 are dissatisfied because emigration is too high. Among the industrialized countries, only one country says it is satisfied; 10 are dissatisfied, 8 of them because the level of emigration is considered too high.

Table 17 contains information on the emigration policies adopted by Governments. Eight developed countries want to slow down emigration, two want to accelerate it and one wants to maintain it. On the other hand, 23 developing

TABLE 16. GOVERNMENTS' PERCEPTIONS OF THE DEMOGRAPHIC IMPORTANCE OF EMIGRATION AND THE ACCEPTABILITY OF PRESENT LEVELS
(Number of countries)

Regions and countries	Governments that consider emigration to be					Total
	Demographically important			Demographically unimportant		
	Unsatisfactory: too low	Satisfactory	Unsatisfactory: too high	More emigration desirable	Satisfactory	
Economic Commission for Africa	1	15	5	1	28	50
Economic Commission for Western Asia	—	2	1	1	8	12
Economic Commission for Latin America	—	4	10	—	13	27
Economic Commission for Europe	3	1	7	—	28	39
Economic and Social Commission for Asia and the Pacific	2	3	2	1	22	30
Developed countries	2	1	8	—	31	42
Developing countries	4	24	17	3	68	116
TOTAL	6	25	25	3	99	158

TABLE 17. GOVERNMENTS' POLICIES ON EMIGRATION
(Number of countries)

Regions and countries	Governments' policies in favour of			Emigration considered demographically unimportant or not desirable	Total
	Higher rates of emigration	Maintaining present rates	Slowing future emigration		
Economic Commission for Africa	1	15	4	30	50
Economic Commission for Western Asia	—	2	1	9	12
Economic Commission for Latin America	—	3	11	13	27
Economic Commission for Europe	3	1	7	28	39
Economic and Social Commission for Asia and the Pacific	2	3	2	23	30
Developed countries	2	1	8	31	42
Developing countries	4	23	17	72	116
TOTAL	6	24	25	103	158

countries have policies aimed at maintaining emigration at its present level, 17 have policies aimed at slowing it, and four have policies aimed at accelerating it.

Summarizing the situation with respect to policy changes that have influenced international population movements between 1976 and 1978, it is clear that very few countries are prepared to receive large numbers of permanent immigrants, and in those countries which do, selective measures are frequently imposed. With regard to temporary migration, there has been a continuing reduction of migration flows toward Western European countries. In contrast, the oil-producing countries of Northern Africa and the Middle East are continuing to attract immigration of this type, and there are similar movements among various Western African and Latin American countries. A large number of countries, whether they are closed or remain officially open to immigration, have experienced a sizeable influx of illegal migrants, resulting in even stricter measures of control on the part of the receiving countries.

With respect to emigration, there has been a general decline in the number of countries desiring the permanent

emigration of their citizens. There has also been a growing desire to control, whether in a direct or indirect manner, the exodus of qualified personnel. On the other hand, the flow of non-qualified temporary workers, many of whom enter the receiving countries illegally, has not been subject to strict measures of control on the part of the sending countries. The political and economic motives for such an attitude are evident.

GENERAL PICTURE OF SOME PRESENT AND FUTURE PROBLEMS ASSOCIATED WITH POPULATION POLICIES

Present problems associated with population policies

The analysis contained in the preceding section of this article pertained to Governments' perceptions and policies with regard to each of the demographic processes, which were taken separately and examined by abstracting them, so to speak, from the socio-economic context in which Governments place them. In reality, Governments have an extremely complex perception of the respective roles

played by these processes in the achievement of their development objectives. These perceptions will now be considered in a more synthesized manner; the same demographic processes will be examined in terms of their interaction, on the one hand, and in the more general framework that includes socio-economic processes, on the other.

Governments' view of the complexity and relative importance of individual demographic processes in development problems

A very large majority of the countries which consider that their development problems are, to a greater or lesser extent, demographic in origin also believe that not one but several demographic processes are involved.⁹ Table 18 shows that only 14 countries believe that a single demographic factor is responsible for their development problems. On the other hand, 33 countries think that two processes are involved, 41 point to three processes and 47 to four processes. Governments' perception of population problems is therefore based on the complicated interaction of a complex of demographic processes rather than on the specific effects of just one of them.

TABLE 18. NUMBER OF DEMOGRAPHIC PROCESSES CITED SIMULTANEOUSLY BY GOVERNMENTS AS OBSTACLES TO DEVELOPMENT.

Number of demographic processes	Developed countries	Developing countries	Total
0	7	2	9
1	9	5	14
2	10	23	33
3	10	31	41
4	6	41	47
5	—	14	14
TOTAL	42	116	158

TABLE 19. FREQUENCY WITH WHICH DEMOGRAPHIC PROCESSES ARE IDENTIFIED BY GOVERNMENTS AS CAUSING DEVELOPMENT PROBLEMS

Demographic process	Developed countries	Developing countries	Total
Spatial distribution	29	110	139
International migration ^a	26	76	102
Rate of natural increase and			
over-all fertility level	13	68	81
Too high	—	44	44
Too low	13	24	37
Mortality	—	78	78 ^b
Fertility in relation to family well-being	20	61	81

^a Qualitative and quantitative aspects.

^b Countries stating in 1978 that a life expectancy at birth below 62 years was unacceptable.

Another interesting fact emerges from table 19: the varying degree of frequency with which certain demographic processes are mentioned as the source of serious development problems. For most countries, particularly the developing countries, spatial distribution is the one most often mentioned, since 110 of these countries have

referred to it. However, the fact that 110 countries mention spatial distribution does not mean that it is the cause of their most serious problems but merely that this process, in varying degrees of seriousness, occurs most frequently among the problems cited. The same is true of the other processes, which will be studied in descending order of frequency. In the case of the developing countries, spatial distribution is followed by mortality (78 countries), both the qualitative and quantitative aspects of international migration (76 countries), natural increase and unsatisfactory fertility level (68 countries), and fertility in relation to family well-being (61 countries). In the case of the industrialized countries the order is somewhat different: 29 out of 42 countries referred first to spatial distribution, 26 countries to international migration, 20 countries to fertility in relation to family well-being, and 13 countries to natural increase and unsatisfactory fertility level. Mortality is not mentioned by any industrialized country as the cause of a major development problem.

Governments' view of the relative role of demographic and non-demographic processes in development problems

Since the Bucharest Conference, there has been a considerable trend, particularly among the Governments of the developing countries, towards an increasingly sophisticated analysis of the respective roles of demographic and non-demographic processes in their development problems.¹⁰ In the preceding section it was pointed out that the perception of the rate of natural population increase was the end result of a complex process, taking into account the short-term and long-term advantages and disadvantages of that increase. It was also noted that, on the basis of that analysis, Governments decided whether or not to take action in order to change an unsatisfactory rate. The means of action selected were quite varied, ranging from population policies of direct action with regard to the components of the rate of increase through policies of indirect action with regard to the socio-economic determinants of these processes to policies of socio-economic restructuring aimed at adapting the production apparatus and the structure of society to population trends.

The variety of governmental positions on the types of action considered most effective depends ultimately on the relative importance Governments attach to demographic and non-demographic processes in their analysis of development problems. The same problem may even be termed demographic by some Governments and non-demographic by others. This is true, for example, of employment. Some Governments consider the employment problem to be caused primarily by a high rate of population growth; they therefore qualify it as demographic. Others believe that it is due primarily to national or external economic or technical factors and they refer to it accordingly as economic or technical. The type of action selected to solve this problem therefore depends on what is believed to be the determining factor in the imbalance observed.

Governmental analyses of the greater or lesser importance of demographic processes are based on three hypotheses, which are not mutually exclusive but may be combined in various ways. First of all, some Governments believe that demographic processes, with their inherent inertia, exist almost independently of the national socio-

⁹ See "Main findings of the First Round of Monitoring of Population Policies: note by the United Nations Population Division" (ESA/P/AC.9/5).

¹⁰ *Ibid.*

economic context, and as such are the main cause of development problems. However, many more Governments believe that imbalances at the national level between demographic and non-demographic processes are the main source of development problems and that these problems therefore have both demographic and non-demographic origins. Lastly, a third group of Governments believe that external factors play a considerable part in the aggravation of the imbalances already observed at the national level between demographic and non-demographic processes. Again using the example of employment, these countries believe that technological dependence on the industrialized nations and shortage of capital, rather than an overly rapid increase in the working population, are the primary causes of their employment problems. It should be noted that the latter assumption is directly linked to that made in the Declaration on the Establishment of a New International Economic Order (General Assembly resolution 3201 (S-VI)).

Diversity of governmental population policies

Variety of objectives

For most Governments, demographic action is aimed not at a single objective but at a complex of objectives. As has been seen, Governments generally identify a complex of related demographic processes as the source of their problems and then try to take action with regard to several of them at once. For example, very few of the 136 Governments which consider that the rate of natural increase presents a problem single out that process when they decide to take action; 57 take action simultaneously with regard to mortality, spatial distribution, international migration and non-demographic processes, and 72 take action on the same combination of demographic and non-demographic processes, plus fertility. Some countries also establish both demographic and non-demographic objectives for their action. Each Government uses the same means for different purposes, depending on what it considers appropriate. Family policies provide a good example of those that may have a demographic as well as a non-demographic objective, one of which is given a more or less predominant role, depending on the circumstances. Lastly, these objectives may conflict to some extent: this is true of fertility policies, where individual freedom may not always coincide with the collective interest. Some Governments, particularly those of industrialized countries that have pro-natalist policies, try to overcome these contradictions by a variety of incentives, the cost of which may be very high for the community as a whole. This is also true of spatial redistribution policies, which must reconcile the sometimes conflicting imperatives of creating the industrial activity that generates jobs and of protecting the environment.

Diversity of measures adopted

The measures taken by Governments include: (a) those that have a direct effect on demographic processes (curative medicine, distribution of contraceptives, regulation of external migration etc.); (b) those that tend to modify the context that determines demographic behaviour (increasing family benefits with the birth of each child, tax incentives for decentralized businesses etc.); (c) those that alter a socio-economic situation whose continuance would exacerbate the effects of a population trend already felt to be a cause for concern (land reform in a region where the rate

of natural increase is high); and (d) those aimed at reducing national dependence on the industrialized countries through more autonomous development (developing a local industrial production technology that requires small investments and makes intensive use of abundant manpower, rather than employing an imported technology that requires large investments and little manpower).

Diversity of elements of the population

When formulating and implementing policies, Governments distinguish between the different elements of the population that their action is likely to affect, for example, individuals, families, national subgroups, the national population and multinational groupings. One of the recent features of the trend in population policies has been the growing recognition in the formulation and execution of population policies of the rights of individuals and families, but the recognition of these rights does not always coincide with the interests of the national community as a whole. While the manipulation of individual behaviour with a view to achieving the collective behaviour regarded as necessary may be accepted without too much difficulty in areas such as mortality, the same is not true in other areas, such as fertility and internal migration, especially since in these two cases there is a sort of growing "individualization" of behaviour in so far as it is considered an integral part of the exercise of individual rights.

The same type of conflict, perhaps even broader in scope, occurs with regard to the sometimes contradictory interests of national subgroups and the national population as a whole. In the case of ethnically and socially heterogeneous populations, governmental action is a sensitive matter. It has already been observed that several developed and developing countries face a dilemma in choosing between a uniform national policy, which may have negative effects on the existing demographic balance between different groups, or a selective policy which is difficult to accept in terms of national equity for the groups that are excluded. Although these political factors are too often underestimated in analysing governmental action, they are of decisive importance. Moreover, such concern for demographic balance or, in other cases, for the balance of power has long been apparent at the international level as a major factor in the choice of population policies.

Future problems associated with population policies

A number of these problems will be examined in the order currently assigned to them by the Governments of developed and developing countries.

In developed countries

Although the proportion of developed countries experiencing difficulties caused by the spatial distribution of their population is smaller than the proportion of developing countries, these difficulties nevertheless occur quite frequently. The industrial mobility necessary to the functioning of the economic apparatus constantly creates problems of adjustment. Some countries are also starting to show concern at the excessive depopulation of rural areas, which has reached its limit, while others must still cope with relatively large-scale migration from the countryside

to the towns. The development of new urban centres and the decline and renovation of older ones also present problems for almost all Governments. Lastly, problems of environmental protection add a new dimension to spatial distribution policies.

First of all, international migration as a substitute for cheap national manpower, which has become scarce because of zero population growth or negative growth, still raises serious problems. However, because of the present economic crisis and the growing social costs for manpower from the countries closest to the industrialized countries, countries of immigration are slowing down the entry of foreign workers and in some cases are even trying to repatriate them, after negotiating with the countries of origin that can and want to allow their nationals to return. However, a reversal of economic conditions could change the attitude of the countries of immigration, which might then turn to more distant countries of emigration not yet tapped for manpower. In the industrialized countries of the West, emigration policies will therefore be at the centre of the complicated problems involved in mastering the factors of production needed for what is deemed to be the optimal growth of the economy and also at the centre of the new political and economic relations that must exist between North and South. Finally the problems of undocumented immigrants and refugees will continue to give a number of Governments cause for concern.

The decline in fertility observed for the past 10 years or so in the industrialized countries has caused growing concern among Governments: more than half the countries of the most developed regions actually have net reproduction rates below unity. However, governmental reactions have not been exactly the same in the countries where international migration could help to offset this phenomenon and in other countries where international migration is practically non-existent and long-term action on fertility is the only alternative. It remains true, however, that a growing number of those countries having adopted policies to correct this situation, which they consider dangerous, have established quantitative objectives, whereas others have established qualitative objectives such as a "stationary population". One of the problems to be tackled by the Governments of these countries will be the implementation, at a cost acceptable to the community, of flexible and effective measures that will permit the attainment of a nearly "stationary" state while, if possible, preventing the population from fluctuating above or below this stationary level. This is an especially difficult task in countries where very contradictory influences may at any time affect the wide variety of factors that determine fertility. Furthermore, the success of policies leading to this stationary state, and the age structure resulting from it, will cause other problems, for example, a reduction in the mobility between generations and the stabilization of the percentage of the population at retirement age at an unprecedented level—about 15 per cent of the total population.

With regard to mortality, Governments face two main problems: reducing the differential effects of living and working conditions on mortality at different ages for men and women and meeting the growing costs of curative medicine for an aging population in which the exogenous causes of mortality have been practically eliminated. As regards the first problem, Governments will probably place greater emphasis on action aimed at education and prevention, out of concern for both budgetary and medical effectiveness. As to the second problem, unless revolutionary

medical discoveries are made, enabling mankind to wipe out the major causes of death, such as cancer, it is unlikely that much progress can be achieved.

In developing countries

Controlling national space in terms of population, like combating mortality, is a priority concern of the Governments of developing countries. Here again, increasing efforts will be made to develop policies to control the growth of metropolitan cities, to promote other urban centres, to improve the balance between the levels of living of urban and rural populations and, especially, to make more intensive use of regional development plans as a basic instrument for integrating the entire population into the national development effort and for distributing the benefits derived therefrom. Considerable progress remains to be made in this respect, both in analysing the processes involved and in finding measures to solve the problems that have been encountered. However, it should be noted that these problems can be solved only partially by Governments, which must take considerable external influences into account.

As has been seen, the disturbing trend in mortality in the developing countries, particularly among young children, will probably lead to a redoubling of efforts and cause health programmes to be revised in order to adjust them to the national realities of each country and integrate them more fully into development programmes. One of the probable consequences of this revision, prompted by the desire to eliminate specific problems such as child mortality and mortality among the poorest populations in rural areas, will be the broadening of the content of these programmes to include such matters as education, nutrition and hygiene, and the adoption of new formulas to facilitate access to medical treatment for those most in need of it. These programmes will probably also incorporate a growing proportion of "family planning" features.

It should be pointed out that the population of the developing countries not yet concerned by the second stage of demographic transition has been estimated at 800 million (out of 3 billion), the remaining 2 billion having more or less recently begun to show a decline in fertility. Various trends are foreseeable with regard to fertility control. First of all, following the expansion of policies relating to the general welfare, families and the status of women, access to modern contraceptive methods will be further facilitated, and governmental aid will probably be increased. With regard to anti-natalist policies, except for two countries with large populations (Brazil and Nigeria), all other countries with more than 200 million inhabitants have policies aimed at reducing fertility, which will probably be maintained or extended further to include indirect measures and to serve, perhaps in conjunction with other measures, as the point of departure for general family welfare policies. The negative experience of India makes it unlikely that coercive measures will be adopted in the future. On the other hand, the spectacular reduction in fertility observed in some countries, for example, Singapore and Colombia, might prompt some Governments to abandon their programmes once they are sure that the decline in fertility has become irreversible.

The developing countries are becoming less and less homogeneous with respect to their levels of economic and demographic development, and this observation is particularly relevant in the analysis of international migration. Some of the more developed of these countries have be-

come countries of immigration like the developed countries. For the time being immigration to such countries is predominantly regional, but greater transcontinental movements are to be expected and they may create new problems for the host countries. As for emigration, a distinction should be made between the situation of those developing countries which have entered a relatively advanced phase of demographic transition and economic development, and those in a less advanced phase. A large proportion of the first category of countries, which supply large contingents of emigrants, will probably attempt to check this movement and to repatriate, with the support of some of the industrialized countries, part of their national manpower. Also in these countries, the emigration of professional and other skilled workers has acquired a new dimension or rather a new direction: South-North movement is now coupled with a South-South movement. The second category of countries, which are less advanced in economic and demographic terms and which have not joined the traditional current of emigration to the industrialized countries or the more advanced developing countries, will doubtless, as a first step, join the first category of countries and, as a second step, replace them in terms of the emigration of unskilled workers. Undocumented migrants and refugees in Africa and Asia are two concerns of increasing importance for a number of sending and receiving countries.

Development policies and population policies

Since the Bucharest Conference, there has been increasing insistence on the need to integrate population policies in development policies, but this is still a difficult task, and the method used is one of repeated trial and error in the absence of an adequate hypothesis concerning the reciprocal effects of demographic and non-demographic factors. However, certain interactions should attract the attention of political officials in connexion with the formulation and execution of population policies. At the national level, consideration should be given to such socio-economic processes as education, the status of women, unequal income distribution, suitability of technology to employment problems, the adequacy of capital and improving nutrition; this would usefully broaden the field of action and thus make population policies more effective.

Undoubtedly, the revision of the system of political and economic relations between the countries of the North and those of the South will provide a new setting for the analysis of the causes and effects of demographic tensions and will consequently help, at the international level, to make population policies more effective. In this respect it would be useful to establish a connexion between the objectives of sectoral strategies, such as the World Population Plan of Action, and the over-all objectives set forth in the International Development Strategy for the Second United Nations Development Decade (General Assembly resolution 2626 (XXV)) and in the Declaration on the Establishment of a New International Economic Order (General Assembly resolution 3201 (S-VI)). Finally a global improvement of the level of living of the developing world, particularly among the least developed countries—consequences of the implementation of new relations between North and South—will help to change the demographic trends observed in the developing countries.

A study of the mechanisms by which Governments' attitudes to demographic processes are formed and policies relating to the imbalance between demographic and non-demographic factors are formulated leads to the following conclusions.

First, the changes that have occurred recently in Governments' perceptions and policies seem less surprising if governmental programmes or statements over the past 10 years are examined more carefully. Most Governments, even those that give priority to programmes designed to modify spontaneous fertility trends, have recognized that measures dealing with fertility alone are not enough and that global strategies are necessary to solve the problems arising from the interaction between demographic and non-demographic processes. In these countries, a very clear trend has emerged in favour of incorporating such programmes in the development plans. Moreover, the recommendations in the World Population Plan of Action¹¹ on the desirability of integrating demographic processes into development merely confirm a need that has been felt for many years but could not be expressed earlier for want of an appropriate international forum.

In most cases, Governments do not form their perceptions of the rate of natural increase of the population on the basis of a "theoretical value" that has no significance in itself. However, pressures from those in international circles who hold the view that certain rates are "excessive", or the idea that population growth is synonymous with a society's vitality, have led some Governments to base their attitudes on values associated with the characterization of a population as being "too large" or "too small" or of a rate as being "too high" or "too low".

Fortunately, most Governments perceive the implications of the complex relations between the rate of population increase and economic and social factors first and foremost as basic postulates favouring or preventing the success of their development plan. Those complex relations develop generally in a predictable manner, as a result of processes of technological innovation and the effects of economic and social restructuring observed throughout the world. However, their development may sometimes be influenced by other factors, such as the geopolitical environment, the localization of some components of the international economic system, the legacy of certain socio-cultural traditions, and so on.

With regard to intervention, the Governments of developing countries, like those of developed countries, are adopting policies that are increasingly sophisticated but still insufficient to solve all the problems. As an example, mention might be made of a complex case of intervention, that of an industrialized country which is trying to check the decline in fertility while at the same time encouraging the employment of women, although it knows that the latter has a negative effect on fertility. Why should it make such an apparently contradictory choice? Because this same Government, for reasons of internal or external policy, wishes to increase the national female labour force in order to reduce its dependence on what it regards as too large a foreign labour force. It would be possible to give

¹¹ *Report of the United Nations World Population Conference, 1974, Bucharest, 19-30 August 1974* (United Nations publication, Sales No.E.75.XIII.3), chap. I.

examples of the same level of complexity in the developing countries, but their lack of human and financial resources and of institutions constitutes an additional obstacle.

Lastly, the individual has emerged as a new dimension in population policies. In a world where behaviour is, both in appearance and in fact, increasingly determined by systems of economic, social and political constraints imposed in the name of the common good, there has been a growing demand on the part of each individual and each family for freedom to decide its own destiny. Thus, fertility policies have very quickly responded to the desire expressed by families to procreate freely without any biological or social constraint. This demand of the individual has greatly contributed to the almost world-wide dissemination of such policies in 1976. There have been frequent conflicts of interest between the individual good and the collective good. Governments have tried to resolve them in the national context in which they occurred. In that regard, history, culture and society are three interrelated factors which compel Governments to find original national solutions that do not, as a rule, include any preconceived patterns of intervention.

In addition to the growing awareness of the complexity of the problem, the adoption of increasingly sophisticated population policies to deal with that complexity, and the recognition of the demands of the individual, some other developments may be mentioned. At the level of policy objectives, there has been an increasing use of policies that might be described as non-demographic in their means but

demographic in their ultimate purpose. An awareness of the interaction between demographic and non-demographic factors leads to the application of programmes aimed mainly at changing the general environment by ensuring the well-being of the population. Although measures designed to improve nutrition, housing and education, to provide work, to industrialize a region or to change the status of women may have no direct demographic purpose, they have an indirect effect on the demographic behaviour of individuals and therefore on the over-all demographic trends of the population. Measures to promote the well-being of the population have done more than anything else to place population policies in the broader context of development, and at the same time have led to a clearer definition of their content. Things have changed considerably from the time when the term population policy was synonymous with birth-control policy. Now population policies include action with regard to the four principal demographic variables: mortality, fertility, internal migration and external migration.

To sum up, in 1978 a dual trend may be seen in the formulation of demographic policies: on the one hand, there has been a universalization of some forms of intervention that are purely demographic, such as intervention in the matter of fertility, but which have elements that had previously been lacking; and, on the other hand, there is widespread recourse to intervention on several levels at once, such as intervention with regard to economic and social structures, which has, *inter alia*, an indirect effect on population levels and trends.

ANNEX I

List of countries that have adopted policies to reduce their rate of natural increase, by period during which the policy was maintained

	1950	1955	1960	1965	1970	1975
India	XX					
Barbados	XX					
China	XX					
Tonga		XX				
Bangladesh		XX				
Pakistan		XX				
Republic of Korea		XX				
Viet Nam		XX				
Egypt		XX				
Fiji		XX				
Malaysia ^a		XX				
Mauritius		XX				
Tunisia		XX				
Sri Lanka		XX				
Trinidad and Tobago		XX				
Turkey		XX				
Jamaica		XX				
Nepal		XX				
Singapore ^a		XX				
Iran		XX				
Kenya		XX				
Morocco		XX				
South Africa		XX				
Dominican Republic		XX				
Indonesia		XX				
Ghana		XX				
Botswana		XX				
Colombia ^a		XX				
Philippines		XX				
Thailand		XX				
Swaziland		XX				
Samoa		XX				
Mexico		XX				
El Salvador		XX				
Grenada		XX				
Lesotho		XX				
Haiti		XX				
Seychelles		XX				
Papua New Guinea		XX				

^a The Governments of Colombia, Malaysia and Singapore have changed their perception and currently consider their rate of natural increase to be satisfactory as a result of the success of their action to reduce it.

ANNEX II

Distribution by regional commission of the countries included in this study

<i>Economic Commission for Africa</i>	<i>Economic Commission for Western Asia</i>	<i>Economic Commission for Latin America</i>	<i>Economic Commission for Europe</i>	<i>Economic and Social Commission for Asia and the Pacific</i>
Algeria	Bahrain	Argentina	Albania	Afghanistan
Angola	Democratic Yemen	Bahamas	Austria	Australia
Benin	Iraq	Barbados	Belgium	Bangladesh
Botswana	Jordan	Bolivia	Bulgaria	Bhutan
Burundi	Kuwait	Brazil	Byelorussian	Burma
Cape Verde	Lebanon	Chile	Soviet Socialist	China
Central African Republic	Oman	Colombia	Republic	Democratic Kampuchea
Chad	Qatar	Costa Rica	Canada	Democratic People's Republic of Korea
Comoros	Saudi Arabia	Cuba	Cyprus	Fiji
Congo	Syrian Arab Republic	Dominican Republic	Czechoslovakia	India
Djibouti	United Arab Emirates	Ecuador	Denmark	Indonesia
Egypt ^a	Yemen	El Salvador	Finland	Iran
Equatorial Guinea		Grenada	France	Japan
Ethiopia		Guatemala	German Democratic Republic	Lao People's Democratic Republic
Gabon		Guyana	Germany, Federal Republic of	Malaysia
Gambia		Haiti	Greece	Maldives
Ghana		Honduras	Holy See	Mongolia
Guinea		Jamaica	Hungary	Nauru
Guinea-Bissau		Mexico	Iceland	Nepal
Ivory Coast		Nicaragua	Ireland	New Zealand
Kenya		Panama	Israel	Pakistan
Lesotho		Paraguay	Italy	Papua New Guinea
Liberia		Peru	Liechtenstein	Philippines
Libyan Arab Jamahiriya		Suriname	Luxembourg	Republic of Korea
Madagascar		Trinidad and Tobago	Malta	Samoa
Malawi		Uruguay	Monaco	Singapore
Mali		Venezuela	Netherlands	Sri Lanka
Mauritania			Norway	Thailand
Mauritius			Poland	Tonga
Morocco			Portugal	Viet Nam
Mozambique			Romania	
Niger			San Marino	
Nigeria			Spain	
Rwanda			Sweden	
Sao Tome and Principe			Switzerland	
Senegal			Turkey	
Seychelles			Ukrainian Soviet Socialist Republic	
Sierra Leone			Union of Soviet Socialist Republics	
Somalia			United Kingdom of Great Britain and Northern Ireland	
South Africa			United States of America	
Sudan			Yugoslavia	
Swaziland				
Togo				
Tunisia				
Uganda				
United Republic of Cameroon				
United Republic of Tanzania				
Upper Volta				
Zaire				
Zambia				

^a Egypt also belongs to the Economic Commission for Western Asia.

THE DEMOGRAPHIC SITUATION IN DEVELOPED COUNTRIES

*United Nations Secretariat**

SUMMARY

The recent decline in fertility in developed countries, although it may look small in absolute terms, is actually dramatic when viewed in perspective. Interesting changes in fertility are also taking place in Eastern European countries. Migration levels and patterns have been changing in the developed world too. Structural changes are causing concern. These are the problems treated in this article, which is based on the results of the "monitoring" exercise carried out by the Population Division. The population policies in these countries are reviewed on the basis of the results of the Fourth Inquiry among Governments, as well as other official material available to the Population Division.

The fact that the population growth rates of developed countries have recently been near replacement levels should not be taken to mean that rates in those countries have become stationary or have stopped changing. In fact, recent declines in fertility in most of these countries, though they may look small in absolute terms, are actually dramatic when viewed in perspective, giving rise to concern among some Governments. Also of interest in this regard is the increase in fertility in Eastern European countries, apparently in response to Governments' concern. Migration levels and patterns have also been changing, as have the structures of these populations, notably the age distribution, which is giving rise to problems of increasing seriousness, namely, the aged population and the aging of the labour force.

The following discussion covers the recent demographic trends in these developed countries, which, for demographic purposes, consist of the countries of Europe and Northern America, the USSR, Japan, Australia and New Zealand. The discussion is based on the results of the "monitoring" exercise carried out by the Population Division of the United Nations. The population policies in these countries are also reviewed on the basis of their responses to the Fourth Inquiry among Governments, conducted by the United Nations, as well as on other official material available to the Population Division. Particular attention is paid here to fertility, in view of its crucial role in the recent demographic situation in these regions.

POPULATION TRENDS

The total population of the more developed regions is estimated at 1.14 billion in 1975 and is expected to in-

* Population Division, Department of International Economic and Social Affairs.

crease to 1.18 billion by 1980, according to the preliminary results of the estimates and projections of the United Nations. The average annual growth rate of population in 1975-1980 will be 0.74 per cent. This low growth rate is significant in two ways: it is lower than the expected growth rate of 0.90 per cent for the same period in the previous United Nations assessment in 1973; and it is also lower than the growth rate of the preceding period (1970-1975) of 0.85 per cent.

The significant decline in the growth rate among the more developed regions began in the early 1960s, when it dropped from 1.3 per cent to 0.9 per cent per year. In the early 1970s it appeared that the growth rate had stabilized at that level. This apparent stabilization is, however, being proved false and the decline in the population growth rate is continuing, as shown above. If this trend continues, the population of the more developed regions in 2000 would be 1.35 billion instead of 1.39 billion as projected in 1973, and if the world population increases from 4.03 billion in 1975 to 6.21 billion in the year 2000, the share of the more developed regions would drop from 28.2 per cent to 21.7 per cent.

Population trends are not homogeneous among the eight more developed regions under consideration. There appear to be three distinct patterns of population trends among them. The first group includes Northern America, the USSR and Eastern Europe, where a gradual decline in the growth rate has been seen since the late 1950s or early 1960s. Eastern Europe is somewhat distinct from the other two regions in its initial low growth rate (less than 1 per cent per year in the early 1950s) and its recent shift to a rising growth trend, while no such rise has taken place in Northern America and the USSR. The second group comprises Northern Europe, Western Europe and Japan, where a rising growth rate in the 1950s has been followed by a subsequent drop. In the case of Northern and Western Europe, the down turn took place around 1965 and the more recent decline, especially since 1975, has been in compari-

son very rapid. In Japan, a gradual increase of growth rate was sustained throughout the 1960s, followed by a sudden decline after 1975. The third group includes Southern Europe, Australia and New Zealand, where the trend is characterized by a high growth rate. In Australia and New Zealand, however, the growth rate has been declining slowly since 1965, although the rate for 1975-1980 is still the highest among the more developed regions; the trend in Southern Europe, on the other hand, has been fluctuating at a high level.

The major factor behind the declining growth rate in the more developed regions is the trend of natural increase, in which declining fertility plays the key role. The average crude birth rate for the more developed regions as a whole has dropped continuously from 23.3 per 1,000 in 1950-1955 to 16.4 in 1975-1980, while the crude death rate, after dropping from 10.2 in 1950-1955 to 9.1 in 1960-1965, increased to 9.4 in 1975-1980. When each of the eight regions is considered separately, however, international migration turns out to be an important factor in some countries. For example, in Eastern and Southern Europe emigration was a big factor at least until 1965-1970. On the other hand, immigration contributed considerably to population growth in Western Europe, Northern America and Australia-New Zealand, although immigration in Western Europe seems to have slowed down considerably in 1975-1980.

Fertility

Crude birth rates and gross reproduction rates are uniformly low in the more developed countries. In nearly one half of these countries the measure is below 15. The gross reproduction rates for many of the more developed countries are currently below any previously recorded levels. In 1975, the most recent year for which a comprehensive picture can be had, the gross reproduction rate for 14 out of 34 countries was below 1.0. Since 1970, the trend towards fewer live births annually per 1,000 population, evident since the late 1950s or early 1960s, has continued, the exceptions being mainly within the regions of Eastern Europe. In many countries, birth rates are now below the previous nadir reached during the 1930s and early 1940s.

Within the developed regions, birth rates are relatively uniform. Among these countries, fertility is lowest in Western and Northern Europe (apart from Ireland) and in Italy and the German Democratic Republic. The number of live births recorded in 1977 per 1,000 of the mid-year population varied within the comparatively narrow range of 9.5 in the Federal Republic of Germany to 13.9 in Finland. Measures for Southern Europe (excluding Italy and Albania) varied from 15.4 in Greece to 18 for Malta and Spain. In Oceania, Japan, Northern America and the USSR, the range in crude birth rates was narrow: from 15.3 (United States of America) to 18.2 (USSR). Similar levels also mark the crude birth rate in the countries of Eastern Europe, where the range in 1977 was from 13.3 (German Democratic Republic) to 19.1 (Poland).

With respect to the most recent trends, post-1975 increases have been recorded in a number of countries. Whether these upturns denote a reversal of the downward trend is problematical. It may be argued that the change is temporary and merely represents planned childbearing by

women who had postponed births either by marrying late, by lengthening the interval between marriage and first birth or both. The changing mating patterns make it difficult to determine whether relatively more or fewer women are exposed to childbearing risks and, consequently, whether the level of marital fertility is actually changing. Several developed countries recorded no alterations in their gross reproduction rates for 1975 and 1976 compared with the level in 1970. This suggests that total fertility may be stabilizing. In Czechoslovakia, the German Democratic Republic and Hungary, the measure rose in the period 1970-1975, but in the latter two countries (for which data are available) it remained steady in 1976. The post-1970 rise in fertility among these countries is believed to have been caused by the institution of social and population policies designed to bring about higher fertility. Nevertheless, as a longitudinal survey in Hungary has revealed, some of the policies serve as an inducement to family building at the outset, but the incentives soon become part of the family's standard of living and then become less of a stimulant to childbearing.

There is an indication that fertility in a number of the more developed countries has declined below the level required for replacement; in 1976, 11 countries had a gross reproduction rate of less than 1.0. Significantly, for 1975 or 1976, deaths exceeded births in Austria, the Federal Republic of Germany, the German Democratic Republic and the United Kingdom.

It has been suggested that, if present trends persist, the prospect of a stationary, if not a declining, population will become a real possibility in many developed countries by the turn of the century. In this connexion, the notion has been put forward that certain developed countries are in the process of going "beyond" the demographic transition. In these so-called "post-transition" societies, fertility (more than mortality or migration) is the most important demographic component of population growth, and there is a renewed interest in the social, demographic and economic factors that affect its change. Some demographers have expressed the view that, in societies where reproduction is under almost complete control, the traditional explanations of fertility decline during the initial phase of demographic transition are not adequate for today's fertility fluctuations. Industrialization, urbanization and the spread of education are so advanced in these societies that the effects of these processes *per se* on fertility trends are minimal. Although we are hesitant to dismiss as impossible a return to higher levels of fertility in the industrialized countries, it is believed that existing low levels of fertility will be punctuated by periods of elevated fertility in response to economic conditions and/or governmental policies. In a demographic phase such as this, fertility levels may rise and fall in response to short-term economic fluctuations, to legislative changes affecting access to abortion or to other governmental measures designed to influence reproductive behaviour.

The present decline of fertility is explained in part by a slight reversal of the downward trend in age at marriage, and a major decline in the rate at which married women are bearing children. Since the Second World War fertility has come under ever-increasing control throughout the industrialized world. The fall in marital fertility may be attributed equally to a fall in the rate of unwanted fertility and to a decline in the number of wanted births. There has been no return to large families. Rather, there has been a

slight increase in the frequency of childless and one-child families and a greater ability to fulfil family size targets in the two-to-three-child range.

Consolidation of the two-to-three-child norm is most clearly seen in birth order changes. In most countries, decreases in birth rates for all birth orders have contributed to the declining fertility rate since 1970, but the rate of decline has been much greater for the higher birth orders. In the United States of America, for example, between 1970 and 1973 first, second and third order birth rates declined an average of 18 per cent, while fourth and higher order births declined an average of 40 per cent.

Another important development in reproductive behaviour in several post-transitional societies has been an alteration in both the length of the childbearing period and, most recently, a delay in the commencement of childbearing. Whereas in the past children were born throughout the reproductive period, childbearing is now confined to the early portion of the reproductive career. The trend has been documented, for example, in Finland. Until 1920 one third of the fertility of married women was in the age class 35 years and over. By 1972-1974 the share of these older age groups had declined to 9 per cent. During the period 1971-1975, fertility rates for British women aged 35-39 years were 62 per cent below those achieved in 1946-1950; for women aged 40-44 years the reduction was 69 per cent. The pattern is such that childbearing above age 35 years is becoming rare.

A more recent alteration in the tempo of childbearing has been the delay in the onset of childbearing. In recent years young women are having fewer births and more young women are remaining childless. In England and Wales there has been a sharp increase in the percentage of marriages remaining childless in the early stages of marriage, and in the United States of America also relatively larger numbers of younger women have so far elected not to have children. At the beginning of 1966, in the latter country, 13 per cent of the white women who had reached the age of 30 had no children; by 1976 this had increased to 21 per cent. Although at present the above phenomenon is best described as a delay in childbearing, as current cohorts complete their reproductive periods there could be an increase in "career" childlessness.

The recent fertility decline in post-transitional societies, or developed countries, which is largely attributed to a dramatic reduction in births to women exposed to pregnancy risks rather than a reduction in the number of women exposed to pregnancy, has been accomplished through the ever-increasing use of effective means of contraception. In short, the principal factor has been a decline in unwanted fertility.

In countries for which data are available, a steady increase in the general use of contraception and in the use of the most effective methods—the pill, the intra-uterine device (IUD) and sterilization—has been documented. According to results of the United States National Fertility Studies of 1965, 1970 and 1975, there was a dramatic change in the most commonly used methods of contraception among married couples during the period 1965-1975. Couples using one of the three more effective methods increased from 37 per cent of all couples practising contraception in 1965 to 74 per cent in 1975. Until the 1960s, coitus interruptus and the condom accounted for most of the methods of contraception used in the United Kingdom,

but there was a significant change with the introduction of the pill and the IUD. In a survey of Englishwomen who gave birth to a legitimate child in 1975, nearly half of the respondents used either the pill or IUD for birth regulation compared with fewer than one quarter in a comparable survey taken in 1967/68. During the same period, the proportion of married couples using coitus interruptus fell from 21 to 4 per cent, those using the condom from 36 to 17 per cent, and those using no method of contraception at all dropped from 16 to 7 per cent. In three family planning surveys carried out in Hungary in 1958, 1966 and 1974 there has been shown to be a steady increase in the total number of women practising some form of birth control, from 76 per cent of the women in 1958 to 84 per cent in 1966 and 90 per cent in 1974. Data from the most recent (1978) survey in France indicate that among married women aged 20-44, 26 per cent are currently using the pill and 10 per cent are sterilized.

The use of sterilization has increased both in the United States and in the United Kingdom, but much more so in the United States. By 1975, the proportion of white couples who had been sterilized for contraceptive purposes was almost equal to the proportion using the pill (31 per cent *versus* 34 per cent). Sterilization is now the single most popular method for couples married 10 years or more.

The extension of access to abortion has paralleled the increased use of contraception. Within the last 10 years abortion laws have been widely liberalized. After 1955, countries in Eastern Europe greatly extended the grounds and facilities for abortion, although conditions for abortion in these countries have been more restricted in recent years. Austria, Denmark, Finland, Norway, the United Kingdom, the Federal Republic of Germany, France, Italy, Canada and the United States have all adopted liberalized abortion laws. The most dramatic example of the effect of abortion legislation on fertility occurred in several Eastern European countries during the 1960s. When laws permitting legalized abortion were repealed, the birth rate rose sharply in a very short time. In Romania the birth rate jumped from 14 per 1,000 in 1966, when abortion was abruptly prohibited in all but the most extreme circumstances, to 27 per 1,000 in 1967/68, but by the early 1970s the birth rate returned to the low 20s. Less change occurred in Bulgaria (1968-1970), Czechoslovakia (1964) and Hungary (1953-1955 and 1974), when those countries restricted the conditions for abortion. In general, however, reliance on abortion was always heavier in Eastern Europe than elsewhere in Europe, because access to modern contraceptives was limited.

In many countries, abortion is the most important contraceptive technique among young unmarried women. Because of this, the role of abortion in countries where extramarital fertility has always been common has assumed great importance in affecting fertility trends. In Sweden, for example, one of the most significant changes in fertility patterns since the end of the 1960s has been the dramatic increase in fertility outside legal marriage. One fourth of all births in 1972 occurred to women who were not married, and between 1960 and 1972 the number of abortions increased eight times. Even though abortion legislation had been liberalized during the period, it is estimated that the major part of the increase was real, that is, it included legal and illegal abortions. The rising trend in

Sweden coincided roughly with the decline in age-specific fertility rates that began around 1964. Abortion in Sweden seems to be one of the important ways in which women have curtailed childbearing, and they have resorted to this means to an increasing extent in recent years.

Given the availability and expanding use of efficient contraceptive techniques and abortion, to what family sizes will couples restrict their fertility? It seems unlikely that these post-transitional societies will return to large families. It is more in the range from zero to three births that uncertainty remains. For choices even within this seemingly narrow range, socio-economic differentials persist and economic conditions and government policy could affect couples' intentions regarding family size.

A leading hypothesis is that improvements in the condition of women will continue to have a depressant effect upon fertility. In this context, and for want of better indices, condition (status) is usually measured in terms of women's employment outside the home and level of education. Information on age at marriage and proportions marrying is also used for this purpose. Unfortunately, because these measures are not universally adequate for defining status, studies of the relation of the condition of women to fertility in which they are used often give ambiguous results. Perhaps the main reason for the inadequacy of knowledge in this sphere is that, until very recently, changes in the status of women were on such a modest scale as to be barely perceptible. But it is highly likely that the net changes since the Second World War have been an important factor in producing the present low levels of fertility in the developed countries. Having greater access to education, girls study longer and marry later. Having greater access to paid employment, there is less need to marry for economic support. After marriage, women to an increasing extent have the option of bearing fewer children in order to ensure a measure of independence by continuing their economic activity.

While the needed demographic data are in reasonably good supply, women's status must be defined in a way that is compatible with the culture and consistent with the time. There is much room here for research, and the gains in knowledge can be considerable.

Mortality

During the past quarter of a century or so, mortality has declined in all of the more developed countries and the magnitude of variation among countries has been substantially reduced.

Examination of the most recent life tables prepared for 37 more developed countries (the average date being 1975) shows that male expectation of life ranged from a high of 72.7 years in Japan to a low of 64 in the USSR, and female expectation of life varied between 78.2 years in Norway and 70.2 years in Yugoslavia. With the exception of Japan, the highest level for each sex occurred in the Scandinavian countries. Japan is an important exception, since the recent figures reflect the extraordinary gains made during the past quarter of a century. Around 1950 Japan ranked thirty-fourth among the same group of 37 countries, with expectation of life for both sexes combined of 57.9 years.

Changes in levels and trends in mortality during the 1970s are more difficult to assess than the net changes since 1950. Beginning with 1970, life expectancy is avail-

able for more than one date for only 25 of the 37 countries. For many of the 25 countries there are too few observations over a long period to do more than suggest recent tendencies and any generalizations must be tentative. On balance, the expectation of life of females appears to have increased in more countries than that of males. In about half of the countries the fluctuations in the expectation of life of males arguably show no discernible trends and the same is true for females in perhaps seven of the 25 countries. The Eastern and Southern European countries and the USSR predominate among the group of countries showing no trend for either males or females. Within the different periods, Japan and the United States had the largest absolute increases in expectation of life for both males (3.4 and 1.9 years, respectively) and females (3.3 and 2.1 years). Judging from a comparison of the data from the earliest and most recent date for each of the countries, the expectation of life of females increased by slightly more than that of males. The average expectation of life for females at the earliest date was 6.1 years higher than that for males. By the most recent date the average had risen to 6.3 years.

Percentage changes between 1970 and 1975 in age-specific death rates in 34 more developed countries showed that the magnitude and ubiquity of recent reductions in age-specific death rates varied inversely with age. The most impressive improvements in recent years were made in the four youngest age groups. In approximately 20 of the countries, age-specific death rates for infancy and early childhood declined by at least 20 per cent. For the groups from 5 to 14 years of age, about 20 countries also showed reductions in age-specific death rates of 10 per cent or more. From 40 years of age throughout the remainder of the life span, the recorded age-specific death rates declined in fewer countries and the relative size of reductions was smaller.

Despite the similarities just pointed out, there are some important differences between recent changes in male and female death rates. In relatively few instances did female rates show an increase, but there was some deterioration in male mortality over a broad span of age groups. Death rates for males increased in five or more countries within each of the groups between the ages of 15 and 35 years. The most striking feature of changes in female mortality, as contrasted with male mortality, was the continued, and sizable, improvement in the middle and older ages. At least 10 countries showed improvements of 10 per cent or more at these ages. Of course, even large reductions at older ages translate into only small gains in expectation of life at birth.

Because they are so prominent a cause of death, the cardiovascular (and cerebrovascular) diseases deserve special attention. One of the most striking features of mortality trends during recent years has been the very substantial reductions in the cardiovascular diseases achieved by some of the more developed countries. In recent years, the greatest relative reductions in age-standardized death rates from cardiovascular diseases were those registered for males in the United States of America and Japan. Between the late 1960s and mid-1970s these rates dropped by 17 and 22 per cent, respectively. The United States also showed the largest decline for female rates (22 per cent). The percentage decline in the cardiovascular death rate for Japanese women ranked third among the more developed countries. It will be recalled that, over roughly the same period, Japan and the United States also achieved the largest re-

corded gains in expectation of life at birth. Although it would be necessary to decompose all changes in mortality by cause in order to attribute precisely the shares of life expectancy increases resulting from changes in different causes of death, it is clear that reductions in mortality from the cardiovascular diseases have made an important contribution to the current higher life expectancy in both countries.

International migration

In all the developed countries, despite substantial differences in the patterns and functions of international migration, the subject has become prominent as a policy issue in recent years. International migration in the developed countries falls chiefly into two categories. In Europe the predominant pattern has been a movement across international boundaries of workers and members of their families, ostensibly (and in the eyes of the Governments of the sending and receiving countries) for a temporary stay. On the other hand, migration to the developed countries of North America and Oceania more commonly continues to take the form of moves for permanent resettlement. The other developed countries—Japan and the centrally planned economies of Europe—have tended to experience comparatively little international migration.

Rapid economic expansion in Northern and Western Europe during the 1950s and 1960s, coupled with a relatively slow-growing domestic labour force, led to labour shortages that were dealt with in part by the introduction of foreign workers. This net inflow of immigrants marks a reversal of the pattern that had previously persisted for over a century for Europe to be a net exporter of international migrants. Most of the migrants of the recent decades to the Northern and Western European countries come from nearby: the nations of Southern Europe, Ireland, Finland, Turkey and North Africa. The United Kingdom also received large numbers of immigrants from Commonwealth (and former Commonwealth) countries. Some of the countries of Europe also received significant numbers of returning citizens from former colonies. However, the inflow of new worker migrants was brought to a nearly complete standstill around 1974 as a result of the economic slowdown and has not been revived.

Around 1975, the countries of Northern and Western Europe were estimated to have about 14 million aliens in their populations—some 7 per cent of the total. In some individual countries the percentages were notably higher, particularly in Switzerland and Luxembourg. The estimated number of immigrants who were temporary workers from outside Northern and Western Europe was about 6.5 million. The number of foreign workers has declined since its peak—by about 10 per cent from 1974 to 1976.

There are thought to be a significant number of undocumented migrants in the leading countries of labour immigration in Europe. A common conjecture is that there is one undocumented guest worker for every 10 who are legally present, but the number is, of course, impossible to verify.

There has been a decline in the total numbers moving from countries of emigration to countries of immigration. However, there continues to be a flow of migrants both within Europe and from Europe to overseas. As an example of the latter, the United Kingdom and Italy each cur-

rently have a net overseas emigration of about 25,000-30,000 per year.

Policies regarding international migration in Western Europe are based upon the principle of freedom of movement, including movement for employment purposes, within the countries of the European Economic Community (EEC); they include programmes to improve the status of non-EEC immigrants already present, to offer inducement to migrants from outside the region. A variety of measures to integrate foreigners into national life have been enacted; they provide for special attention to the needs of foreign children, language training, improved access to social services and, in some cases, the right to participate in community and trade union organizations (including in one country—Sweden—the right to vote in local and regional elections). Nevertheless, the existence of clusters of foreigners of lower income and educational status, especially given the prevailing economic conditions, has led to some heightening of social tensions and at times to intergroup violence.

The other developed countries of large-scale international migration—Australia, Canada, New Zealand and the United States of America—have had comparatively little experience with temporary labour migration. New Zealand has had some guest workers from the islands of the Pacific and the United States has a substantial inflow of undocumented migrants, chiefly Mexico, Colombia and other countries of Central America and the Caribbean, which bears a strong functional resemblance to temporary labour migration. However, the predominant pattern has been of immigration for the purpose of long-term resettlement.

International migration has had a marked impact on the populations of each of the four countries. In Australia about 20 per cent of the population is foreign born. In Canada and New Zealand around 15 per cent and in the United States about 5 per cent. The United States is estimated to have a net legal immigration of about 350,000 annually, Canada somewhat less than 100,000, Australia 60,000 and New Zealand just over 15,000.

Traditionally, these countries have drawn most of their immigrants from Europe. Beginning somewhere in the 1960s, there was a significant shift in the origin of immigrants and each began to receive increasing proportions from countries of Africa, Asia and Latin America. As a matter of policy, each of the countries has moved away from giving preference to immigrants of European origin. All receive substantially less than 50 per cent of their immigrants from Europe—between some 40 per cent in Australia and 18 per cent in the United States.

Undocumented migration has been a matter of policy concern in all of the countries. Canada and Australia have tried amnesties to regularize the status of long-term undocumented immigrants, with somewhat limited success. In the United States, where undocumented migrants are thought to comprise some 2-3 per cent of the total population, a variety of proposals are actively under discussion.

Each of the four countries has to some extent been a beneficiary of the inflow of highly trained migrants—the so-called "brain drain". Prevailing economic conditions and internal policy considerations may, however, be reducing the inflow. In the United States, for example, newly enacted regulations will make it substantially more difficult for foreign medical graduates to enter the country and practise. In Canada, there has been a reduction in the total number of persons admitted on the basis of their occupational skills.

Urban and rural growth

The period of rapid urban and large-city growth in developed regions appears to be nearing an end. Countries that have achieved higher urban proportions are now urbanizing less rapidly, on average, than countries with lower urban proportions. For example, the 11 developed countries that were initially more than 75 per cent urban had an average intercensal growth rate of urban areas for the most recent period that exceeded that of rural one by 1.98 per cent. In contrast, 99 countries, both developing and developed, that were less than 75 per cent urban had an average urban-rural growth difference of 3.6 per cent. This cessation of rapid urban growth in developed countries is to be expected in view of the relative depletion of populations in rural areas that provide the pool of potential rural-urban migrants.

In countries constituting the more developed regions, urban areas grew at an annual rate of 1.75 per cent between 1970 and 1975, while rural areas declined at a rate of 0.75 per cent. Urban growth was fastest in Southern Europe (2.36 per cent) and slowest in Northern and Western Europe (1.00 per cent). Rural populations showed much the same tendency for slow decline in all major subregions of the more developed bloc. In 1975, the more developed regions were 67.5 per cent urban.

A recent study in the Population Division of the United Nations Secretariat has examined the most recent patterns of intercensal growth rates among cities with more than 100,000 inhabitants at the initial census. In the more developed regions there were 792 such cities. These cities exhibited a fairly clear-cut inverse relationship between city size and city growth rates. Among cities in the 100,000-250,000 range, the average intercensal growth rate was 2.23 per cent. The largest cities, those with a population of over 4 million, had an average growth rate of only 1.56 per cent. On the other hand, the small cities showed much more variability in their growth rates than did the large cities, the standard deviation of growth rates being 2.04 per cent for the smaller cities and 0.99 per cent for the largest. This relationship would appear to reflect a greater inertia in the growth rates of the larger cities, which, because of their more diversified industrial base, are better cushioned against the sudden growth or decline associated with the fortunes of a particular industry.

A relatively slow growth of very large cities has been noted recently in Japan, Sweden, Norway, the Federal Republic of Germany, Italy, the United States of America and elsewhere in the more developed countries. This "turn-about" has been attributed to many factors. Continued improvements in transportation and communication may have reduced the economies of very densely populated urban centres (while the much poorer transport systems of less developed regions offer continued incentives for people to conglomerate in areas where they have more opportunity for face-to-face interaction); an increase in government transfer payments as a fraction of the national product may have allowed larger proportions of the population to settle in smaller areas without economic sacrifice; economic recession may have inhibited the formation of new firms, which tend to establish themselves to a disproportionate degree in large cities; a high income elasticity of demand for outdoor recreational opportunities may have led increasing numbers to settle outside the metropolis; and in some places governmental deconcentration policies may have contributed to the trend. Sorting out these and other influences will prove very difficult, and can scarcely begin

until the 1980 round of censuses provides more data on the types of cities involved in the turn-about and on its breadth and continuity.

POPULATION POLICIES

A brief account follows of current population policies adopted by countries in the more developed regions. It is limited to a broad discussion of some recent policy issues and provides examples from the replies of a number of countries to the Fourth Population Inquiry among Governments, which was conducted in 1978. A series of tables is annexed, indicating the perceptions and major policies of the Governments of all countries in the more developed regions.¹

Population growth

Many of the developed countries have low rates of population growth and a number have almost reached the point at which their populations will cease to grow. Although a number of countries have expressed concern about the long-term implications of the current trend—the high social costs incurred by aging populations, the potential effects of a loss of demographic dynamism etc.—the majority (28) of the developed countries consider their current rate of population growth to be satisfactory, a perception which, for some countries, reflects a belief that there is no need to intervene in the demographic process and, for others, reflects satisfaction with the results of previous government policies. Thirteen countries wish to achieve a higher rate and only one country would like to achieve a lower rate.

Of the developed countries that replied to the Fourth Population Inquiry, several indicated that they had set quantitative targets. This was so for the majority of the centrally planned economies in Eastern Europe. In Western Europe, France reported that its target since 1975 had been to attain a level of fertility that would assure replacement and, if possible, modest growth. Finland went even further and identified quantitative targets for each of its countries in 1975/76; the targets were designed essentially to prevent a decline in population in any of the countries. Greece also reported that it had identified a target that would ensure a population growth rate only slightly below 1 per cent per annum, although it noted that, as a result of the return flow of migrant labour, it had to all intents and purposes achieved its goal. Although only a few of the developed countries have formally established quantitative targets, many of them do have implicit targets; in other words, it has been clearly stated in various official statements and economic plans that the Government intends to maintain a level of fertility around replacement or slightly above. For example, in its reply to the Inquiry the Netherlands reported that its goal was to achieve a stationary population, while Japan reported that a stationary population was "estimated and expected".

In addition to the tendency for a number of the developed countries to have more or less implicit targets, some

¹ In the present discussion of population policies, Turkey—a member of the Economic Commission for Europe—has been included among the developed countries, bringing the total number of developed countries under discussion to 40.

countries are adopting a policy of what might be termed "watchful waiting". Faced with uncertainty about the long-term effects of the present trend, several countries have indicated that they may change their policy at some future date. Finland reported, for example, that, as a result of a slight upturn in fertility, its problem of low population growth had become less pronounced; the Government considered its rate of natural increase to be satisfactory, although it noted that in the long-term the net reproduction rate would have to be increased. The Netherlands adopted a similar stance, noting that since fertility in the Netherlands was currently below replacement level, the Government's goal of achieving a stationary population would eventually involve increasing fertility. Although it had adopted a policy of non-intervention for the coming decade, the Government emphasized that it was carefully studying the implications of the trend and was prepared to intervene at a future date. Canada, a country in which international migration, rather than natural increase, has been the most important determinant of population growth, adopted an even more flexible position; the Government noted that the object of its policy was to increase, maintain or decrease the rate, depending on an annual assessment of the acceptability of the current rate of growth.

Fertility

With the exception of a number of Eastern European countries, fertility has continued to decline in most of the countries in the more developed regions, and in a number of countries it has fallen below replacement level. The majority (31) of the developed countries, however, report that their current level of fertility is satisfactory. Only one country, Turkey, considers that it is too high, while eight countries consider that it is too low. Among the countries that would like to achieve a higher rate are several very small countries in Western Europe: Monaco, Liechtenstein and Luxembourg. The remaining countries are France, the Federal Republic of Germany, the German Democratic Republic, Greece and Bulgaria.

Although a number of countries in the more developed regions have similar programmes with respect to fertility (i.e., they provide family planning services, family allowances, maternity benefits and so on), the objectives of these policies may differ. Two of the larger countries in Western Europe, which consider that their present level of fertility is too low, have emphasized that they are offering no specific incentives to raise the rate. France is concerned not only with maintaining replacement level fertility but also with avoiding excessive fluctuations in the rate. However, in its reply to the Fourth Population Inquiry, the Government emphasized that it would attempt to attain its objectives through broad social policies. The Federal Republic of Germany noted similarly that it had adopted no measures that were explicitly designed to raise fertility, which, it noted, would be achieved by "continuous efforts to improve social policies with respect to the family and children". As mentioned above in the discussion of population growth, a number of countries have not precluded the possibility of greater intervention at some future date, should fertility fall to some unreasonably low level.

On the other hand, several countries in the more developed regions are actively pro-natalist. These include a number of countries that consider the present rate to be satisfactory and are concerned with maintaining the trend, as well as the German Democratic Republic, which considers

the present rate to be deficient. A number of these countries have implemented family allowance schemes, which are designed to stimulate the birth rate through the provision of material incentives. Centrally planned countries in Eastern Europe, such as Czechoslovakia and Hungary, have had long-standing programmes of subsidies, family allowances, maternity benefits and so on, which are aimed at facilitating the dual role of women as workers and mothers. The German Democratic Republic is one country that has placed increasing emphasis on such incentives. In its reply to the Fourth Population Inquiry, the Government reported that had it implemented a number of measures during the period 1972-1975 (extension of paid pregnancy and maternity leave etc.), the effects of which had been measurable since early in 1977 (there had been a 26 per cent increase in second children and around a 20 per cent increase in third children).

Of course, such family allowance policies, liberal maternity benefits etc. may be designed to improve social justice rather than to attain specific demographic objectives. Finland, for example, does not have an official fertility policy, although it extended maternity leave in 1975 and again in 1978 and expects to extend it still further.

The same may be said of contraception, for a majority of the developed countries provide services as a public health measure and as a human right, regardless of whether the Government desires to maintain or to increase fertility. At present, 27 countries in the more developed regions have programmes directly supported by the Government, six countries have programmes that receive indirect support and three provide limited support. Spain recently relaxed its opposition to family planning programmes and at present only four countries—Greece, the Holy See, Ireland and Malta—restrict access to modern methods of birth control.

Mortality

The majority (30) of the countries in the more developed regions consider their level of mortality—as measured by the average expectation of life at birth—to be acceptable, although 10 countries, including seven that have an average life expectancy of more than 70 years, consider it to be unacceptable. While a few of the countries that replied to the Fourth Population Inquiry reported a recent decline in some areas of mortality (the Federal Republic of Germany, for example, reported a significant decline in infant mortality since around 1974), a number of countries with a high life expectancy reported dissatisfaction with the present trend. Finland and France, for example, identified excess mortality among adult males as an area of continuing concern, while the United Kingdom reported unsatisfactory progress in several areas.

Of the developed countries that replied to the Inquiry, few reported having any quantitative targets for the reduction of morbidity and mortality. Greece announced that it had a target for the reduction of infant mortality, Hungary had targets for infant mortality and mortality among middle-aged males, and Romania identified various cause-specific targets. In line with the recommendations of the World Population Plan of Action, a number of the developed countries identified the level of mortality they considered it would be feasible to achieve by 1985. However, some countries with very low mortality declined to identify a level, since they expected a rather small decline, unless a major medical breakthrough took place. The Federal Re-

public of Germany, for example, reported that it could not identify a future level without further geriatric research.

With respect to morbidity and mortality policies, some developed countries with a very high life expectancy—such as Finland, France and the United Kingdom—share a number of similar concerns: reducing the incidence of cardiovascular diseases and vehicular accidents, waging campaigns against the effects of excessive alcohol consumption and smoking etc. Although most of the more developed countries have low infant and child mortality, a number of countries place an emphasis on reducing it still further. Denmark has enacted legislation requiring the examination of all expectant mothers and children; the Federal Republic of Germany approved legislation in 1974 requiring prenatal examinations and periodic examinations of children. A major area of growing concern is preventive health. The Federal Republic of Germany reported that it issued periodic pamphlets, while the United Kingdom reported that it had been focusing increasing attention on prevention since 1976 (when it published a white paper on prevention and health).

One interesting point that emerges from the replies to the Fourth Population Inquiry is that the developed countries appear to consider differential mortality to be as much of a priority area as do the developing countries. A number of countries are concerned with reducing sex differentials. France reported that, while the level of female mortality was acceptable, that of males was unacceptable, and Finland stated that it had initiated a special project to reduce the mortality of males over 45 years. Although a number of countries, such as France and Greece, reported that regional mortality differentials had tended to decrease along with the decline in general mortality, many of the developed countries considered regional differentials to be an area for continuing concern and were implementing a variety of programmes, each reflecting the needs of the individual country: the Federal Republic of Germany announced that it was attempting to reduce regional differentials through the establishment of regional health service offices; Greece was expanding the rural medical centres and the use of helicopters; the Netherlands was constructing hospitals and providing subsidies to home care services in rural areas; Romania was setting up medical dispensaries in each community; Spain was extending social security to the countryside; Sweden had a network of district doctors and nurses who visited patients in their homes; and Japan used public health nurses and mobile medical units etc.

Spatial distribution and internal migration

In their replies to the Fourth Population Inquiry, a number of countries reported a changing trend that corresponded to changes in the economic situation as a whole. Japan, for example, reported that, while its economy was changing towards a slow growth pattern, its pattern of internal migration was also changing—from concentration in the metropolitan areas to local core urban centres—and the number of out-migrants from small cities and rural areas was decreasing. France observed that the steady loss of population from its western departments had ceased and that cities in the 100,000 to 200,000 range were growing faster than the larger metropolitan centres. Finland similarly observed that, since 1974, internal migration had decreased considerably as a result of the economic slow-down and decreasing demand for labour.

Nevertheless, although there have been changes in the trend, most countries in the more developed regions consider that the present distribution of population is unacceptable to some degree and have adopted policies of intervention. In most countries the purpose of population distribution policies is to raise the economic level in the less populated areas and to reduce congestion in the urbanized areas. To that end, a number of the countries which replied to the Fourth Population Inquiry—Canada, Finland, Greece, Ireland, the Netherlands, Switzerland, and Japan—reported that they had adopted policies to reduce the rate of growth of the metropolitan region.

Since the countries in the more developed regions have complex economies, redistribution policies are usually quite complex too. In many instances, population redistribution measures are auxiliary instruments of national and regional planning. Measures include incentives and subsidies of one sort or another, which are intended to overcome the perceived economic disadvantages of certain areas; they may also include the subsidized provision of infrastructure, the relocation of government agencies and so on. Among the developed countries replying to the Fourth Population Inquiry, Canada reported that it intended to reduce the rate of growth of the metropolitan centre through regional industrial incentives; Finland was stabilizing out-migration from rural areas by providing new investment and employment through special loans, the decentralization of central government institutions and the relocation of industry; Switzerland was improving the infrastructure in less developed areas; and New Zealand was decentralizing the components of government departments and providing incentives to set up development projects in certain areas etc.

Of course, intervention in the population redistribution process is of longer standing in the centrally planned economies. Although some measures may be similar to those adopted by the developed market economies, the centrally planned countries have tended to offer a greater range of incentive measures directed towards individuals. For example, in its reply to the Fourth Population Inquiry, the Government of the German Democratic Republic reported that it intended to channel graduates from universities and technical schools to certain areas and to interest young skilled workers in changing their place of work. It noted that the process of regional redistribution of labour was “effectively promoted by providing more housing . . . and further improving working and living conditions”.

Immigration

The situation with respect to international migration has changed considerably since 1973, when, as a result of the economic slow-down in the developed market economies, many countries that had previously accepted immigrant labour stopped active recruitment and entered upon a stage of consolidation. As a result, there have been a number of changes in this area since around 1974. With respect to immigration, a majority of the developed countries report that the present level—which in most instances consists of a small flow—is satisfactory, and these countries desire to maintain immigration at its current level. The Federal Republic of Germany, for example, reports that the present requirements of the labour market call for a continuation of a “consolidation policy” with respect to migrant labour. Such a policy consists largely of further efforts at integrating migrants who presently reside in the Federal Republic.

lie—such measures as improved residence permit regulations etc. The Netherlands has reported similarly that the immigration of foreign labour has been of minor importance in recent years and that immigration occurs chiefly for the purpose of family reunification.

Switzerland was one of the developed countries replying to the Fourth Population Inquiry that expressed a desire to accelerate the reverse flow of migrant labour. Although no official policies have been formulated as yet, France is negotiating bilateral accords with a number of sending countries for the return of foreign workers. The United Kingdom is another country where, although there have been no recent policy changes, there has been much debate, and a number of public officials are advocating stricter controls on the admission of immigrants.

Two of the countries replying to the Fourth Population Inquiry that had previously had rather open immigration policies showed signs of change. Canada reported that its immigration policy had evolved from an emphasis on absorptive capacity to economic development needs and more recently to humanitarian considerations such as family reunification and the acceptance of refugees; since 1976 its immigration policy had provided for the determination of annual quotas: the flow might be increased, maintained or decreased each year, depending on economic conditions. So, too, the Government of New Zealand noted that its current policy was to maintain its rather moderate level of immigration rather than to increase the flow. It reported that "migration is currently limited to specified occupational groups whose skills are in demand and to humanitarian cases such as refugees and family reunification. This is a reflection of the current economic situation in New Zealand and the consequent level of unemployment among citizens and permanent residents." Clearly, there has been a growing tendency among the developed countries to consider international migration in the light of prevailing economic conditions and, in many instances, this has led to an outward flow of migrant labour which may accelerate in coming years.

Emigration

With respect to emigration, again, the situation has changed considerably since around 1974, with the exhaustion of many of the previous opportunities for migrant labour. Many countries that had previously supplied large numbers of migrant labourers are now faced with reabsorbing returning migrants, a movement that may accelerate as France and other countries conclude bilateral accords.

Of the countries replying to the Fourth Population Inquiry, which have traditionally been emigration countries, several reported that they had formulated explicit policies to reduce the flow of emigrants. Greece, for example, reported that it had a policy of decreasing emigration, although, as a result of the reversal of the migration flow, its goal of reducing emigration had essentially been met. Spain reported that its present employment policy was designed largely to reduce emigration, although it was largely conceived as a social policy rather than one with demographic objectives. Ireland similarly reported that it

wished to end involuntary emigration through the provision of increased employment opportunities. One country that expressed a particular desire to decrease the out-migration of its citizens was Finland. Reporting that in 1975-1977 the balance of international migration had again been negative, it noted that "the strong emigration from Finland is of great concern for the authorities. It is a considerable economic loss to Finland and also has long-term demographic repercussions." As a remedial effort, the Government is considering measures to increase the use of labour exchange services in order to decrease emigration caused by unemployment.

Few developed countries have adopted explicit policies to encourage the emigration of their citizens. One of these is the Netherlands, which has low fertility and a low rate of population growth but is nevertheless densely populated. The Government reported that for demographic as well as socio-economic considerations, it was pursuing an active emigration policy. It noted that "measures are taken to facilitate the movement of nationals who, on their own accord, have decided to settle in another country". Among these measures are the provision of financial assistance toward transportation costs and follow-up services by representatives of the Netherlands in the receiving countries.

Population structure

Most countries in the more developed regions are faced with the phenomenon of aging populations. France, for example, reported in its reply to the Fourth Population Inquiry that, if the present trend continued, the aging of the population would involve high social costs and would necessitate a major restructuring of government programmes. A number of countries are conducting ongoing research into the social consequences of this aging process. Czechoslovakia reported that it was continuously monitoring changes in the age structure of the population and that it took the effects of such changes into consideration in its economic planning. The Netherlands reported that it was conducting research and collecting special statistics on the aged population (with respect to housing etc.). The United States of America announced that it had established a national institute on the aging, while the United Kingdom reported that it intended to publish a white paper on the subject of aging in 1978. A major focus of government programmes, whether in the centrally planned or the developed market economies, is on improved pension and social security legislation, and on better medical and preventive health care programmes. Romania reported, for example, that it had approved new pension legislation in 1977. The United Kingdom reported that it had sought to maintain the value of pensions in real terms, while the United States of America reported that it was undertaking a revision of its social security system in order to ensure adequate coverage of the aged population. A number of European countries reported efforts to provide improved social services to aged persons. The Federal Republic of Germany and the Netherlands emphasized that in their countries such programmes would attempt to help aged persons preserve their independence.

ANNEX

TABLE I. GOVERNMENTS' PERCEPTIONS OF THE CONSEQUENCES OF
CURRENT RATES OF NATURAL INCREASE

<i>Countries</i>	<i>Higher rate desirable</i>	<i>Current rate satisfactory</i>	<i>Lower rate desirable</i>	<i>Total</i>
Albania		X		
Australia		X		
Austria		X		
Belgium		X		
Bulgaria	X			
Byelorussian Soviet Socialist Republic	X			
Canada		X		
Czechoslovakia		X		
Denmark		X		
Finland		X		
France	X			
German Democratic Republic	X			
Germany, Federal Republic of	X			
Greece		X		
Holy See	X			
Hungary		X		
Iceland		X		
Ireland		X		
Italy		X		
Japan		X		
Liechtenstein	X			
Luxembourg	X			
Malta		X		
Monaco	X			
Netherlands		X		
New Zealand		X		
Norway		X		
Poland		X		
Portugal		X		
Romania		X		
San Marino		X		
Spain		X		
Sweden		X		
Switzerland		X		
Turkey			X	
Ukrainian Soviet Socialist Republic	X			
Union of Soviet Socialist Republics	X			
United Kingdom of Great Britain and Northern Ireland		X		
United States of America		X		
Yugoslavia		X		
TOTAL	11	28	1	40

TABLE 2. GOVERNMENTS' PERCEPTIONS OF CURRENT LEVELS OF FERTILITY

Countries	Rate unsatisfactory: too low	Rate satisfactory	Rate unsatisfactory: too high	Total
Albania		X		
Australia		X		
Austria		X		
Belgium		X		
Bulgaria	X			
Byelorussian Soviet Socialist Republic		X		
Canada		X		
Czechoslovakia		X		
Denmark		X		
Finland		X		
France	X			
German Democratic Republic	X			
Germany, Federal Republic of	X			
Greece	X			
Holy See		X		
Hungary		X		
Iceland		X		
Ireland		X		
Italy		X		
Japan		X		
Liechtenstein	X			
Luxembourg	X			
Malta		X		
Monaco	X			
Netherlands		X		
New Zealand		X		
Norway		X		
Poland		X		
Portugal		X		
Romania		X		
San Marino		X		
Spain		X		
Sweden		X		
Switzerland		X		
Turkey			X	
Ukrainian Soviet Socialist Republic		X		
Union of Soviet Socialist Republic		X		
United Kingdom of Great Britain and Northern Ireland		X		
United States of America		X		
Yugoslavia		X		
TOTAL	8	31	1	40

TABLE 3. GOVERNMENTS' POLICIES RELATING TO MEASURES OF ENCOURAGEMENT
OR DISCUSSION WITH A VIEW TO MODIFYING FERTILITY

Countries	Measures of encouragement or dissuasion			No measures of encouragement	Total
	To increase fertility	To maintain fertility	To decrease fertility		
Albania		x			
Australia				x	
Austria				x	
Belgium				x	
Bulgaria	x				
Byelorussian Soviet Socialist Republic		x			
Canada				x	
Czechoslovakia		x			
Denmark				x	
Finland		x			
France	x				
German Democratic Republic	x				
Germany, Federal Republic of				x	
Greece	x				
Holy See				x	
Hungary		x			
Iceland				x	
Ireland		x			
Italy				x	
Japan				x	
Liechtenstein	x				
Luxembourg	x				
Malta				x	
Monaco	x				
Netherlands				x	
New Zealand				x	
Norway				x	
Poland		x			
Portugal				x	
Romania		x			
San Marino				x	
Spain				x	
Sweden				x	
Switzerland				x	
Turkey			x		
Ukrainian Soviet Socialist Republic		x			
Union of Soviet Socialist Republics		x			
United Kingdom of Great Britain and Northern Ireland				x	
United States of America				x	
Yugoslavia		x			
TOTAL	7	11	1	21	40

TABLE 4. GOVERNMENTS' POLICIES RELATING TO ACCESS TO MODERN METHODS OF BIRTH CONTROL

Countries	Unlimited access			Total	
	Limited access	Not supported by Government	Indirectly supported by Government		Directly supported by Government
Albania				X	
Australia			X		
Austria				X	
Belgium			X		
Bulgaria				X	
Byelorussian Soviet Socialist Republic				X	
Canada				X	
Czechoslovakia				X	
Denmark				X	
Finland				X	
France				X	
German Democratic Republic				X	
Germany, Federal Republic of			X		
Greece	X				
Holy See	X				
Hungary				X	
Iceland				X	
Ireland	X				
Italy				X	
Japan				X	
Liechtenstein		X			
Luxembourg			X		
Malta	X				
Monaco				X	
Netherlands			X		
New Zealand				X	
Norway				X	
Poland				X	
Portugal				X	
Romania				X	
San Marino		X			
Spain		X			
Sweden				X	
Switzerland			X		
Turkey				X	
Ukrainian Soviet Socialist Republic				X	
Union of Soviet Socialist Republics				X	
United Kingdom of Great Britain and Northern Ireland				X	
United States of America				X	
Yugoslavia				X	
TOTAL	4	3	6	27	40

TABLE 5. GOVERNMENTS' PERCEPTIONS OF CURRENT LEVELS OF AVERAGE EXPECTATION OF LIFE AT BIRTH AND THEIR ACCEPTABILITY IN THE LIGHT OF CURRENT ECONOMIC AND SOCIAL CONDITIONS

Countries	Levels of expectation of life at birth							Total
	70 years and over		62 ^a -69 years		50-61 years		50 years and under	
	Acceptable	Unacceptable	Acceptable	Unacceptable	Acceptable	Unacceptable	Unacceptable	
Albania				x				
Australia	x							
Austria	x							
Belgium	x							
Bulgaria	x							
Byelorussian Soviet Socialist Republic		x						
Canada	x							
Czechoslovakia			x					
Denmark	x							
Finland		x						
France		x						
German Democratic Republic	x							
Germany, Federal Republic of	x							
Greece	x							
Holy See	x							
Hungary			x					
Iceland	x							
Ireland	x							
Italy		x						
Japan	x							
Liechtenstein	x							
Luxembourg	x							
Malta	x							
Monaco	x							
Netherlands	x							
New Zealand	x							
Norway	x							
Poland	x							
Portugal			x					
Romania			x					
San Marino	x							
Spain	x							
Sweden	x							
Switzerland	x							
Turkey						x		
Ukrainian Soviet Socialist Republic		x						
Union of Soviet Socialist Republics		x						
United Kingdom of Great Britain and Northern Ireland		x						
United States of America	x							
Yugoslavia				x				
TOTAL	26	,	4	2	—	1	—	40

^a A life expectancy at birth of 62 years corresponds to the average expectation of life by 1985 for the world as a whole, referred to in paragraph 22 of the World Population Plan of Action. The other categories in this table were chosen by reference to that figure.

TABLE 6. GOVERNMENTS' PERCEPTIONS OF THE DEGREE TO WHICH THE SPATIAL DISTRIBUTION OF THE POPULATION IS SATISFACTORY

Countries	Degree to which spatial distribution is satisfactory			Total
	Acceptable	Unacceptable to some degree	Largely unacceptable	
Albania		X		
Australia			X	
Austria		X		
Belgium	X			
Bulgaria		X		
Byelorussian Soviet Socialist Republic		X		
Canada		X		
Czechoslovakia		X		
Denmark	X			
Finland		X		
France		X		
German Democratic Republic	X			
Germany, Federal Republic of		X		
Greece		X		
Holy See	X			
Hungary	X			
Iceland		X		
Ireland		X		
Italy		X		
Japan			X	
Liechtenstein	X			
Luxembourg	X			
Malta	X			
Monaco	X			
Netherlands		X		
New Zealand	X			
Norway		X		
Poland		X		
Portugal		X		
Romania		X		
San Marino	X			
Spain		X		
Sweden	X			
Switzerland		X		
Turkey			X	
Ukrainian Soviet Socialist Republic		X		
Union of Soviet Socialist Republics		X		
United Kingdom of Great Britain and Northern Ireland		X		
United States of America	X			
Yugoslavia		X		
TOTAL	13	24	3	40

TABLE 7. GOVERNMENTS' POLICIES REGARDING THE SPATIAL DISTRIBUTION AND INTERNAL MIGRATION OF THE POPULATION

Countries	Governments' policies regarding the trend in internal migration from rural areas and small urban centres to the larger urban areas and the metropolitan region											Total
	To maintain migration			To reduce migration			To reverse the flow of migration					
	To accelerate migration and to change both urban and rural configuration	Without changing either urban or rural configuration	And to change rural configuration	Without changing either urban or rural configuration	Add to change		Without changing either urban or rural configuration	Add to change				
					Rural configuration	Urban configuration		Both urban and rural configuration	Rural configuration	Urban configuration	Both urban and rural configuration	
Albania								X				
Australia											X	
Austria				X								
Belgium		X										
Bulgaria						X						
Byelorussian Soviet Socialist Republic								X				
Canada		X										
Czechoslovakia						X						
Denmark		X										
Finland						X						
France											X	
German Democratic Republic						X						
Germany, Federal Republic of				X								
Greece						X						
Holy See		X										
Hungary						X						
Iceland									X			
Ireland						X						
Italy				X								
Japan								X				
Liechtenstein		X										
Luxembourg		X										
Malta		X										
Monaco		X										
Netherlands									X			
New Zealand		X										
Norway				X								
Poland						X						
Portugal						X						
Romania						X						
San Marino		X										
Spain								X				
Sweden						X						
Switzerland									X			
Turkey								X				
Ukrainian Soviet Socialist Republic						X						
Union of Soviet Socialist Republics								X				
United Kingdom of Great Britain and Northern Ireland											X	
United States of America		X										
Yugoslavia						X						
TOTAL	—	11	—	4	—	13	6	3	—	3	—	40

TABLE 8. GOVERNMENTS' PERCEPTIONS OF THE DEMOGRAPHIC SIGNIFICANCE OF IMMIGRATION AND THE ACCEPTABILITY OF CURRENT LEVELS

Countries	Governments that consider immigration to be					Total
	Demographically significant		Demographically insignificant			
	Unsatisfactory: too low	Satisfactory	Unsatisfactory: too high	More immigration desirable	Satisfactory	
Albania					X	
Australia	X					
Austria		X				
Belgium					X	
Bulgaria					X	
Byelorussian Soviet Socialist Republic					X	
Canada		X				
Czechoslovakia					X	
Denmark					X	
Finland					X	
France			X			
German Democratic Republic					X	
Germany, Federal Republic of		X				
Greece					X	
Holy See					X	
Hungary					X	
Iceland					X	
Ireland					X	
Italy					X	
Japan					X	
Liechtenstein		X				
Luxembourg		X				
Malta					X	
Monaco		X				
Netherlands					X	
New Zealand					X	
Norway		X				
Poland					X	
Portugal					X	
Romania					X	
San Marino			X			
Spain					X	
Sweden		X				
Switzerland		X				
Turkey					X	
Ukrainian Soviet Socialist Republic					X	
Union of Soviet Socialist Republics					X	
United Kingdom of Great Britain and Northern Ireland		X				
United States of America		X				
Yugoslavia					X	
TOTAL	1	11	2	—	26	40

TABLE 9. GOVERNMENTS' PERCEPTIONS OF THE DEMOGRAPHIC SIGNIFICANCE OF IMMIGRATION AND THE ACCEPTABILITY OF CURRENT LEVELS

Countries	Governments that consider immigration to be					Total
	Demographically significant		Demographically insignificant			
	Unsatisfactory: too low	Satisfactory	Unsatisfactory: too high	More emigration desirable	Satisfactory	
Albania					X	
Australia					X	
Austria					X	
Belgium					X	
Bulgaria					X	
Byelorussian Soviet Socialist Republic					X	
Canada					X	
Czechoslovakia					X	
Denmark					X	
Finland			X			
France					X	
German Democratic Republic					X	
Germany, Federal Republic of					X	
Greece			X			
Holy See					X	
Hungary					X	
Iceland					X	
Ireland			X			
Italy			X			
Japan					X	
Liechtenstein					X	
Luxembourg					X	
Malta		X				
Monaco					X	
Netherlands	X					
New Zealand			X			
Norway					X	
Poland					X	
Portugal	X					
Romania					X	
San Marino					X	
Spain			X			
Sweden					X	
Switzerland					X	
Turkey	X					
Ukrainian Soviet Socialist Republic					X	
Union of Soviet Socialist Republics					X	
United Kingdom of Great Britain and Northern Ireland					X	
United States of America					X	
Yugoslavia			X			
TOTAL	3	1	7	—	29	40

TABLE 10. TOTAL POPULATION AND GROWTH RATES FOR COUNTRIES IN MORE DEVELOPED REGIONS, 1960-2000

Region and country	Total population (thousands)				Rates of growth			
	1960	1975	1980	2000	1960- 1965	1970- 1975	1975- 1980	1995- 2000
<i>Northern America</i>								
Canada	17 870	22 727	24 073	29 028	1.09	1.30	1.15	0.73
United States of America	180 671	213 540	222 159	260 378	1.45	0.83	0.79	0.59
<i>Eastern Europe</i>								
Bulgaria	7 867	8 722	9 007	9 698	0.83	0.48	0.64	0.29
Czechoslovakia	13 654	14 802	15 336	17 196	0.72	0.60	0.71	0.61
German Democratic Republic	17 240	16 850	16 864	16 748	-0.26	0.60	0.02	-0.05
Hungary	9 984	10 541	10 761	11 259	0.33	-0.26	0.41	0.26
Poland	29 561	34 022	35 805	41 217	1.26	0.36	1.02	0.54
Romania	18 407	21 245	22 268	25 728	0.67	0.82	0.94	0.68
<i>Northern Europe</i>								
Denmark	4 581	5 060	5 101	5 297	0.76	0.52	0.16	0.25
Finland	4 430	4 711	4 828	5 137	0.60	0.45	0.49	0.26
Iceland	176	218	231	278	1.74	1.33	1.12	0.86
Ireland	2 834	3 127	3 307	4 009	0.29	1.14	1.12	0.88
Norway	3 581	4 007	4 075	4 405	0.78	0.66	0.33	0.43
Sweden	7 480	8 193	8 252	8 510	0.67	0.37	0.15	0.28
United Kingdom of Great Britain and Northern Ireland	52 559	56 035	55 888	56 674	0.73	0.20	-0.05	0.15
<i>Southern Europe</i>								
Albania	1 607	2 424	2 734	3 912	2.98	2.53	2.41	1.57
Greece	8 327	9 047	9 317	10 371	0.53	0.57	0.59	0.49
Italy	50 223	55 830	56 960	61 016	0.67	0.83	0.40	0.32
Malta	329	328	340	387	-0.58	0.14	0.72	0.53
Portugal	9 037	9 426	9 894	11 506	0.20	0.83	0.97	0.64
Spain	30 303	35 596	37 378	43 362	1.04	1.05	0.98	0.64
Yugoslavia	18 402	21 352	22 329	25 608	1.09	0.94	0.89	0.58
<i>Western Europe</i>								
Austria	7 048	7 520	7 481	7 612	0.58	0.25	-0.10	0.23
Belgium	9 153	9 796	9 920	10 762	0.67	0.33	0.25	0.47
France	45 684	52 707	53 445	57 117	1.30	0.79	0.28	0.35
Germany, Federal Republic of	55 433	61 832	61 135	59 822	1.25	0.36	-0.23	0.09
Luxembourg	314	357	358	361	1.11	1.03	0.02	0.13
Netherlands	11 480	13 664	14 078	15 505	1.35	0.95	0.60	0.50
Switzerland	5 362	6 405	6 310	6 438	2.06	0.44	-0.30	0.21
Union of Soviet Socialist Republics	214 334	254 393	266 666	311 817	1.49	0.84	0.94	0.64
Japan	94 096	111 524	119 888	129 859	0.99	1.33	0.84	0.51
<i>Australia and New Zealand</i>								
Australia	10 315	13 627	14 487	17 762	1.97	1.64	1.22	0.93
New Zealand	2 372	3 087	3 628	4 028	2.05	1.81	1.14	0.92

Source: "Provisional demographic estimates and projections as assessed in 1978 (medium variant)" (document prepared by the Population Division of the United Nations Secretariat).

TABLE 11. FERTILITY MEASURES FOR COUNTRIES IN MORE DEVELOPED REGIONS, 1960-1977

Region and country	Crude birth rates					Gross reproduction rates				
	1960-1964	1970-1974	1975	1976	1977	1960	1965	1970	1975	1976
<i>Northern America</i>										
Canada ^a	25.2	16.2	15.7	15.6	15.5	1.9	1.6	1.1	0.9	...
United States of America	22.4	16.2	14.8	14.8	15.3	1.8	1.4	1.2	0.9	...
<i>Eastern Europe</i>										
Bulgaria	16.9	16.2	16.6	16.5	16.1	1.1	1.0	1.1	1.1	...
Czechoslovakia	16.3	17.7	19.6	19.2	18.7	1.2	1.2	1.0	1.2	...
German Democratic Republic	17.3	12.1	10.8	11.6	13.3	1.2	1.2	1.1	0.8	0.8
Hungary	13.5	15.3	18.4	17.5	16.7	1.0	0.9	1.0	1.2	1.1
Poland	20.1	17.5	18.9	19.5	19.1	1.5	1.2	1.1	1.1	1.1
Romania	16.7	19.6	19.7	19.5	...	1.1	0.9	1.4	1.3	1.2
<i>Northern Europe</i>										
Denmark ^b	17.0	14.6	14.2	12.9	12.2	1.2	1.3	1.0	0.9	0.8
Finland	18.2	13.1	13.9	14.2	13.9	1.3	1.2	0.9	0.8	...
Ireland	21.8	22.4	21.5	21.6	21.4	1.9	2.0	1.9	1.7	...
Norway	17.3	16.0	14.1	13.3	12.5	1.4	1.4	1.2	1.0	0.9
Sweden	14.5	13.7	12.6	12.0	11.6	1.1	1.2	0.9	0.9	0.8
United Kingdom of Great Britain and Northern Ireland	18.2	14.9	12.5	12.1	11.8	1.3	1.4	1.2	0.9	0.8
<i>Southern Europe</i>										
Albania	40.1	32.9 ^c	...	...	...	3.2	2.6	2.4	...	...
Greece	18.1	16.0	15.7	16.0	15.4	1.1	1.1	1.2	1.1	1.1
Italy	18.7	16.3	14.8	14.0	13.2	1.2	1.3	1.1	1.1	...
Malta	22.5	17.1	18.3	18.0	18.0	1.7	1.2	1.0	1.0	...
Portugal ^d	24.0	20.0	19.0	19.2	...	1.5	1.5	1.4	1.3	...
Spain ^e	21.5	19.6	19.1	18.2	18.0	1.4	1.4	1.4	1.4 ^f	...
Yugoslavia	22.1	18.1	18.2	18.1	17.7	1.4	1.3	1.1	1.1	...
<i>Western Europe</i>										
Austria ^g	18.5	13.9	12.5	11.6	11.3	1.3	1.3	1.1	0.9	0.8
Belgium ^g	17.1	13.9	12.2	12.3	12.4	1.2	1.3	1.1	0.8	...
France	18.0	16.5	14.1	13.6	14.0	1.3	1.4	1.2	1.0 ^f	...
Germany, Federal Republic of	18.0	11.5	9.7	9.8	9.5	1.2	1.2	1.0	0.7	0.7
Luxembourg	16.0	12.0	11.2	11.0	11.4	1.1	1.2	1.0	0.8 ^f	...
Netherlands	20.9	16.0	13.0	12.9	12.5	1.5	1.5	1.3	0.8	0.8
Switzerland	18.5	14.4	12.2	11.7	11.5	1.2	1.2	1.0	0.8	0.8
<i>Union of Soviet Socialist Republics^h</i>										
USSR	23.6	17.7	18.1	18.4	18.2	1.4	1.2	1.2	1.2	...
<i>Japan</i>										
Japan	17.4	19.1	17.2	16.3	15.4	1.0	1.1	1.0	1.0	0.9
<i>Australia-New Zealand</i>										
Australia	21.8	19.7	16.9	16.4	16.1	1.7	1.4	1.4	1.1	...
New Zealand	25.9	21.3	18.4	17.8	...	2.1	1.7	1.5	1.2	...

^a Births including Canadian residents temporarily in the United States but excluding United States residents temporarily in Canada. Births in Newfoundland prorated to the distribution by age for Canada excluding Newfoundland.

^b Excluding the Faeroe Islands and Greenland.

^c For 1970-1971.

^d Crude birth rates for 1960-1974 have been calculated on the basis of the unofficially revised total *de jure* population.

^e Excluding Ceuta and Melilla.

^f For 1974.

^g Rates for 1961 to 1971 have been calculated on the basis of the unofficially revised total mid-year population estimates.

^h For 1960/61, 1966/67, 1969/70 and 1975/76, gross reproduction rates have been calculated on the basis of data taken from *Narodnoe Khoziaistvo SSSR, 1967, 1970 and 1976* (Moscow, Central Statistical Office, 1968, 1971 and 1977), pp. 38, 49 and 72, respectively.

TABLE 12. MORTALITY MEASURES FOR COUNTRIES IN MORE DEVELOPED REGIONS, 1960-1977

Region and country	Crude death rates					Life expectancy at birth			
	1960-1964	1970-1974	1975	1976	1977	1960-1965 ^a	1970	1975	1976
<i>Northern America</i>									
Canada	7.7	7.4	7.4	7.2	7.3	71.6	72.9	...	...
United States of America	9.5	9.3	8.9	8.9	8.8*	70.1	71.0	72.6	72.9
<i>Eastern Europe</i>									
Bulgaria	8.2	9.6	10.3	10.1	10.7*	69.8	71.2	...	...
Czechoslovakia	9.5	11.5	11.5	11.5	11.5*	70.3	69.6	70.4	70.4
German Democratic Republic ^b	13.3	13.8	14.3	13.9	13.4*	69.9	70.7	71.3	71.6
Hungary	10.1	11.8	12.4	12.5	12.4*	69.0	69.2	69.5	...
Poland	7.6	8.3	8.7	8.9	9.0*	68.6	70.3	70.6	...
Romania	8.6	9.4	9.3	9.6	9.6	67.3	68.6	69.7	...
<i>Northern Europe</i>									
Denmark ^c	9.7	10.0	10.1	10.6	9.9*	72.4	73.3	74.0	...
Finland	9.3	9.6	9.3	9.5	9.4*	68.9	70.0	71.7	...
Ireland ^d	11.8	11.2	10.6	10.5	10.5*	70.4	...	...	...
Norway	9.5	10.0	10.0	10.0	9.7*	73.5	74.3	74.9	...
Sweden	10.0	10.3	10.8	11.0	10.7*	73.6	74.8	74.9	75.0
United Kingdom of Great Britain and Northern Ireland	11.8	11.9	11.8	12.2	11.7*	71.1	72.0	72.7	...
<i>Southern Europe</i>									
Albania	9.8	8.1 ^e	...	...	...	63.6	68.5	...	...
Greece	7.8	8.5	8.9	8.9	8.9*	69.7	71.9	...	...
Italy	9.8	9.7	9.9	9.7*	9.6	69.8	68.9	...	...
Malta	8.7	9.1	8.8	9.0	8.9*	68.9	70.8	70.6	70.7
Portugal	10.8	11.0	10.4	10.5	...	64.3	68.2	...	...
Spain ^f	8.8	8.6	8.4*	8.0*	7.7*	69.6	72.3	...	...
Yugoslavia	9.4	8.8	8.7	8.5	8.4	64.3	67.7	...	...
<i>Western Europe</i>									
Austria	12.5	12.8	12.8	12.7	12.2*	69.4	69.9	71.3	71.6
Belgium	12.2	12.2	12.2	12.1	11.4*	70.9	...	...	...
France	11.2	10.6	10.6*	10.5	10.1*	71.1	72.4	...	...
Germany, Federal Republic of ^b	11.4	11.9	12.1	11.9	11.5	70.1	70.6	71.6	...
Luxembourg	11.9	12.1	12.2	12.6	11.5*	69.5	70.5	...	...
Netherlands	7.8	8.3	8.3	8.3	7.9*	73.4	73.6	...	...
Switzerland	9.5	9.1	8.7	9.0	8.7*	72.1	...	...	...
<i>Union of Soviet Socialist Republics</i>									
Republics	7.2	8.5	9.3	9.5	9.7	69.6	69.0	...	...
Japan	7.3	6.6	6.4	6.3	6.1*	69.1	72.0	74.4	74.8
<i>Australia-New Zealand</i>									
Australia ^d	8.7	8.7	7.9	8.1	7.7*	71.3	71.3	72.4	...
New Zealand ^d	8.9	8.5	8.1	8.2	...	71.2	71.6	...	...

Sources: World Health Organization data bank; various issues of the United Nations *Demographic Yearbook*; files of the Statistical Office of the United Nations Secretariat and estimates prepared by the Population Division of the United Nations Secretariat.

NOTE: Data are for countries that evaluate the completeness of their death registration at 90 per cent or above.

* Provisional.

^a Estimation by the Population Division of the United Nations Secretariat.

^b The data relative to the Federal Republic of Germany and the German Democratic Republic include the relevant data relating to Berlin for which separate data have not been supplied. This is without prejudice to any question of status which may be involved.

^c Excluding Faeroe Islands and Greenland.

^d Data tabulated by year of registration rather than occurrence.

^e For 1970-1971.

^f Excluding Ceuta and Melilla.

TABLE 13. URBAN POPULATION OF COUNTRIES IN MORE DEVELOPED REGIONS, 1960-2000

Region and country	Urban population (thousands)				Rate of growth				Percentage			
	1960	1975	1980	2000	1960- 1970	1970- 1975	1975- 1980	1990- 2000	1960	1975	1980	2000
<i>Northern America</i>												
Canada	12 340	17 789	19 695	27 292	2.72	1.88	2.04	1.40	68.90	78.02	80.14	86.33
United States of America	120 868	152 613	163 479	211 769	1.70	1.27	1.38	1.16	66.90	71.34	72.94	80.09
<i>Eastern Europe</i>												
Bulgaria	3 033	5 148	5 809	7 742	3.81	2.96	2.42	1.15	38.55	58.55	64.01	77.14
Czechoslovakia	6 410	8 749	9 590	12 502	2.10	2.02	1.84	1.19	46.95	59.14	62.89	74.43
<i>German Democratic Republic</i>												
Republic	12 456	12 879	13 232	14 915	0.10	0.48	0.54	0.61	72.25	75.20	76.81	83.18
Hungary	3 990	5 277	5 833	7 558	1.68	2.24	2.00	1.09	39.96	50.09	54.41	68.28
Poland	14 159	18 350	19 991	26 990	1.78	1.62	1.71	1.41	47.90	54.22	56.61	67.74
Romania	6 275	9 382	10 573	15 981	2.75	2.55	2.39	1.95	34.10	44.30	47.93	62.04
<i>Northern Europe</i>												
Denmark	3 375	4 128	4 297	4 794	1.52	0.99	0.80	0.47	73.67	82.13	84.19	89.42
Finland	1 687	2 632	2 914	3 600	3.17	2.57	2.04	0.73	38.08	56.58	62.16	75.84
Iceland	141	187	202	256	2.05	1.56	1.54	0.98	80.11	86.57	88.21	92.09
Ireland	1 299	1 713	1 905	2 783	1.62	2.29	2.13	1.75	45.84	54.71	57.76	69.54
Norway	1 150	1 898	2 165	3 039	3.46	3.09	2.63	1.38	32.11	47.37	52.54	67.79
Sweden	5 429	7 015	7 455	8 663	1.84	1.45	1.22	0.63	72.58	84.61	87.23	92.26
<i>United Kingdom of Great Britain and Northern Ireland</i>												
Great Britain and Northern Ireland	45 034	50 643	52 245	58 851	0.86	0.62	0.62	0.59	85.68	89.75	90.83	93.72
<i>Southern Europe</i>												
Albania	502	867	1 043	2 117	3.70	3.52	3.70	3.34	30.61	34.93	36.84	49.66
Gibraltar	24	27	28	31	0.80	0.76	0.73	0.33	100.00	100.00	100.00	100.00
Greece	3 571	5 128	6 496	7 169	2.57	2.10	1.84	0.99	42.88	57.42	61.93	74.51
Holy See	1	1	1	1	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00
Italy	29 812	36 809	39 048	47 563	1.47	1.28	1.18	0.91	59.36	66.90	69.33	78.13
Malta	230	266	279	300	0.95	1.00	0.95	0.10	69.91	80.85	83.28	89.29
Portugal	1 989	2 471	2 742	4 406	1.29	1.77	2.08	2.37	22.54	28.20	30.61	44.42
San Marino	14	19	20	24	2.51	1.08	1.03	0.87	93.33	95.00	95.24	96.00
Spain	17 141	24 978	27 634	37 452	2.63	2.26	2.02	1.33	56.57	70.49	74.27	83.37
Turkey	8 181	17 106	21 482	45 482	5.04	4.68	4.56	3.30	29.74	42.89	47.36	62.66
Yugoslavia	5 137	8 198	9 437	14 761	3.21	2.93	2.82	1.99	27.92	38.45	42.32	57.54
<i>Western Europe</i>												
Austria	3 520	3 970	4 130	5 239	0.90	0.60	0.79	1.30	49.94	52.67	54.14	64.54
Belgium	6 042	7 033	7 281	8 505	1.20	0.64	0.69	0.78	66.01	71.43	72.37	78.89
France	28 500	39 703	42 941	53 034	2.42	1.79	1.57	0.90	62.39	75.03	77.93	85.36
<i>Germany, Federal Republic of</i>												
Republic of	42 884	51 251	52 513	59 185	1.41	0.75	0.49	0.55	77.36	83.09	84.67	89.35
Liechtenstein	3	5	5	9	2.88	4.46	0.00	4.06	18.75	22.73	21.74	32.14
Luxembourg	195	252	270	308	1.65	1.83	1.38	0.43	62.10	73.68	78.26	87.25
Monaco	23	24	25	28	0.00	0.85	0.82	0.36	100.00	100.00	100.00	100.00
Netherlands	9 182	10 376	10 764	12 791	1.02	0.41	0.73	0.97	79.98	76.30	76.30	79.89
Switzerland	2 736	3 666	3 912	5 045	2.21	1.43	1.30	1.27	51.03	56.10	58.09	68.49
<i>Union of Soviet Socialist Republics</i>												
Republics	104 587	155 316	173 653	239 614	2.75	2.42	2.23	1.35	48.80	60.90	64.77	76.06
Japan	58 712	83 424	91 970	114 128	2.37	2.29	1.95	0.87	62.40	75.08	78.24	85.86
<i>Australia-New Zealand</i>												
Australia	8 315	12 039	13 445	18 754	2.51	2.37	2.21	1.45	80.61	87.18	88.80	92.64
New Zealand	1 803	2 518	2 766	3 822	2.38	1.92	1.88	1.51	76.01	83.07	84.77	89.57

POPULATION AND A NEW INTERNATIONAL ORDER: A MISSING LINK?

Victor L. Urquidi*

SUMMARY

Before the United Nations World Population Conference took place at Bucharest there had been a tendency in certain quarters to put excessive emphasis on rapid population growth as a factor responsible for the long-term plight of the developing countries. The Bucharest Conference, while recognizing the implications of rapid population growth, clearly placed the population issue in the framework of the social and economic development strategies of the United Nations and thus made it part of the new international economic order. Within a conception of an attitude of global solidarity and responsibility, it can be argued that population growth and policies play an important role, in some respects a vital one, in the perspective for improving world order, just as international economic co-operation will reflect on the success of population policies through its impact on development strategies and programmes. There will no doubt have to be a reconsideration of the development strategies because foreseeable trends imply the need for at least a doubling of output and investment over the next 30 years only to maintain present *per capita* income levels. In addition, a new international order will have to give increasing attention to the political global aspects of population, resources and technology. Since the minimum reasonable economic aim of a new international order should be to reduce substantially the gap between the rich and poor countries, unprecedented social and economic development policies, including a population policy favouring lower mortality and especially lower fertility in developing countries, are absolutely necessary.

In addition to the question of numbers and differential growth rates, the impact of demographic growth on present and future labour supply, in relation to demand, has international repercussions which should be the subject of policy analysis. To this end the World Population Plan of Action recommends that efforts should be intensified to determine for each country the technologies and production methods best suited to its working population situation. Although in this regard the Plan envisages programmes at the national level, it is clear that the problem has an international dimension, since technology is at present derived mostly from international transfer rather than from endogenous sources. The international aspects of the status of women also need careful analysis and should be incorporated in international strategies. International co-operation to promote employment may have to tackle the difficult task of providing employment for the increasing demand on the part of women caused by development as well as by fertility decline.

Since the United Nations World Population Conference was held at Bucharest in 1974, population questions and policies have clearly been inserted in the set of issues that may be conveniently taken together under the term "international economic order", particularly with reference to the "new" international economic order advocated by the vast majority of nations. This takes for granted that the existing international economic order is not satisfactory and that policies may and should be followed and measures taken to achieve and ensure a new order. It is the purpose of this article to explore how population fits into these issues and what demographic aspects and policies may be involved in the achievement of a new order.

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It may be noted at the outset that the word "economic" may at times be left out in this discussion, first because population is certainly not a purely economic matter; secondly because there are other issues than economic ones to be dealt with in creating a new international order (e.g. disarmament); and thirdly because demographic phenomena are subject to national sovereignty and therefore to national political attitudes and decisions. Although the economic part of a new international order is perhaps predominant, it will be convenient to keep in mind the broader concept of a "new international order".¹

What do we understand by the international order? Briefly, it can be said to mean the set of political and eco-

¹ A most comprehensive treatment of this concept can be found in Jan Tinbergen, Co-ordinator, *RIO: Reshaping the International Order: A Report to the Club of Rome* (New York, E. P. Dutton and Co., Inc., 1976).

conomic factors and policies governing relations and interchange between nations, whether subject to international agreements or not. Thus, in the nineteenth century an "order" developed largely characterized by the free movement of goods, people and capital between nations, which, however, embodied structural, institutional and political factors resulting in dominance by a few "Western" industrial powers, and economic and political subservience by the less developed nations able to supply basic primary products and having abundant natural resources and cheap labour. Signs of a gross inequality between nations were already evident before the First World War as a result of the then existing (and unplanned) order.

The period between the First and Second World Wars witnessed a restrictive approach to international economic relations and rising political tension. The post-war settlements, although they included decolonization, establishment of international and regional institutions of various kinds, a certain freeing of world trade, regional integration schemes and the creation of the United Nations system to deal with peace-keeping and security, food, education, health, trade and development and other matters, have not succeeded in correcting the basic structural international maladjustments and disparities. In particular, the concentration of science and technology in the industrially advanced nations, the emergence of powerful transnational corporations, the half-hearted attempts at disarmament and the recent disillusionment with international aid for development, as well as the upsurge of protectionism, have contributed—though they are not the only factors—to a worsening of international economic inequality and to growing dissatisfaction with the policies and institutional factors that impede change. The "gap" in living standards between the richest and more highly developed and the poorest and less developed sectors in the world is of the order of 13:1 (allowance being made for an underestimation of low-income aggregates).²

The developing nations, encompassing, of course, different categories and kinds of societies, are in most cases still highly dependent on exports of primary products subject to sharp price and market fluctuations, significant flows of foreign aid, and large-scale borrowing, and are subject to restrictive trading policies by the developed nations, adverse terms of trade, technological dependence, and the loss of autonomy in development strategies implied by the world-wide activities of transnational enterprises. The developing countries, in addition, face severe internal structural problems related to land tenure systems, industrial concentration, low levels of education and skills, low health and nutrition levels, lack of infrastructure (social overhead), and—not the least of the problems in most areas—rapid population growth.

The developed countries, on the other hand, have benefited from their own vast scientific and technological effort, their concentration and use of financial resources, the strength of transnational corporations, political and military power, and—not least—moderate population growth. Having arrived first at the stage of highly intensive agricultural and industrial development, and having achieved an essentially urban society and culture, they have also developed restrictive and defensive policies vis-à-vis the developing world and its problems, and have even shown widespread indifference (with of course notable exceptions among countries and/or specific policies).

² Tinbergen, *op. cit.*, chap. 6.

Before Bucharest there was a tendency in certain quarters to put excessive emphasis on rapid population growth (let us say above 2 per cent per annum) or on high population density as a factor responsible for the long-term plight of the developing nations or individual countries among them, and therefore for their relative poverty. The Bucharest Conference, while recognizing the implications of rapid population growth—a matter for each country to judge for itself—clearly placed the population issue in the framework of the social and economic development strategies adopted by the United Nations and thus made it a part of the new international economic order to be developed and implemented. The World Population Plan of Action puts it this way:

"The explicit aim of the [Plan] is to help co-ordinate population trends and the trends of economic and social development. The basis for an effective solution of population problems is, above all, socio-economic transformation . . . the Plan of Action must be considered as an important component of the system of international strategies and as an instrument of the international community for the promotion of economic development, quality of life, human rights and fundamental freedoms."³

Underlying this approach is the notion, validated by historical experience, that social and economic improvement is a necessary condition if significant changes are to occur in demographic behaviour, particularly in order to bring about the so-called demographic transition towards lower birth rates accompanying or following lower mortality. It is assumed that developing nations are or may be in a position to formulate clearly long-term development strategies and to implement them in a manner that will raise socio-economic conditions for the population, especially the lower-income rural and urban groups that usually constitute the majority of the people. Such an assumption is in the case of many countries reasonably justified. Developing countries are of many types, levels and sizes, and some are more capable than others of formulating and carrying out development strategies. There may be different "styles" or "models" of development, under different political and social systems. There is a growing dissatisfaction with the experiences of the 1950s and 1960s, with the prevailing paths of development characterized by increasing internal inequality and new and complex forms of dependence on the industrially-advanced nations for trade, technology and finance. This situation is beginning to change as the existing international order is being questioned more and more and as the limits to internal inequality are being reached from a social and political point of view.

But whatever the success of a transition to a new, more self-reliant and equitable domestic development strategy, aimed *inter alia* at meeting basic needs, it can be argued that for the vast majority of developing countries there is a need for increased and improved international economic co-operation. This is what the new international economic

³ See *Report of the United Nations World Population Conference, Bucharest, 19-30 August 1974* (United Nations publication, Sales No. E.75.XIII.3), chap. 1, para. 1; paras. 2 and 14 are also relevant. See also Jason L. Finkle and Barbara B. Crane, "The politics of Bucharest: population, development and the new economic order", *Population and Development Review*, vol. 1, No. 1 (September 1975), pp. 87-115. See also V. L. Urquidí, "On implementing the World Population Plan of Action", *Population and Development Review*, vol. 2, No. 1 (March 1976), pp. 91-99.

order is about—the adoption of new principles and policies in the areas of trade and money, the pricing of basic products, the utilization of natural resources, food, energy, foreign investment, international lending, technology and technical co-operation, environment, and movement of people, in order to assist the developing nations to achieve their long-term development objectives. The adoption and establishment of a new international economic order is thus a question of international economic justice, to redress the dangerous international inequality that has emerged during the past 30 years, or, some might say, since the Industrial Revolution. What is required to begin with is an attitude of global solidarity and responsibility, and the implementation of mutually consistent policies and measures of co-operation in the different areas. As already suggested, this approach transcends the purely economic aspects.

Within such a conception, it can be argued that population growth and population policies play an important role, in some respects a vital one, in improving the world order (this is implicit in the World Population Plan of Action), just as international economic co-operation will affect the success of population policies through its impact on development strategies and programmes. Population is thus tied to the new international order and will be affected by it. Although population policies are a matter for national sovereign decision, they will nevertheless contribute to international solidarity and order: this may apply especially to developing countries that are able to slow down their population growth from the very high rates prevailing in recent years.

There are indications, as shown in various reports from the Population Division of the United Nations Secretariat,⁴ and other sources, that population growth in the developing countries is declining, and there is clear evidence that in the developed nations a zero-growth situation may soon be reached, so that the total population of the world by the end of the century might be below the 6-6.5 billion projections previously made. Nonetheless, rates of growth in the developing countries will still remain high over the next 20 years, and absolute population numbers will continue to rise well into the next century owing to the momentum implied in the young age-structure—points which are not sufficiently recognized by non-demographers. Foreseeable trends imply the need for substantial solutions to the employment, food supply and infrastructure problems. It will be necessary to achieve at least a doubling of output and investment over the next 30 years only to maintain present *per capita* income levels. There will no doubt have to be a reconsideration of development strategies.

In addition, increasing attention will have to be given to the question of the global context in which population, resources and technology must be viewed in a long-range perspective. This question has been neglected at the policy-making level, which is at most short-term or medium-term. Also, it has not entered sufficiently, indeed hardly at all, into the discussions on the new international order, which seem to refer to the next decade only.⁵ as Macura

⁴ *Concise Report on the World Population Situation in 1977: New Beginnings and Uncertain Ends* (United Nations publication, Sales No. E.78.XIII.9).

⁵ For instance, population policy is almost absent from the *RIO* report (see foot-note 1), and is totally absent from the Charter of Economic Rights and Duties of States (General Assembly resolution 3281 (XXIX)) and the resolutions of the sixth and seventh special sessions of the General Assembly.

argues,⁶ the community of interest among countries with respect to the control of global population trends must be taken into account; furthermore, it is not only a matter of development, employment, education and food supply, but also of international security. Some authors, such as Teitelbaum,⁷ stress the relation between population and human rights, which is a matter for international concern. Others, for instance, Choucri and North,⁸ link differential population growth (i.e. North-South) to international competition and conflict through differential technological growth and access to resources.

Population is thus of concern to the whole world and not only to individual nations. One can argue that we live today, and will live increasingly in the future, in an age of demographic interdependence, no less than economic interdependence and resource interdependence. There is a political dimension to the interrelationship. World order—a new international order—cannot be conceived without including population matters. Population policies are therefore, inevitably, part of the transition to a new international order. As is stated by Finkle and Crane,⁹ population, as a result particularly of the Bucharest Conference, has become politicized in a new context of struggle between developed and developing nations for their share of world resources and power.

What should be the goals and main features of a new international order? According to the *RIO* report,¹⁰ the minimum reasonable economic aim should be to reduce the 13:1 gap between the richest and the poorest sectors of the world to a 3:1 ratio, considered feasible over the next 40 years and necessary to ensure absence of international conflict and acute internal social conflict. Such an aim would require truly unprecedented domestic social and economic development efforts, including a population policy favouring lower mortality and especially lower fertility on the part of the developing countries themselves. (This point, incidentally, is not sufficiently stressed in the *RIO* report.) To reach the new target, it would also be necessary to achieve a reshaping of international economic policies within the context of global solidarity and responsibility mentioned before. The strategy adopted by consensus at the seventh special session of the General Assembly in resolution 3362 (S-VII), as well as the Charter of Economic Rights and Duties of States (adopted by an overwhelming majority), seek primarily to create a permanent condition of economic co-operation. Such co-operation is to be guided by a number of principles, *inter alia*, national sovereignty, non-intervention and the right of every nation to adopt a distinctive economic and political system. The co-operation envisaged is to include a lengthy enumeration of topics, namely: agreements on the utilization of natural resources, association among producers of raw materials, agreements to stabilize prices of basic products, non-discriminatory access to international trade, the regulation of foreign investment and of the activities of transnational

⁶ Milos Macura, "Components of an International Approach to Population Policy", *International Social Science Journal*, vol. XXVI, No. 2 (1974), p. 203.

⁷ Michael S. Teitelbaum, "Population and development: is a consensus possible?", *Foreign Affairs*, July 1974, p. 758.

⁸ Nazli Choucri and Robert C. North, "Dynamics of international conflict: some policy implications of population, resources and technology", *World Politics*, pp. 83-84, vol. XXIV, No. 1, Supplement (October 1971).

⁹ Jason L. Finkle and Barbara B. Crane, *loc. cit.*, p. 89.

¹⁰ Tinbergen, *op. cit.*, chap. 6, pp. 93-94.

corporations, improved terms of trade, the use and transfer of science and technology through direct and multilateral means (rather than through intermediation by transnational corporations), regional co-operation agreements, long-term financing for development, rational use of maritime resources, protection of the environment. To these elements may be added international monetary restructuring and co-operation, food supply security, restructuring of present external indebtedness, and effective efforts at disarmament in order to release for development and long-term lending a substantial part of the present arms expenditure level, now in excess of \$350 billion per year.

The policies and institutional reforms that are expected to arise from the principles and lines of action of a new international order, if duly implemented—and there are no signs yet that they will, as shown by the disappointing 1976 Conference on International Economic Co-operation should be instrumental in helping the developing countries to transfer and redirect resources to social and economic development and to gain access to markets and technology, thus strengthening domestic policies. Emphasis is to be placed on achieving increasing self-reliance, understood as the capability of developing countries to decide on their own paths to development and ability to reach their desired objectives. It is in this general context that population policies in the developing countries are more likely to succeed.

Making allowance for the relative neglect of population in the proposals for a new international economic order, this is the post-Bucharest approach. However, implementation of the World Population Plan of Action has been rather limited, particularly with respect to socio-economic matters.¹¹ Can something be done from the population side that may be relevant to a New International Order? A closer look at the population problem narrowly defined and at certain parts of the World Population Plan of Action may reveal some useful interconnexions.

First and foremost is the question of actual numbers and of growth rates. The concentration of already large populations in Asia cannot be set aside as irrelevant to a new international economic order, least of all in terms of prospective food supply and prospects for steady increases in employment and the reduction of existing unemployment and underemployment. Furthermore, the rate of population growth, although now lower, is declining in most countries from still very high levels that are historically unprecedented. This is particularly true in Latin America, where population doubling times are of the order of 20-25 years. It may become true in many African countries as mortality starts to diminish more rapidly. Even in major Asian countries, growth rates remain above 2 per cent per annum, while in Latin America 2.5-3 per cent is the rule. With the collapse of growth rates in the industrially advanced nations, 90 per cent of the 80 million annual increase in world population is occurring in the developing countries—44 per cent in China and India alone and about 11 per cent in Latin America. The World Population Plan of Action is quite explicit about this in citing the demographic inertia, "which will lead to a growing population for many decades to come" (para. 13). This is viewed as an argument for accelerating socio-economic development: "Efforts made by developing countries to speed up economic growth must be viewed by the entire international

community as a global endeavour to improve the quality of life for all people of the world, supported by a just utilization of the world's wealth, resources and technology in the spirit of the new international economic order" (*ibid.*). Here is a clear link between population and the new international economic order, in the World Population Plan of Action itself. But it is unfortunately mere rhetoric.

The impact of demographic growth on the present and future labour supply, in relation to employment demand, already has—and may continue to have over a long period—an international repercussion that is neither being properly understood nor sufficiently subjected to policy analysis. Seemingly uncontrollable international migration is taking place from less developed to more developed countries in general and between certain developing countries. The main flows are from West and South Asia and North Africa to Central and Northern Europe, and from Mexico, the Caribbean, Central America and Northern South America to the United States and Canada; there are also important intra-Latin-American, intra-West-African and intra-Arab-country migrations. Some of the major migration currents are often illegal, mostly comprising unskilled workers. In addition, there is the brain-drain from developing to developed countries, or among developing nations.

The new patterns in international migration are attributed mainly to structural problems, particularly in the rural areas and marginal urban peripheries of the developing countries, and to income and wage differentials with respect to the developed countries and the expectations they arouse. Very little effort has been made to rationalize and regulate such flows of migrants. It can be argued that in spite of the ever-present income differentials, the policies and measures implicit in certain aspects of the new international economic order—more international finance for development, better access to the markets of the industrially advanced countries, redeployment of industry—would increase employment opportunities in the countries of emigration. In addition, in the long run, policies for fertility reduction would also have an influence (both on internal and international migration, since they are interrelated).

The World Population Plan of Action recognizes the international migration problem, although it tends cautiously to minimize it. It states in paragraph 10: "For some countries, international migration may be, in certain circumstances, an instrument of population policy". (An ambiguous statement.) The Plan goes on to distinguish two types of migrants: unskilled and skilled (surely a simplification). "Movements of the former"—it continues—"often involve large numbers and raise such questions as the fair and proper treatment in countries of immigration, the breaking up of families and other social and economic questions in countries both of emigration and immigration." The brain-drain is seen as "of considerable concern to many countries and to the international community as a whole". In paragraphs 51-62, the Plan makes a number of recommendations, for example, to "facilitate voluntary international movement"; "to conduct, when appropriate, bilateral and multilateral consultations"; to settle the problems of refugees and displaced persons arising from forced migration"; to create "favourable employment opportunities at the national level"; and to provide "proper treatment and adequate social welfare services" in receiving countries; various measures are also suggested to reduce the brain-drain or to stimulate a reverse brain-drain. What is not spelled out at all, however, is the problem of

¹¹ Some relevant points are raised in Bernard Berelson, "The World Population Plan of Action: where now?", *Population and Development Review*, vol. 1, No. 1 (September 1975). See also V. L. Urquidí, *loc. cit.*

the international distribution of population in relation to a possible new international division of labor—redeployment of industry to the developing countries, subcontracting etc. Nor is the question of prospective labour shortage and labour market imbalance in certain of the industrially advanced nations dealt with in relation to migration from less developed nations. This is surely a matter for the new international economic order so as to regulate complementary migratory movements.

Structural and open unemployment in developing countries is in the order of 8-15 per cent of the labour force, and sometimes higher. To this must be added an equivalent or even greater magnitude of underemployment and partial employment. Employment trends in developing countries are a function of domestic economic growth, the rate of population increase, and the rates of participation in the labour force, especially of women. But again these factors are partially dependent on international economic co-operation, trade possibilities, prices of basic products etc. A further factor affects these trends, namely, the transfer, increasingly, of labour-saving technology to the developing countries as the principal means of raising productivity and output. There has been much discussion and controversy in the last few years, both at international levels and in academic and other spheres, on the impact of technology on employment. Most industrial and service technology emerges from the advanced countries, chiefly from the research and development activities of transnational corporations or as a spin-off from highly capital-intensive defence research and development. The developing countries, in spite of an abundance of unskilled labour, rarely have any alternative but to apply labour-saving and/or capital-intensive technologies that have been elaborated in countries where labour-supply conditions and population trends are the opposite. They lack the necessary research capability to do otherwise, and frequently have not the skills for implementing a socially rational technology policy. Moreover, it is the transnational enterprises themselves that apply their own highly developed labour-saving technology in the production of industrial commodities and services that can only be purchased by the higher-income groups in the developing countries. A serious structural problem is thus generated, with implications for employment, consumption, international migration, technological policy, allocation of resources for research and development, and choice of sector and of product in a development strategy.

The World Population Plan of Action briefly mentions these matters in paragraph 69:

“... patterns of production and technology should be adapted to each country's endowment in human resources. Decisions on the introduction of technologies affording significant savings in employment of manpower should take into account the relative abundance of human resources. To this end it is recommended that efforts should be intensified to determine for each country the technologies and production methods best suited to its working population situation and to study the relationship between population factors and employment.”

Although in this respect the World Population Plan of Action envisages programmes at the national level, it is clear that there is an international dimension to the problem, since technology, as argued above, is at present mostly derived from international transfer rather than from endogenous sources. The 1979 United Nations Conference on Science and Technology for Development dealt with

some of these issues, again in the framework of the new international economic order. The United Nations Conference on Trade and Development has been working on the transfer of technology for several years; the International Labour Organisation has carried out important research on technology alternatives; the United Nations Industrial Development Organization has initiated a programme of action on appropriate industrial technology; and the Advisory Committee on the Application of Science and Technology to Development devotes part of its efforts as a matter of course to the question of appropriate technology. The Governments of several developed countries have started appropriate technology aid programmes for developing countries. There are also noteworthy efforts in the private research sector in both developed and developing countries, as well as useful pilot projects and technology development experiences. It is clear that appropriate technology (also referred to as intermediate, scaled-down or capital-saving, even barefoot, technology), understood mainly as employment-creating and adapted to local resource endowments and local needs, will not solve the problem of excess labour supply that results from high rates of population growth, but may be of considerable help in a transition period and may contribute to raising output, saving energy and protecting the environment. The new international economic order cannot neglect this matter, as part of a new technological order.

The World Population Plan of Action contains important provisions on the status of women and the role of the family. Regarding women, in its statement of principles and objectives, it says in paragraph 14 (h): “Women have the right to complete integration in the development process, particularly by means of an equal access to education and equal participation in social, economic, cultural and political life. . . .” In paragraph 32 (b) the Plan advocates:

“The full integration of women into the development process, particularly by means of their greater participation in educational, social, economic and political opportunities, and especially by means of the removal of obstacles to their employment in the non-agricultural sector wherever possible. In this context, national laws and policies, as well as relevant international recommendations, should be reviewed in order to eliminate discrimination in, and remove obstacles to, the education, training, employment and career advancement opportunities for women”.

The status of women could of course be seen as a purely national matter. But it must be related at least to the employment problem, which has international aspects, and to international migration. The employment strategies need support from the new international economic order. What has not been clearly asked is what the participation and integration of women in the labour force in the modern sectors of the developing country economies with high population growth rates should consist of. In many countries it will be difficult enough to provide employment for men, let alone women. Efforts to reduce fertility will have the effect of increasing the supply of women to the active labour force. And also, as the supply of young male labour starts to decline after some time (with a 12- to 15-year lag) the increasing participation of adult women may tend to make up for it. This means that international co-operation to promote development and create employment is likely to be a much more difficult task than is commonly thought. The trend in the world at large is towards the enhancement of the role and status of women. The World

Conference of the International Women's Year held in 1975, placed the matter also within the guidelines and objectives of the new international order. Population and employment policy, the status of women and the international order are thus inextricably linked together.

The above brief review of some of the issues of population and a new international order, if nothing else, will perhaps serve to stimulate discussion on the following points:

(1) Further exploration is needed of the interrelation between population growth and policies and the formulation of a new international economic order. The third United Nations development decade—the 1980s—might take this matter up explicitly in the new development strategy.

(2) Some important specific matters which require further elaboration and research, as well as policy analysis, are:

(a) The global implications of population growth into the twenty-first century, albeit at a lower rate than at present;

(b) The future international distribution of population and its international economic implications;

(c) The relation of policies and measures under a new international economic order strategy to employment trends in developing countries, including the effects of a redeployment of industry;

(d) The international migration of unskilled workers, skilled workers and professionals and its economic implications in both developed and developing nations; possibilities of international regulation;

(e) The international transfer of technology and its impact on employment in developing countries, with the present and prospective labour surplus due to high population growth rates; possibilities of developing and applying appropriate technologies;

(f) The relationship of the status of women to employment-creating policies, including the international aspects of that relationship;

(g) The concept of demographic interdependence as part of a new international order.

(3) Both the scientific communities and the United Nations agencies and offices would do well to devote increasing effort to research and co-operation in these questions.

The World Population Plan of Action faced some of the issues clearly. There is, however, a lag in the perception of the problems and in the implementation of the Plan's recommendations. People are at the centre of the development process: a national concern. Development is both a national and an international, global concern. There is still, however, a missing link between population and the proposals for the new international economic order.

POPULATION GROWTH AND ECONOMIC DEVELOPMENT

Wassily Leontief*

SUMMARY

This paper describes some of the results of five different projections of the future growth of the world economy, each of them incorporating a different combination of assumptions concerning the future population trends in developed and less developed countries.

The computations are based on the multiregional input-output model of the world economy prepared for the United Nations report entitled *The Future of the World Economy*. However, the future income levels of the different regions that for the purposes of most of the economic projections included in that report were exogenously prescribed are treated in the present computation as endogenously determined variables.

A comparison of the five new projections reveals the nature of intra-regional and interregional dependence of rates of economic growth on population trends in the developed and the two groups of less developed countries.

The possibility of reducing the "income gap" between the developed and less developed countries is assessed and it is found to be rather remote so long as the framework of structural, or rather institutional, constraints that now govern the economic relationships between these two groups of countries continues to prevail.

The summary of the papers presented at the World Population Conference held at Bucharest four years ago expresses on behalf of the Secretary-General of the United Nations the hope that "models of the economy . . . reflect both important aspects of the process of socio-economic development and the impact of population growth on various sectors of the economy. . . . Even if such models cannot make successful predictions, they may (if they are well formulated and if adequate . . . data are available) help in the assessment of the alternative consequences of the alternative rates of population growth in specific development contexts."¹

The construction of a large multiregional input-output model of the world economy began under the sponsorship of the United Nations a year before the publication of the above lines. A study of the *Future of the World Economy* based on that model was completed in 1976 and published in 1977.²

The immediate purpose of that study was to assess the conditions under which the present "income gap" between the less developed and the developed countries could be reduced by the year 2000 to one half of what it was in 1970.

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¹*The Population Debate: Dimensions and Perspectives. Papers of the World Population Conference, Bucharest, 1974* (United Nations publication, Sales No. E/F/S.75.XIII.4), pp. 71-72.

²Wassily Leontief and others, *The Future of the World Economy: A United Nations Study* (New York, Oxford University Press, 1977). Published also in several translations.

The structure of the model, of course, permits taking into account the demographic factor. However, in formulating different scenarios on which the computation of alternative patterns of future economic growth of the less developed and the developed countries was based, the possibility of exploring the effects of alternative assumptions concerning the prospective population trends was explored only to a very limited extent. The aim of the present paper is to extend the previous analysis in this particular direction.

Despite its global scope, the model contains and displays a great amount of detail. The world is divided into 15 regions which fall into three main groups:³ the developed regions (North America, Eastern Europe, Western Europe (high and medium income), the USSR, Japan, Oceania, South Africa) characterized by advanced, not to say completed, industrialization and relatively high average *per capita* income; the less developed regions rich in natural resources (the Middle East, Venezuela, some Andean countries, and some parts of tropical and northern Africa), and the less developed countries with few resources.

The system of 2,625 simultaneous equations contained in that model provides a concise description of the structural relationships that govern the intersectoral relationships within and between the 15 different regions. The balancing of exports and imports of the internationally traded goods, as well as of each type of international financial transaction, such as investment, borrowing and granting developmental assistance, is described in terms of some 40

³ For detailed tabulation of the individual countries included in each of the 15 regions, see *The Future of the World Economy*, technical annex I.

international trading pools, one for each class of traded goods and for each type of financial transaction.

The state of technology used in each sector of a particular region at any given time is represented by a set of input coefficients describing the amounts of products of other sectors required to produce a unit of its output; the physical capital requirements are described by corresponding sets of capital coefficients. Anticipated changes in these structural coefficients, i.e., technological change, can be projected separately for each sector in each region. For every less developed region, it takes the form of a gradual, step-by-step introduction of input and capital coefficients already used in the more developed regions, the pace of the process being controlled by the increase in that region's average *per capita* income. For the developed regions, the changes in the technical coefficients are projected by conventional methods.

Population figures are introduced in our input-output computations as exogenously determined magnitudes. That means that while the model as it is formulated now permits us to assess in great detail the potential effect of population change on different aspects of economic growth, it does not enable us to account for the converse effect of economic change on population growth.

Formally, nothing would be easier than to "generalize" or "close" the system by including in it additional structural equations purporting to describe, say, the influence of rising *per capita* income, or changes in occupational structure, on the birth and death rates and, consequently, on the population growth in each region. A numerical solution of such an enlarged system could be obtained at small additional costs.

However unreliable might be the projections of some of the structural relationships that are explicitly included in the present model, a perusal of recent writings on the effects of various economic variables on the rate of population growth leads to the conclusion that the present understanding of these relationships is still much more uncertain. Inasmuch as the strength of a long chain of reasoning cannot exceed that of its weakest link, the decision was made not to include in the present version of the model relationships purporting to explain the rates of population growth instead of treating them as given.

Nevertheless, as explained above, the model in its present form, employed with its present data base provides a useful tool for assessing the effect of various combinations of hypothetical changes in future population trends on the course of economic growth described in terms of all the endogenously determined variables.

The methodological procedure employed consists in broadening the spectrum of alternative scenarios used to generate, on the basis of essentially the same multiregional input-output model, a set of alternative projections of the world economy from 1970—that served as the base year—through 1980 and 1990 to the year 2000. Additional projections were carried out incorporating various combinations of assumptions concerning the future rates of population growth with the specific purpose of gaining a better insight into the role that the demographic factor can be expected to play in shaping the future economic relationships between the developed and the less developed countries.

In the original version of *The Future of the World Economy*, the same basic set of structural relationships was used to make two quite different types of projections de-

signed to provide answers to two quite different kinds of questions.

Scenarios identified as variants of Scenario X contain exogenously fixed, i.e., prescribed, income targets (*per capita*) to be attained in each of the less developed and developed regions by 1980, 1990 and 2000. The purpose of the computations based on such scenarios was to find out what readjustments in the present patterns of economic growth will be required to reduce the proverbial income gap between the developed and less developed countries from the 1970 ratio of 12:1 to that of 7:1 by 2000. The results of these computations showed in great detail the levels of sectoral outputs, consumption and investment in each of the 15 regions as well as the magnitudes of international commodity flows and corresponding financial transactions that would have to be realized in order to achieve such an ambitious objective.

Scenarios identified as belonging to variants of Scenario A (actually only one of them was carried out), instead of incorporating a set of externally prescribed income targets, were designed in such a way as to compute—that is to project—the future actual (rather than desirable) levels of income in all regions along with the corresponding magnitudes of all the other endogenously determined variables. Instead of determining how large the interregional commodity flows and financial flows would have to be in order to make possible the realization of certain externally prescribed income targets, these essentially conservative scenarios incorporate the assumption that all future international transactions, that is, interregional capital movements, credit and developmental assistance, will be governed by the same structural relationships that have controlled them in recent years.

Thus, while computations based on the X variant throw light on the nature and magnitude of shifts in international economic relationships that could permit the attainment of ambitious developmental goals associated with the notion of a "new economic order", the second set of projections that are based on the A variant can provide a deeper insight into the complex interaction of economic forces that shape the development of the world economy at the present time. Hence the decision was made to base the new computations aimed at assessing the potential influence of alternative population trends on future economic growth on scenarios of the A type in which the GDP of all regions (except those of the Middle East-African oil-producing countries) are treated as dependent, i.e., endogenously determined variables.

The relation between population size and the over-all level of economic activities in the less developed countries is typically different from that prevailing in the advanced industrialized areas such as the United States and Canada, Western Europe or Japan, not to speak of the Soviet Union.

Despite cyclical ups and downs, the developed countries maintain and can be expected to maintain in the future a high, if not necessarily full, level of employment. Taking account of the age structure, participation rates and, last but not least, the prevailing technological conditions, the total output can be said to be related in the longer run as directly to the size of the population as it is to the total available stock of productive capital. In less developed areas where a very substantial part of the labour force does not participate effectively in the production process (in agriculture this situation is often described as disguised unemployment), no such direct relationship between popula-

tion size and the total level of output can be assumed to exist.

Within the framework of the world-wide model, the description of the intersectoral relationships within each of the developed areas contains an equation that states that the sum total of persons employed in all the different sectors has to be equal to the total available labour force, the magnitude of which, in its turn, reflects the size and age structure of the total population taking into account appropriate participation rates.

For the reason described above, no such equation is included in the description of the input-output structure governing the operations of the economies of the less developed regions. The level of these operations, as measured, say, by the magnitude of their respective GDP, cannot be assumed to bear any direct relationship to the size of their total demographically defined labour force and through it to their total population figures.

The absence of sufficiently comprehensive estimates of the true agricultural labour coefficients makes us abstain from projecting agricultural employment in the less developed regions. Hence, average *per capita* GDP could be computed and tabulated only for the developed countries.

The data base used in these computations, the results of which are presented below, is the same as that compiled for the 1977 United Nations report, *The Future of the World Economy*, except for the more recent United Nations population projections. A detailed, although by no means exhaustive, description of the methods used to compile and project the thousands of input-output coefficients from 1970 through 1980 to 2000 is given in that document.

The computations were carried out in terms of 15 basic regions. However, for purposes of the following analysis, these were combined into three large groups of countries, which are presented in table 1.

TABLE I. AGGREGATED REGIONAL CLASSIFICATION^a

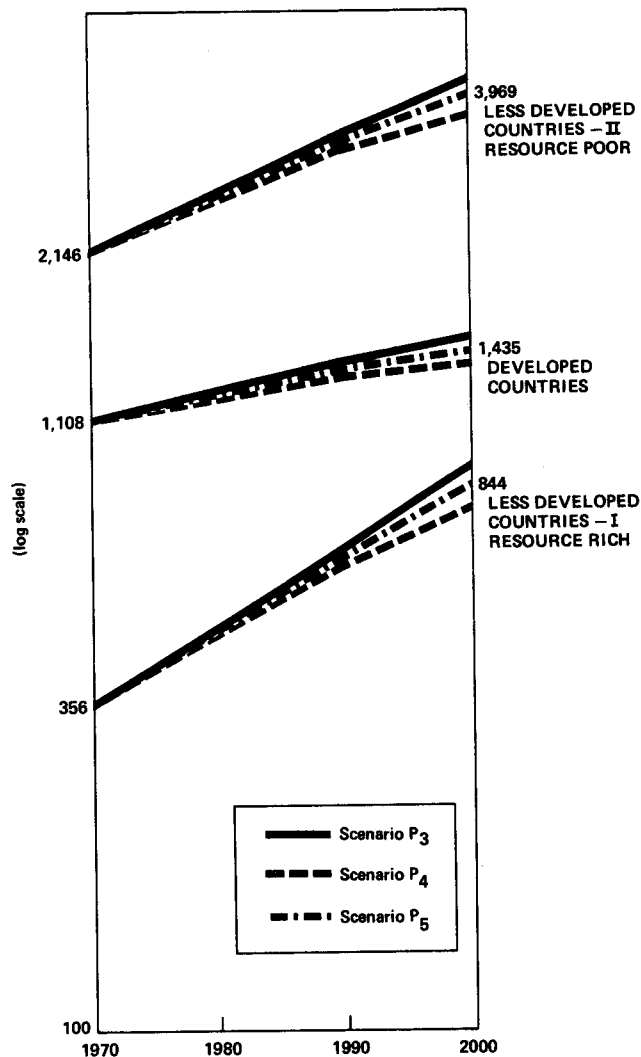
I. Developed countries (DC)	
A.	North America
B.	Western Europe—high income
C.	USSR
D.	Eastern Europe
E.	Western Europe—medium income
F.	Japan
G.	Oceania
H.	Africa—medium income
II. Resource-rich less developed countries (LCD-I) ...	
A.	Latin America—low income
B.	Middle East/Africa
C.	Africa—tropical
III. Resource-poor less developed countries (LCD-II) ...	
A.	Africa—arid
B.	Asia—low income
C.	Asia—centrally planned
D.	Latin America—medium income

^aFor detailed tabulation of the individual countries included in each of the 15 regions, see *The Future of the World Economy*, technical annex I.

The Population Division of the Department of International Economic and Social Affairs in the United Nations Secretariat publishes three alternative projections of the fu-

ture population growth in various countries. The curves tracing these projections from 1970 to 2000 for each of the three groups of countries referred to above are shown in figure 1.⁴

Figure I. Alternative projections of population growth, 1970-2000 (Millions)



To trace the role that the demographic factor can be expected to play in determining the course of future economic growth, five alternative multiregional input-output projections were carried out, each based on a different combination of assumptions concerning the rate of future population trends in the developed and the two groups of the less developed countries. The demographic assumptions underlying these five different projections, designated as P₁, P₂, P₃, P₄ and P₅, are presented in table 2.

⁴Population source, *World Population Prospects as Assessed in 1973* (United Nations publication, Sales No. E.76.III.4). Matching labour force estimates are provided by the International Labour Office, *Labour Force Estimates, 1950-2000*, 2nd ed. (Geneva, 1977).

TABLE 2. ALTERNATIVE POPULATION ASSUMPTIONS USED IN SCENARIOS P₁-P₅

Region	Scenario				
	P ₁	P ₂	P ₃	P ₄	P ₅
Developed countries	Low	High	High	Low	Medium
Less developed countries—I and II	High	Low	High	Low	Medium

Most of these scenarios represent combinations of high and low population trajectories since comparison of economic projections based on extreme assumptions is more likely to clearly illustrate the influence of the demographic factor than simulation of more moderate assumptions. Use of a "moderate" scenario, however, can be expected to indicate the most likely events, and a set of figures describing the projection based on scenario P₅ with full sectoral detail, but aggregated from 15 to three regions, is presented in annex II below.

Since several thousands of figures are used within the framework of our multiregional, multisectoral model to describe the state of the world economy in any given year, the results of any particular projection can be summarized in many different ways. A general overview of economic growth from the base year 1970 to the year 2000 as reflected in *per capita* income figures, projected on alternative assumptions of uniformly high (P₃), low (P₄) and medium (P₅) rates of population growth in all regions, is provided in table 3 and figure II.

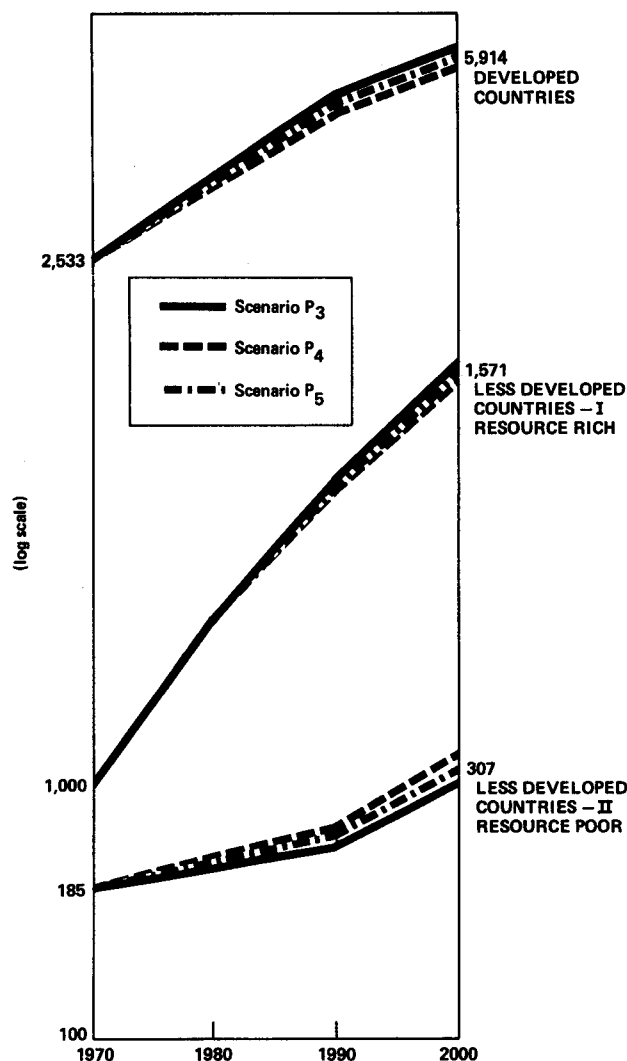
TABLE 3. GDP *per capita* AND RATES OF GROWTH OF GDP *per capita* UNDER ALTERNATIVE COMBINATIONS OF DEMOGRAPHIC ASSUMPTIONS

Region	Scenario	GDP <i>per capita</i> (1970 dollars)		Rate of growth in GDP <i>per capita</i> (percentage)	
		1970	2000	1970-2000	Average annual
Developed countries	P ₃	2 533	5 739	126.6	2.8
	P ₄	2 533	6 087	140.3	3.0
	P ₅	2 533	5 914	133.5	2.9
Less developed countries—I, resource rich	P ₃	280	1 534	133.5	5.8
	P ₄	280	1 628	481.4	6.0
	P ₅	280	1 571	461.1	5.9
Less developed countries—II, resource poor	P ₃	185	293	58.4	1.5
	P ₄	185	324	75.1	1.9
	P ₅	185	307	65.9	1.7

Comparing in pairs some of the scenarios described in table 2, we observe that:

(a) The shift from scenario P₄ to scenario P₂ means lifting the population figures for the developed countries from "low" to "high", while holding the population projection for both groups of the less developed regions at the same "low" level.

Figure II. Projected gross domestic product *per capita* under various combinations of demographic assumptions (1970 dollars)



(b) The shift from scenario P₁ to P₃ also means lifting the population level of the developed countries from "low" to "high", while the population levels in all the less developed regions is kept "high".

(c) The shift from P₄ to P₁ involves lifting from "low" to "high" the population figure of both groups of the less developed countries, while keeping that of the developed countries "low".

(d) The shift from P₂ to P₃ implies lifting the population figure of all less developed countries from "low" to "high" while keeping the population level in the developed countries "high".

Thus, by comparing projection P₄ with projection P₂, or P₁ with P₃, we can assess the economic implications of a shift—that is, an increase or a reduction—in the projected rates of population growth in the developed countries while population projections for the less developed areas are held constant at either the "low" or the "high" level.

On the other hand, a comparison of P₄ and P₁, or of P₃ with P₂, permits us to assess the economic effects of an

upward (or downward) shift in the projected population figures for both groups of the less developed countries combined with the assumption that the rate of population growth in the developed countries remains constant, either at the "high" or the "low" level.

Figures required for carrying out such comparisons of alternative projections of the population increase and corresponding projections of the income growth in the developed and the two groups of the less developed countries are presented on table 4.

A simple method of comparing two figures, or, as in this case, two sets of figures, is to express the magnitudes of the deviation of the first from the second as a percentage of the second. The results of appropriately selected paired comparisons of different rows of figures entered in table 4 are shown on table 5. The obvious similarity of the numbers appearing in its first and second rows indicates that the effects (expressed in terms of percentage changes) of a shift in the projected population level of developed countries are the same, whether the projected level of both groups of the less developed countries is high or low. Paired comparison of figures entered in the third and fourth rows similarly indicates that the effects of shifts in the projected population figures of less developed countries are practically independent of the population levels projected for the developed countries. Thus, we need to examine closely only two—say the first and the third—of the four rows of figures entered in table 5.

The first row of table 5 describes the income effects of a shift from P_4 to P_2 , that is, of a shift in the projected pop-

ulation level of the developed countries from "low" to "high" with the population figures projected for both groups of the less developed countries remaining the same.

The first three sets of figures entered in the first row of table 5, translated into a graph, are shown in figure III.A. In starting to examine it, the reader should centre his attention on the striped bars, disregarding at the outset all the bars with solid outlines. In interpreting this and all the subsequent bar charts one must keep in mind that they describe changes in demographic and economic variables, not over time—from 1970 to 2000—but rather from one level to another, both in 2000, each level corresponding to one of two alternative states of the entire system, under one of two alternative demographic scenarios.

The first block of bars depicts the basic demographic aspects of the shift from scenario P_4 to scenario P_2 : the population level in the developed countries is raised by 10.1 per cent, the population of both groups of the less developed countries does not change (being kept on the same "low" level); the population figure of the world as a whole consequently increases by 2.4 per cent.

The second block of bars shows the effect of these demographic shifts on the level of gross domestic product in each of the three regions: in the developed countries it goes up by 3.7 per cent which is only one third as large as the rise in their population level.

The absence of any significant change in GDP of the resource-rich less developed countries (LDC-I) is due to the fact that this group includes the Middle Eastern oil-producing areas whose growth prospects are likely to de-

TABLE 4. ALTERNATIVE PROJECTIONS FOR THE YEAR 2000 OF THE TOTAL GDP, *per capita* GDP AND GDP PER UNIT OF THE LABOUR FORCE IN THE DEVELOPED COUNTRIES

Scenario	Population (millions)				GDP (millions of 1970 dollars)				GDP per capita (1970 dollars)				GDP per unit of employed labour force (1970 dollars) DC
	World	Dc	LDC-I	LDC-II	World	Dc	LDC-I	LDC-II	World	Dc	LDC-I	LDC-II	
P_3	6 632	1 514	895	4 223	11 299	8 688	1 373	1 238	1 704	5 739	1 534	293	13 346
P_1	6 494	1 375	895	4 223	10 970	8 379	1 373	1 218	1 689	6 093	1 534	288	13 321
P_5	6 248	1 435	844	3 969	11 030	8 487	1 326	1 217	1 765	5 914	1 571	307	13 323
P_2	5 983	1 514	777	3 693	11 161	8 680	1 265	1 217	1 865	5 734	1 628	329	13 354
P_4	5 845	1 375	777	3 693	10 832	8 371	1 265	1 196	1 853	6 087	1 628	324	13 330

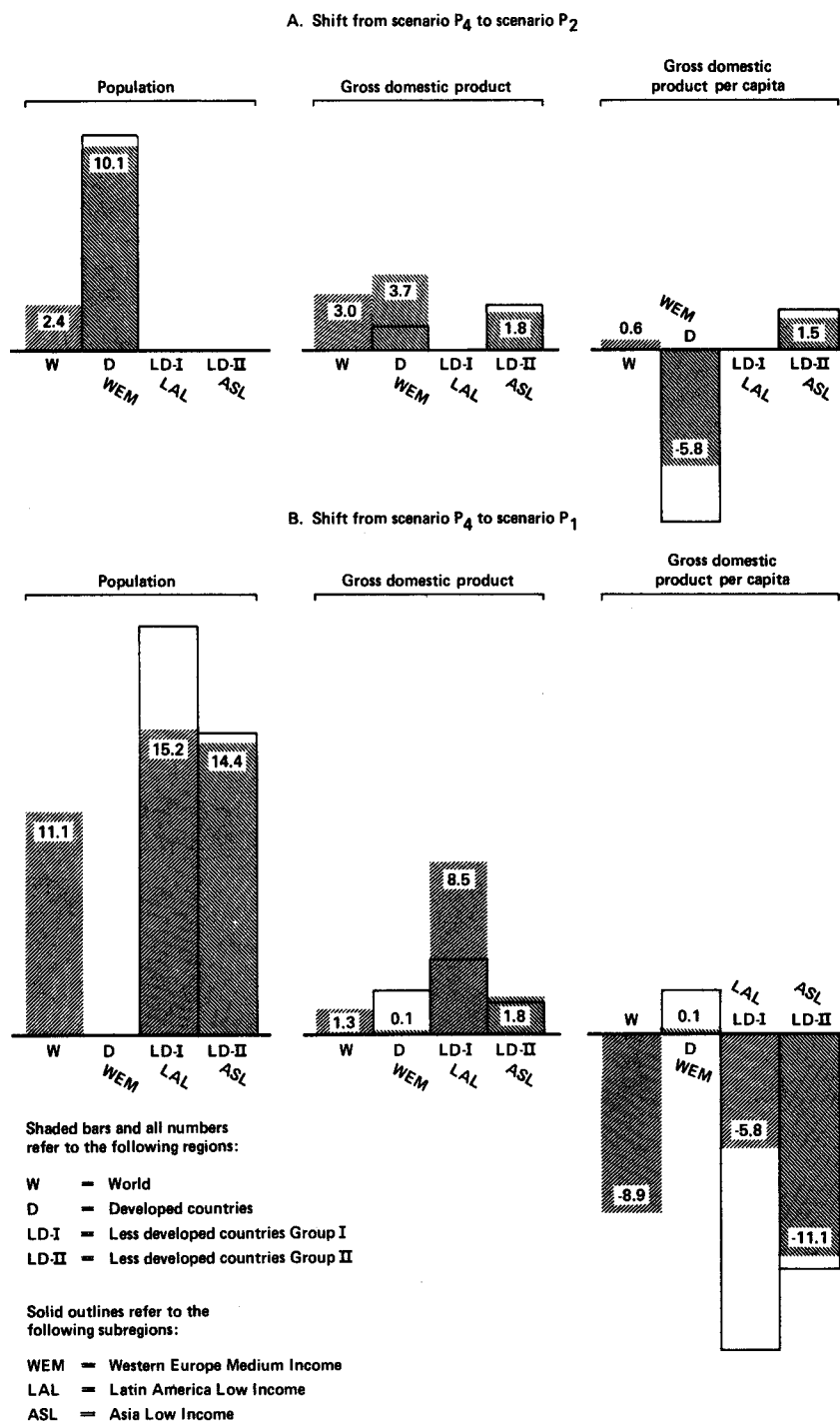
DC = Developed countries; LDC-I = Less developed countries resource rich; LDC-II = Less developed countries.

TABLE 5. PAIRED COMPARISON OF ALTERNATIVE POPULATION AND CORRESPONDING INCOME PROJECTIONS FOR THE YEAR 2000 (Percentage)

	Population				GDP				GDP per capita				GDP per unit of employed labour force			
	World	DC	LDC-I	LDC-II	World	DC	LDC-I	LDC-II	World	DC	LDC-I	LDC-II	World	DC	LDC-I	LDC-II
$\frac{P_2 - P_4}{P_4}$	2.4	10.1	—	—	3.0	3.7	—	1.8	0.6	-5.8	—	1.5	0.8	0.2	—	0.2
$\frac{P_3 - P_1}{P_1}$	2.1	10.1	—	—	3.0	3.7	—	1.6	0.9	-5.8	—	1.7	0.8	0.2	-0.3	-0.1
$\frac{P_1 - P_4}{P_4}$	11.1	—	15.2	14.4	1.3	0.1	8.5	1.8	-8.9	0.1	-5.8	-11.1	-0.6	-0.1	2.0	0.7
$\frac{P_3 - P_2}{P_2}$	10.8	—	15.2	14.4	1.2	0.1	8.5	1.7	-8.6	0.1	-5.8	-10.9	-0.6	-0.1	1.6	0.4

DC = Developed countries; LDC-I = Less developed countries resource rich; LDC-II = Less developed countries resource poor.

Figure III. Alternative population and income projections for the year 2000
(Differences in percentage)



pend much less than those of other countries on the availability of capital or population growth. Hence, within the framework of our model, the future growth of their total GDP was treated as an independent variable whose future change had to be projected exogenously. That projection, as explained in annex I, incorporated a certain assumed

rate of the future growth of *per capita* GDP of the Middle Eastern oil-producing countries.

Turning to the third block of bars, we see that a shift from a "low" to "high" population level in the developed countries would lead to a substantial 5.8 per cent downward shift in their *per capita* GDP. This is a necessary

consequence of the previously observed fact that, as a rule, a rise in the population figure of a region brings about a less than proportional increase in its total GDP. Examining the entries in the last column of table 4 we find that, as could have been expected, the GDP produced per unit of the labour force (which constitutes only a part of the total population) changes very little from P_4 to P_2 . Hence, the reduction in the per capita GDP of the developed countries, brought about by the shift in the projected population level of these areas from "low" to "high", seems to be due primarily to a change in the demographic structure—a change that makes the (fully employed) labour force expand proportionally less than the total population.

Since in the transition from P_4 to P_2 the projected population level of both less developed regions stays the same, the spill-over effect of the rise in GDP of the developed countries is not diluted and, consequently, is translated directly into a proportional rise in *per capita* GDP of the resource-poor developing countries. For reasons explained above, *per capita* GDP of the resource-rich developing countries does not change.

Disregarding regional distinctions and considering the effects of a 10.1 per cent upward shift in the projected population level of the developed countries on the world economy as a whole, we find that while the global population level goes up by 2.4 per cent world-wide GDP rises by 3.0 per cent and the corresponding average *per capita* income by 0.6 per cent.

Figure III.B depicts the economic implications of the demographic shift from P_4 to P_1 . The shift presented by the first group of bars consists of a substantial increase in the projected population level of both sets of the less developed countries from "low" to "high", with the population projection for the developed countries remaining "low".

In world-wide terms, an 11.1 per cent increase in the total population figure would be accompanied by a modest 1.3 per cent rise in global GDP and, consequently, a substantial 8.9 per cent reduction in average global *per capita* income. The *per capita* income of the resource-poor LDC would drop by 11.1 per cent while that of the resource-rich LDC would drop by 5.8 per cent, despite the fact that their total income would go up by 8.5 per cent and 1.8 per cent, respectively. A minuscule spill-over effect can be observed in the developed countries: since their population level remains the same, *per capita* GDP rises by 0.1 per cent.

Under the surface of the broad aggregative shifts described above lie changes in the levels of thousands of different but mutually interrelated economic activities. These have actually been traced in our multiregional, multisectoral projections. Two samples of such detailed projections are presented below.

As an example of finer regional breakdowns, the bars with solid outlines superimposed on figures III.A and B over the striped bars—on which we centred the reader's attention up to now—describe the effects of the same basic demographic shift on three subregions, each belonging to a different large region.

"Western Europe, medium income" was selected for this purpose among the eight subregions of the developed countries block (see table 1), "Asia, medium/low" among the four subregions belonging to the resource-poor less developed countries block and "Latin America, low income" as one of the three components of the resource-rich less developed group. To avoid overcrowding, numbers are entered describing the heights of the solid blocks.

Examining these diagrams we find that, in general, the population figures, the total GDP and the *per capita* GDP of these particular subregions tend to move in the same direction as the corresponding total regional figures, but in a different proportion.

As an example of an analysis involving sectoral disaggregation, figures IV.A and B depict the effects of the same two basic sets of population shifts (one from scenario P_4 to P_2 and another from P_4 to P_1) on the output of two particular industries: metals processing and textiles.

The method of graphic presentation is the same as that explained above. The left-hand block of bars simply provides a concise picture of the particular combination of demographic shifts, the economic implications of which are depicted in the second and third blocks. One of these describes changes in the output levels of the metals processing industries and the other those of the textiles industry.

In each instance, the first of the striped bars refers to global output, the second to output in the developed countries, and the two others in the resource-rich and the resource-poor developing countries. For purposes of reference, the corresponding changes in the global and the regional GDP are entered, in each instance, in solid outlines. These are, of course, identical with those of the striped bars describing the same changes on figures III.A and B.

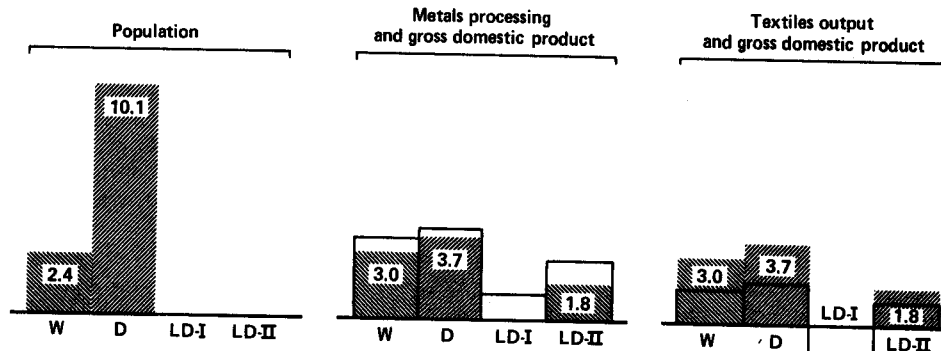
Without entering into a detailed interpretation of these figures, one can observe that an upward shift in the projected population level in the developed countries (fig. IV.A) causes the metal industry in those countries to expand more, but the textiles industry less, than their total GDP. An opposite relationship between population levels and the two industrial outputs can be observed in the resource-poor less developed countries. A higher population level in the developed countries causes the metal processing industry in both groups of developing countries to expand relatively more, and the textile output relatively less, than their GDP. It is also interesting to note that a sharp rise in the population level in the less developed areas brings about, in the developed areas, a greater expansion of the metal processing industry than the textiles industry. Checking with the computer printout of the corresponding projection of exports from developed countries, we found, as should have been expected, a percentage rise in the exports of metal products four times as large as in those of textiles.

Turning to the larger, over-all picture, let us examine the growth prospects of the world economy in the light of various combinations of alternative assumptions concerning population trends in the developed countries and the two groups of less developed countries.

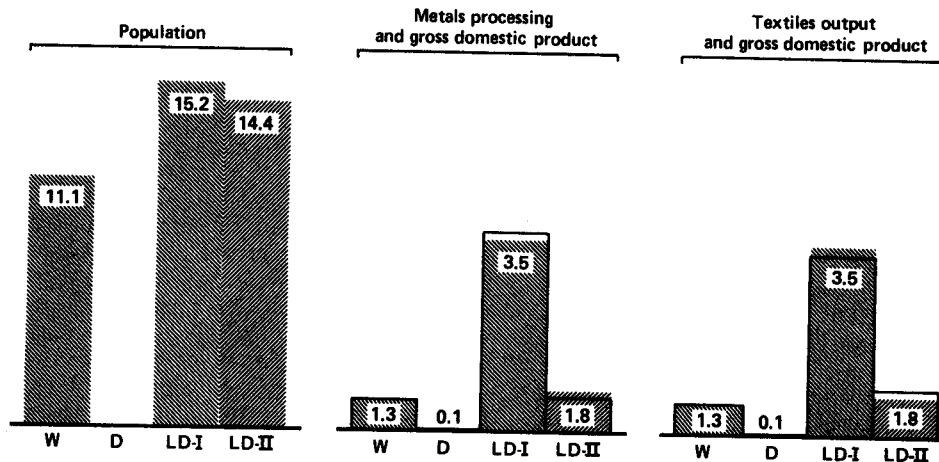
A comparison of prospective growth rates from 1970 to 2000 of the *per capita* GDP in the three groups of countries under each of the five different scenarios is presented on table 6. The figure 1.85 entered on the left-hand side of the top row means that according to scenario P_1 (where population growth is "low" in the developed countries and "high" in both groups of less developed countries), the global *per capita* income projected for the year 2000 is 1.85 times higher than it was in the year 1970. The number in parentheses (5) entered to the right of that figure means that if all entries in that row were arranged in order of their decreasing magnitudes, 1.85 would occupy the fifth, i.e., the lowest position. In other words, the average growth rate of *per capita* income in the world under scenario P_1 is lower than under any other scenario.

Figure IV. Alternative projections of population and selected industrial outputs in the year 2000
(Differences in percentage)

A. Shift from scenario P₄ to scenario P₂



B. Shift from scenario P₄ to scenario P₁



Shaded bars and all numbers refer to the following regions:

- W = World
- D = Developed countries
- LD-I = Less developed countries Group I
- LD-II = Less developed countries Group II

Solid outlines refer to metals processing and textiles output, respectively.

The highest average rate of growth of *per capita* income for the world economy as a whole is attained under scenario P₄, characterized by a low rate of population growth in both the developed and the less developed countries. The developed countries, taken by themselves, fare best under scenario P₁. Both groups of the less developed countries, however, fare worse under this scenario than under any others.

The resource-rich less developed countries (LDC-I), whose *per capita* income promises, under any conditions, to rise much faster than that of any other group, does best under scenario P₅, i.e., the medium rate of population growth in all parts of the world.

In contrast with the developed countries, the less developed countries belonging to the resource-poor group (LDC-II) show the greatest growth in *per capita* income

TABLE 6. AVERAGE GROWTH RATES OF *per capita* GDP 1970-2000^a UNDER ALTERNATIVE COMBINATIONS OF ASSUMPTIONS CONCERNING FUTURE POPULATION GROWTH

Scenario	Population growth (1)	World (2)	Developed countries (3)	Less developed countries I—resource rich (4)	Less developed countries II—resource poor (5)	Column 5 Column 3 (6)
P ₁	DC Low LDC High	1.85 (5)	2.45 (1)	5.47 (5)	1.56 (5)	0.64 (5)
P ₂	DC High LDC Low	2.04 (2)	2.27 (5)	5.81 (3)	1.78 (1)	0.78 (1)
P ₃	DC High LDC High	1.86 (4)	2.27 (4)	5.48 (4)	1.58 (4)	0.70 (4)
P ₄	DC Low LDC Low	2.25 (1)	2.40 (2)	5.81 (2)	1.75 (2)	0.73 (2)
P ₅	DC Medium LDC Medium	1.95 (3)	2.33 (3)	6.32 (1)	1.66 (3)	0.71 (3)

^a Each entry represents a ratio of the *per capita* GDP projected for the year 2000 and the actual *per capita* GDP in the year 1970. Each number in parentheses indicates what place that entry occupies when all five figures entered in that column are arranged in the order of decreasing magnitudes.

under scenario P₂ when their own population increases slowly while that of the developed countries grows fast.

The divergent economic effects of alternative combinations of rates of population growth projected for different regions provide an interesting point of departure for a critical examination of the concept of optimal population and the related concept of an optimal rate of population growth. Here, as in many other instances, the attempt to use the notion of optimality in dealing with some particular aspect of social welfare is frustrated by the necessity to reconcile it with the existence of conflicting interests.

So far as the question of closing or even significantly reducing the income gap between the resource-poor less developed and the developed countries is concerned, the picture emerging from these figures is not encouraging.

The entries in the right-hand column of table 6 are ratios of the average growth rate of *per capita* income of the resource-poor less developed countries to the average growth rate of *per capita* income of the developed countries, both projected on the basis of the same scenario. All of these ratios are less than 1; in no case is there a tendency to-

wards narrowing the income gap over the time interval 1970-2000.⁵

Turning back to figure II with the three groups of curves tracing the growth of *per capita* income from 1970 to 2000 through 1980 and 1990, we note, however, a slowdown in the rate of growth in the developed and the less developed resource-rich countries and marked acceleration of the rate of growth in the less developed resource-poor areas. This implies that in the last of the three decades spanned by these projections the gap would indeed begin to diminish.

⁵ As explained in the introductory part of this paper, the A version of the world model used in all of the projections presented in it is essentially pessimistic: it incorporates the assumption that the balance of trade of the less developed resource-poor countries will, for some time to come, be subjected to the same structural, in this case essentially institutional, restriction that prevails under the present "old economic order". According to *The Future of the World Economy* and the not yet published "Preliminary United Nations Study of World-wide Economic and Social Implications of a Limitation on Military Spending", should these developing areas be able to sustain and absorb a much larger and steadily rising import surplus, the pace of their economic growth could be accelerated greatly.

ANNEX I

Alternative Scenarios

Variable	Scenario					
	P ₁	P ₂	P ₃	P ₄	P ₅	A ^a
GDP	Middle East: Adjusted to same GDP <i>per capita</i> as in scenario A Other: Endogenous					Middle East: B ^b Others: Endogenous
Employment	DC: ILO/L Others: Endogenous	DC: ILO/H Others: Endogenous	DC: ILO/H Others: Endogenous	DC: ILO/L Others: Endogenous	DC: ILO/M Others: Endogenous	DC: Equal to estimated labour force. Others: Endogenous
Investment	LDC-I (excluding Middle East) and centrally planned Asia: limited by borrowing and saving Others: Endogenous					
Balance of payments	LDC-II (excluding centrally planned Asia): set equal to zero Others: Endogenous					
Foreign trade	Import and export share coefficients change with regional total <i>per capita</i> income					
Population	DC: Low LDC: High	DC: High LDC: Low	High	Low	Medium	B ^b

^a The A scenario is taken from *The Future of the World Economy*. While not discussed in this paper, it is included here for purposes of comparison.

^b The letter B represents both the GDP and the population levels used in the A scenario: these correspond to medium estimates based on published United Nations data. The A scenario uses medium ILO labour force estimates which appear in International Labour Office, *Labour*

Force Estimates, 1960-1985 (Geneva). ILO/L, ILO/M and ILO/H correspond, respectively, to low, medium and high population estimates taken from the updated ILO document *Labour Force Estimates, 1950-2000*, 2nd ed. (Geneva, 1977). The low, medium and high population estimates used in scenarios P₁ through P₅ are taken from *World Population Prospects as Assessed in 1973* (United Nations publication, Sales No. E.76.XIII.4).

ANNEX II

Scenario P₅ (Medium Projections of Population Growth for All Regions) (continued)

	World				Developed Countries				Developing—Group I				Developing—Group II			
	1970	1980	1990	2000	1970	1980	1990	2000	1970	1980	1990	2000	1970	1980	1990	2000
<i>Exports</i>																
Livestock	9.7	12.5	16.6	20.8	8.6	10.9	14.5	18.2	0.2	0.2	0.2	0.3	0.4	0.9	1.4	2.3
High protein crops	25.1	33.5	48.1	62.1	18.8	26.6	38.2	49.3	2.8	2.9	4.2	5.4	5.4	3.5	4.0	7.4
Grains	103.3	126.3	185.5	251.6	88.5	108.8	159.9	216.8	1.1	1.0	1.5	2.1	2.1	13.7	16.4	32.7
Roots	13.2	15.0	18.9	22.8	10.9	12.3	15.6	18.8	0.7	0.8	1.1	1.3	1.3	1.6	1.8	2.7
Other agriculture	27.6	30.8	36.0	52.9	14.2	15.9	18.6	27.3	5.2	5.8	6.7	9.9	9.9	8.2	9.1	15.7
Food processing	13.1	15.8	20.6	30.3	9.5	11.5	15.1	22.0	1.0	1.2	1.5	2.3	2.3	2.6	3.1	6.0
Textiles, apparel	23.5	51.8	107.8	208.8	19.3	43.1	89.0	166.3	0.3	0.3	0.9	2.5	6.6	3.9	7.8	35.9
Wood and cork	4.8	9.0	17.4	26.4	4.1	7.8	14.8	21.9	0.2	0.3	0.6	1.2	1.2	0.6	1.0	3.4
Furniture, fixtures	1.5	2.6	2.9	4.2	1.5	2.6	2.8	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Paper	8.4	17.8	38.4	68.9	8.3	17.5	37.5	66.1	0.0	0.1	0.2	0.6	0.6	0.1	0.3	0.7
Printing	1.9	4.2	9.8	17.9	1.8	4.0	9.3	16.8	0.0	0.0	0.1	0.1	0.2	0.1	0.2	2.1
Rubber	2.1	4.0	8.7	17.1	2.0	3.8	8.3	16.0	0.0	0.0	0.1	0.4	0.4	0.1	0.2	1.0
Industrial chem.	15.2	25.2	44.3	71.3	14.8	24.6	42.9	67.6	0.1	0.1	0.3	0.7	0.7	0.3	0.5	3.1
Fertilizers	6.6	11.6	23.3	34.8	6.0	10.5	20.8	29.9	0.2	0.3	1.0	1.0	2.1	0.5	0.8	2.8
Other chemicals	6.9	13.7	28.1	51.3	6.5	13.0	26.4	47.4	0.1	0.2	0.5	1.2	1.2	0.3	0.6	2.7
Cement	0.3	0.6	1.4	3.6	0.2	0.4	1.0	2.3	0.0	0.1	0.3	0.8	0.8	0.0	0.1	0.5
Glass	3.9	8.7	20.6	36.3	3.8	8.4	19.8	34.6	0.0	0.1	0.2	0.4	0.4	0.1	0.2	1.3
Motor vehicles	27.1	42.2	83.3	141.5	26.9	41.8	82.2	138.2	0.0	0.0	0.1	0.2	0.7	0.2	0.3	2.6
Other transp. eq.	4.9	7.2	12.1	19.1	4.9	7.1	12.0	18.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Aircraft	5.6	9.2	17.4	25.9	5.6	9.1	17.2	25.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
Metal products	7.7	12.0	19.6	26.6	7.4	11.5	18.8	25.1	0.0	0.1	0.1	0.3	0.3	0.3	0.4	1.3
Machinery	35.9	60.2	112.1	180.7	35.6	59.6	110.6	176.2	0.0	0.0	0.1	0.2	0.5	0.3	0.5	4.0
Electrical mach.	17.0	33.0	67.8	125.7	16.4	32.0	65.7	121.0	0.0	0.1	0.2	0.5	0.5	0.5	0.9	4.3
Instruments	6.2	10.9	21.5	35.0	6.1	10.8	21.2	34.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.7
Other manufactures	8.7	13.9	22.9	34.5	7.0	11.5	19.0	28.0	0.3	0.4	0.5	0.8	0.8	1.4	2.0	5.7
Services	20.0	28.8	43.5	58.7	16.9	24.3	36.8	49.6	0.8	1.2	1.8	2.5	2.5	2.3	3.2	6.6
Transport	27.0	41.9	71.7	106.7	24.3	37.8	64.6	96.1	1.1	1.1	1.7	2.9	4.3	1.6	2.4	6.2
Aid inflow	27.4	41.4	66.1	97.6	15.2	22.3	35.7	54.6	3.2	5.1	8.1	11.4	11.4	8.9	14.0	31.6
Capital inflow	26.9	45.3	86.1	125.7	21.9	32.0	55.3	83.3	1.9	9.8	25.2	59.1	59.1	3.2	3.5	8.3

INTERNAL MIGRATION IN THE PHILIPPINES DURING THE 1960s

*René Wéry**

SUMMARY

This paper presents a regression analysis describing some of the determinants of various types of migratory flows between and within urban and rural areas in the Philippines during the 1960s. The National Household Survey carried out in 1968 provided the data basis which dealt mainly with fertility and labour force and which could have limited the range of migration determinants studies. The individual characteristics of migrants are analysed independently from the effects of macro-economic variables, in consideration of the estimation problems raised if both were combined into a single equation model. Migrants, especially rural migrants, are often single, rather young and more educated than the average population at the point of origin. Their inactivity before migration is significant only in explaining their probability to migrate. Wage-workers appear to be more mobile than self-account workers. The specificity is emphasized of the sizable migratory flows towards rural areas due to policies of land extension and support by the Government. The survey design permits the creation of only a few macro variables (average income differentials, income distribution, industrial structure). The results show a predominance of push factors over pull factors. Expulsion areas, whether rural or urban, are low-income areas. In the case of migration from urban origin, expulsion areas are those areas which are less modernized and where the income distribution is less unequal. The low significance of pull factors in explaining rural-to-urban migration is due to the fact that this is mainly short-distance migration, within the same province or to a nearby urban area. If the chosen destination is not the most promising, it is on the whole better than the rural area of origin; moreover, it is probably the first step of a migratory process, which becomes more selective as the migration takes place out of urban areas.

INTRODUCTION

Rural-urban migration is one of the most remarkable phenomena of the economic development process. Taking into account only the demographic component of migration,¹ the importance of rural-urban migration stems from the numerous economic and social implications it has for the areas of origin and destination. These effects may be beneficial or unfavourable depending on whether they soften or accentuate already existing disequilibria. On the other hand, migration is brought about by many of the same economic and social factors.

The present paper is limited to an examination of the possible determinants of internal migration in a specific case, the Philippines in the 1960s. However, one objective of this analysis is to provide a migration function or model, compatible with the requirements of a larger and rather complex demo-economic model, which permits an estimation to be made of the consequences of migration at

the origin and at the destination.² This is important to the understanding of the specification of the migration function which is discussed in the section below. In the following section, dependent and explanatory variables are defined. A brief discussion of the magnitude of the flows concerned is also found in that section. The results of a regression analysis are discussed in the third section.

I. MODEL DEFINITION

An explanatory model of migration must highlight the economic and other causes of population movements and, if it is used in a disaggregated and global model, it should be so without loss of information on the structure of the model, in respect of the sex, age and educational level of the migrants. Theoretically, such an objective can be reached by studying the migration process within the framework of a model describing all the elements of the behaviour of a household with regard to demographic and economic events, including the decision to migrate. However, the analysis of individual observations raises problems which have led to the specification of two migration

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¹ Manpower transfer from low labour productivity to high productivity sectors, which at least covers agricultural out-migration, is one of the key elements of the development process of a dualistic economy.

² See G. B. Rodgers, M. J. D. Hopkins and R. Wéry, *Population, Employment and Inequality: BACHUE-Philippines* (Farnborough, Saxon House, 1978).

functions. When considering the influence of income differentials as determinants of the decision to migrate, income at the origin and income in all possible destinations are relevant. Income at the destination is the income the migrant can expect to receive, i.e., the average income corresponding, on the one hand, to his educational level, age and other individual characteristics, and, on the other, to the actual labour market situation and structure, such as the unemployment level and the degree of dualism. A preliminary analysis of data on income at the origin has shown that in the Philippine case most future migrants have no income either because they are unemployed or because they are unpaid family workers. So, not to bias the analysis, the income at the origin should also be measured as the average income the migrant could naturally attain. To retain consistency between the measurement of the dependent and the explanatory variables, the latter are normally computed on aggregated data. The dependent variable has then to be defined as the propensity to migrate from region i to region j , which we compute as the ratio of the number of migrants between the two regions divided by the total population in region i .

The introduction in such a model of specific characteristics of the migrants—such as age and educational level—which are required by the specification of a complete demographic accounting and which also influence the propensity to migrate, raises estimation problems. Let us consider the migration propensity M_{ij} , function of income differentials (Y_i, Y_j), and of age A_i , the influence of which is *a priori* non-linear. With a specification allowing for testing the non-linearity of the age, $M_{ij} = F(\bar{Y}_i, \bar{Y}_j, A_{i1}, A_{i2}, A_{i3})$ with A_{i1} , the percentage of population in the age group 1, the coefficients of the A variables can take any value, quite often changing sign as the A_i variables are linked by an obvious relationship. If age is not broken down into a series of percentages and the non-linearity is approximated by power terms, results for extreme values of the explanatory variables can be erroneous. A series of migration propensities could be computed controlling for all the micro variables, the influence of which is *a priori* non-linear. However, even with a large sample survey, the number of missing cases normally becomes large, which again biases results.

We thus avoided the difficulty by specifying two migration functions, one micro, dealing with individual observations and individual characteristics, and one macro, using aggregated data. The dependent variables differ from one function to another.

II. DATA AND VARIABLES DEFINITION

The data source of the analysis is the 1968 National Demographic Survey which was carried out jointly by the Population Institute of the University of the Philippines and the Bureau of the Census and Statistics. The main elements of this survey, which covered almost 10,000 households, were fertility and labour force. Migration was a secondary variable, although the information collected was substantial.

1. Dependent variables

1.1 Definition

The survey gives for all married women in 1968 their "place of residence" at this date, as well as in 1965 and

1960.³ Married women interviewed were also asked the same question with regard to their husbands. This information has been used to define the dependent variable in both the micro and macro models.

(a) Micro analysis

A series of variables measuring migration results from a breakdown of sample population by sex, urban and rural residence, in 1968, 1965 and 1960. We define a variable equal to unity if the residence, either urban or rural, in 1968 was different from the residence in 1965 or 1960, and equal to zero if the same. The subsamples thus distinguish the sex, the direction of migration (rural-urban and vice versa, from a rural residence to another rural residence, and from an urban to another urban residence) for the period (1960-1968, 1965-1968).⁴ As defined, the variable measured the probability to migrate of a given sub-population.

(b) Macro analysis

In the macro analysis, the dependent variable is the propensity to migrate from a rural-urban residence i to a rural-urban residence j , computed as the number of migrants coming from i and having migrated to j at the end of the period, divided by the total population in i . Four types of flows are thus identified: from rural to urban, from urban to rural areas, within urban areas and within rural areas. The sex is a supplementary criterion in each case. The whole matrix is about $200j \times 200$ where rows indicate the destination and columns the origin. Non-migrants are located on the main diagonal; the sum of a column gives the total population, the denominator of the dependent variables.⁵

1.2 Magnitude of migratory flows

The rate of net migration between rural and urban areas, which is computed with the probability of migration (micro specification) and official population, is only about .3 per cent a year, a very low rate by international standards. This low rate of net migration results from a gross rate of rural-to-urban migration of around 1 per cent a year, but it is compensated by a very high rate of urban-to-rural migration. This flow has been quite exceptional and can be attributed largely to the extension of arable land, including the opening of new lands in sparsely populated islands, supported by government policies.⁶

Nevertheless, the net rate of migration derived from the survey appears to be underestimated. The population censuses unfortunately do not provide a direct estimation of urban-to-rural migration. According to the 1970 Popula-

³ The "place of residence" corresponds to a rather administrative subdivision of the Philippines into regions with an area equal to or less than that of a province (there are about 60 provinces in the Philippines). In almost each place of residence rural and urban areas are distinguished according to socio-demographic criteria used in the 1970 Population Census. The same criteria are applied to the three years considered in the survey.

⁴ In doing this, the number of observations for each case is inferior to the total number of observations. Indeed, for migration from rural areas to urban areas, the sample excludes persons living in 1960 (or 1965) in an urban area and all intra-rural migrants.

⁵ In order to measure correctly the propensity to migrate, it is necessary to make the assumption that the mortality of migrants out of residence i is the same as that of population still living there.

⁶ Total area planted increased by 37 per cent between 1955 and 1968, the largest increase having taken place during the 1950s.

tion Census,⁷ 16 per cent of the 1970 population over 10 years was living in 1960 in another municipality or province. For 23 per cent of the 1970 urban population it was not possible to identify either rural or urban origin. But 13 per cent of the 1970 rural population had moved during the intercensal period. The rate of urbanization also implies that net rural-to-urban migration must have grown faster. Over-all population growth amounted to 35 per cent during the 1960-1970 period, urban population, 48 per cent, and rural population, 30 per cent⁸ whereas the natural rate of increase could surely not have been faster in urban areas than in rural areas.⁹

Lastly, there are several good reasons for the net migration rate, as computed, being underestimated, the main ones being an identical weighting of all urban or rural areas, whereas migration destinations and origins are specific, and the sample consists only of married women.

2. Explanatory variables

(a) Micro analysis

Variables considered as relevant in explaining the probability of an individual to migrate, and which are available in the survey, are age, economic activity, occupation, employment status (wage-earner or other), marital status and educational level. All of these are available for the three periods. Similar information on respondent's father at age 40 was also available but only the occupation and employment status have been retained.

In the regression analysis all the discrete variables have been transformed into a series of dummy variables having a value equal to unity for a given value of the variable considered, and zero in all other cases. Certain aggregations have been performed (see table 1).

Hypotheses tested in the regression analysis are discussed more thoroughly below. Briefly, a young migrant is more adaptable to new conditions than an older person. Migration cost, however defined, is less for a single person than for married persons; a wage-earner is more mobile than a dependant, particularly if the latter is in an agricultural activity. Education eases the adaptation to a new environment and, moreover, the marginal income of high education is low if the resulting qualification does not correspond to the labour market situation. Non-economic activity results, in certain cases, in the impossibility of finding a job; respondent's occupation, given a certain education, can also be seen as a measure of tension in the labour market. The influence of father's occupation and employment status would mainly result from the existence of a farm where children work and which they would eventually inherit.

(b) Macro analysis

Explanatory variables in the macro analysis represent some push factors in the areas of origin, and pull factors at the destinations. All these variables are taken from the survey for 1968. It is thus necessary to hypothesize that migration has not influenced them; for example, that a flow of migrants towards a region has not pushed wages down

or that it has been absorbed mainly in traditional activities. This assumption obviously contradicts the consequences of migration and causes pull factors to be underestimated, whereas it overestimates push factors. However, as net migration flows have been relatively low during the period covered, the resulting bias of coefficients can be thought to be not too large.

The main variables considered represent income differences and expectations, types of possible jobs, and the "cost" of migration. The significance of some other variables representing attraction to the city and existing facilities has also been tested. The main ones are school infrastructure, water supply, electrification. All these variables have been calculated by selecting a subpopulation in a region and computing the average on all the available observations.

The computation of average incomes at the origin and destination distinguishes the sex. This rests on the hypothesis that most migrants are active or potentially active, and that sex discrimination exists, which is acknowledged by the migrants. To some extent, this hypothesis is validated by the labour division, and, in the present case, by the high participation of Filipino women in economic activities. An empirical test has not yet been performed. The computation of average income also distinguishes between wages only and all sorts of incomes (wages, non-wage incomes etc.), under the hypothesis that the average wage would be a more tangible measure of the expected earnings.

Besides the average income (wages or any type of earnings), income expectations are also measured by the coefficient of variation on income. This variable can actually receive different meanings reflected in the sign of the coefficient. Educated migrants could prefer urban areas where, everything else being equal, income distribution is unequal because they are attracted by the possibility of finding a job at the highest income level. On the contrary, an unequal distribution of income indicates high unemployment and underemployment levels and a dualistic labour market; such a situation can deter potential migrants, particularly the less educated who are more likely to be directly concerned by it.

Labour market conditions are also described more directly by the percentage of modern jobs, and, in order to have some dynamic element, by the proportion of new entrants in the labour market absorbed in the modern sector.¹⁰

The migration process involves economic and psychological costs. To represent such costs we have defined two variables: the first is the distance between origin and destination places of residence. This measure is rather crude for the Philippines since it is taken "as the crow flies" over numerous mountainous islands. The second variable is a dummy, equal to unity if migration has not involved a change of residence but only the going from a rural to an urban zone, or the inverse. Distance is nil in this case. Ethnic characteristics (languages and dialects, which are numerous in the Philippines, tribe) which became significant in explaining the destination of migration in other

⁷ Philippines, National Census and Statistics Office, *1970 Census of Population and Housing*: vol. II. *National Summary* (Manila, 1974).

⁸ T. A. Mijares and F. V. Nazaret, *The Growth of Urban Population in the Philippines and its Perspective: Technical Paper No. 5* (Manila, Bureau of the Census and Statistics, 1973).

⁹ G. B. Rodgers and others, *op. cit.*

¹⁰ This latter variable, in the destination areas, has never had the expected possible sign, possibly due to being measured *ex post*. All the other variables are stocks whereas this flow has reason to be much more influenced by the arrival of new entrants into the labour market. The negative sign obtained actually reflects that the variable measures more a consequence of migration than a determinant.

TABLE I. MICRO ANALYSIS
A. Male migration
(F variables in parentheses)

Variables	Rural-urban		Rural-urban		Rural-urban		Rural-urban	
	1960-1968	1965-1968	1960-1968	1965-1968	1960-1968	1965-1968	1960-1968	1965-1968
N	3 369	3 342	2 737	2 938	3 237	3 272	2 865	2 976
R ²	.114	.060	.010	.013	.015	.009	.039	.033
F	30.8	13.3	2.8	4.6	4.8	3.0	9.7	7.5
Constant	.256	.125	.027	-.028	.046	-.029	.112	.046
Age	-.001	-.001	-.000	.000	-.001	.000	-.002	-.001
	(1.6)	(1.5)	(.3)	(.2)	(1.6)	(.3)	(1.5)	(.5)
1/Age	-1.382	-.805	.172	.873	-.182	.573	-1.411	-.209
	(1.0)	(.8)	(.0)	(2.0)	(.0)	(.2)	(.8)	(.1)
Educ 1	.017	.009	-.004	.010	-.006	-.002	-.001	.002
	(2.4)	(1.3)	(.2)	(2.6)	(.6)	(.3)	(.0)	(.0)
Educ 2	-.004	-.012	-.006	.007	.016	.014	-.031	-.007
	(.0)	(.8)	(.3)	(1.4)	(1.6)	(4.7)	(4.0)	(.5)
Educ 3	.047	.036	-.007	-.012	-.012	-.008	.035	.006
	(18.3)	(10.3)	(.6)	(4.0)	(1.3)	(2.2)	(5.7)	(.1)
Educ 4	.178	.053	-.012	-.001	-.014	.001	.060	.030
	(99.4)	(10.4)	(2.0)	(.0)	(1.0)	(.1)	(15.3)	(8.8)
Work	-.179	-.145	.011	.006	.017	.011	.014	-.012
	(100.3)	(27.3)	(1.1)	(.2)	(2.1)	(2.1)	(.7)	(1.7)
Single	.049	.113	.017	.020	.022	.011	.046	.066
	(12.6)	(52.5)	(3.1)	(4.9)	(6.3)	(2.3)	(8.6)	(26.4)
Occ 1		.043					.034	-.014
		(4.4)					(3.8)	(1.7)
Occ 2								-.032
								(6.7)
Occ 4	.060	.024						
	(17.5)	(5.4)						
Occ 5	.195	.080	.014	.005				.018
	(71.9)	(29.7)	(2.3)	(.7)				(4.2)
Occ 6	.048	.034					-.038	
	(8.4)	(8.3)					(6.6)	
Wage	.014	.008						
	(3.0)	(9.8)						
Self		.001			-.012	-.006	-.024	-.008
		(4.1)			(5.2)	(5.6)	(4.9)	(1.4)
FFarm	.068	.013	.017	.005	-.010	-.004		
	(3.7)	(4.4)	(4.7)	(1.6)	(3.2)	(2.2)		
FWage		-.011						
		(3.4)						
FOcc 1							.049	.013
							(9.3)	(1.8)

Key.
N : number of observations
R² : coefficient of determination
F : over-all F variable (measuring better than R² the effect of the fit on individual observations)
Educ 1 = 1 : primary completed
Educ 2 = 1 : secondary not completed
Educ 3 = 1 : secondary completed or not
Educ 4 = 1 : any tertiary (the missing class corresponds to less than primary completed)
Work = 1 : respondent was economically active
Single = 1 : respondent was single
Occ 1 = 1 : professional
Occ 2 = 1 : employee

Occ 4 = 1 : skilled worker
Occ 5 = 1 : transport worker
Occ 6 = 1 : services and unskilled worker
Wage = 1 : wage-earner
Self = 1 : self-account worker (including family worker)
FFarm = 1 : father was an agriculturalist
FWage = 1 : father was a wage-earner
FOcc 1 = 1 : ch Occ 1 for the father

N.B.: 1. All variables concern, for the respondent, the year 1960 or 1965 (except Age and Farm for the woman) and for the father when he was 40.
2. The number of valid cases can be very small for certain variables (e.g., Educ 4, certain occupations) or very large (work is about .9 for males).

studies, are not considered in the present analysis, but these two variables approximate them.

When a household migrates, education facilities can be taken into account; they are measured by the enrolment rate in secondary schools. Primary schooling is quite general in the Philippines, although secondary infrastructure is much less developed, at least in rural areas, in spite of schools in *barrios* (villages). Note, however, that the aver-

age enrolment rate is an imperfect measure of education supply as demand also determines enrolment¹¹ and that the average in a region (place of residence) can hide large intra-regional disparities.

¹¹ See R. Wéry, *The Demand for Education in the Philippines*, Population and Employment Working Paper No. 51 (Geneva, International Labour Office, March 1977).

B. Female migration
(F variables in parentheses)

Variables	Rural-urban		Urban-rural		Rural-rural		Urban-urban	
	1960-1968	1965-1968	1960-1968	1965-1968	1960-1968	1965-1968	1960-1968	1965-1968
N	3 847	3 808	3 223	3 469	3 682		3 176	3 426
R ²	.106	.064	.040	.020	.014		.027	.024
F	45.8	25.8	11.6	7.0	6.3		8.0	8.4
Constant	-.009	-.062	-.099	-.057	.012		.003	-.057
Age	.001 (1.2)	.001 (5.1)	-.001 (.6)	.001 (1.8)	-.000 (.1)		-.000 (.1)	.001 (2.3)
1/Age	1.585 (1.5)	1.838 (5.2)	-1.122 (.6)	1.779 (5.2)	.572 (.4)		.724 (.6)	1.521 (7.7)
Educ 1	.038 (5.2)	-.009 (.6)	.008 (.3)	-.002 (.1)	-.004 (.1)		-.004 (.2)	-.010 (2.9)
Educ 2	.091 (14.5)	.045 (7.4)	.004 (.1)	-.009 (.0)	-.010 (.3)		.007 (.4)	-.017 (6.3)
Educ 3	.058 (28.7)	.034 (20.0)	.014 (1.2)	.003 (.2)	.007 (1.1)		-.009 (1.2)	.007 (1.6)
Educ 4	.114 (24.0)	.059 (13.4)	.063 (13.8)	.021 (5.0)	.020 (1.5)		-.001 (.0)	-.009 (2.1)
Work	-.013 (2.6)	-.013 (6.0)	-.023 (2.3)	-.011 (3.0)	-.005 (.9)		.014 (3.6)	.013 (7.6)
Single	.60 (18.7)	.097 (41.4)	.072 (21.6)	.049 (15.1)	.024 (6.7)		.026 (7.2)	.034 (14.2)
Farm	-.082 (108.4)	-.037 (44.8)	-.031 (5.6)	-.011 (2.1)			.043 (29.7)	.011 (4.0)
	.104 ¹ (13.3)	-.023 ² (1.5)	.052 ² (10.6)	.015 ⁵ (2.2)			.019 ² (3.5)	-.019 ⁷ (7.8)
			-.032 ³ (3.8)				-.018 ⁶ (3.1)	
			.027 ⁴ (2.7)					

Key:
 Educ 1 = 1 : secondary not completed
 Educ 2 = 1 : secondary completed
 Educ 3 = 1 : primary completed or more
 Educ 4 = 1 : any tertiary (the missing class corresponds to less than primary completed)
 Farm = 1 : respondent's actual household in agriculture
 (1) services, transport and unskilled worker

(2) father was a professional or employee
 (3) cf. 1 for trade
 (4) wage earner
 (5) unskilled or unskilled worker
 (6) self-account worker (including family worker)
 (7) professional

For other symbols see table 1.A.

The consumption of public utilities (water, electricity) by a household, assuming the existence of a distribution network, depends on its income. Moreover, the whole region is not necessarily linked to the network. As the average of observations in a place of residence might be an imperfect measure of supply, a series of dummies has been tested corresponding to percentage intervals chosen arbitrarily.

III. RESULTS

1. Micro analysis

Equations of the micro analysis have been estimated with ordinary least squares,¹² adding to constrained variables—age, marital status, respondent's education and activity; all the other variables are estimated in a stepped procedure. The most representative regressions are presented in tables 1.A and B, for males and females.

(a) Age exerts a non-linear influence on the probability to migrate. It is well known that the young present a higher probability to migrate because they are more adapt-

able, because discounted income over the life-time is higher. However, according to the results obtained, when variables correlated with age, education and marital status are accounted for, the peak of the age shifts to higher ages than in a bivariate analysis; its influence also lessens and is no longer even significant to explain male probability to migrate.

(b) The effect of marital status on the probability to migrate is obvious as all economic, social and psychological costs of migration are smaller for single persons than for a household. This is seen in the Philippines where the probability to migrate of single males, as well as females, is in general significantly higher than for married persons.¹³ Differences between males and females are small in comparison with those existing between the various flows and changes over time (see table 1.A). Rural-to-urban migration is mostly the decision of a single person, as it is within urban regions, though to a less extent. As to migration towards rural areas, the probability of single persons migrating does not yet differ significantly from that of married persons, at least for males. This result may be specific to the type of migration that took place in the Philip-

¹² Given the definition of the dependent variable, probit, or similar, analysis is a better econometric tool.

¹³ Tabulations, not reproduced here, show that in the Philippines married persons migrate with their family.

pines during the 1960s. A fraction of such a migration has been a sort of colonization of new lands, as mentioned earlier. It seems normal to find a good many households involved.

Changes of the coefficient of marital status over time are large. For instance, for male rural-urban migration, the 1960-1968 coefficient is about half the 1965-1968 coefficient, although with no changing pattern it should be at least double.¹⁴ Such changes, though interesting, are unfortunately impossible to explain.

(c) The influence of education on the decision to migrate is clearly non-linear. It also varies with the origin of migration. For rural-to-urban migration, the probability rises with the educational level, with a clear step between primary and secondary education. The expected income of a migrant with an education higher than that needed by rural activities is relatively higher than that of a migrant having a qualification more suitable to rural life, particularly to agricultural activities. In the case of the Philippines, secondary and higher education of a Western type would be a waste in rural areas. But education is also a psychological factor easing mobility and insertion of the individual, as the analysis of intra-regional migration shows.

The effect of education on male urban-to-rural migration, which, as mentioned, has been specific to the period considered, would pinpoint a class of migrant: persons with a relatively high educational level, yet compatible with the rural milieu.

Comparing regressions for 1960-1968 and 1965-1968, particularly for rural-urban migration, it appears that the education elasticity has decreased. This outcome might stem from the reduction of income differentials by educational level, possibly caused by the rapid progress of education in the Philippines.

(d) The absence of an economic activity, including unemployment, should be an important cause of migration, at least for those searching for jobs. According to the results obtained, it is only significant for rural-urban migration, mainly of males.¹⁵ This result, further considering that non-activity is rare in rural areas, would lead us to think that the decision to migrate, for a category of migrants at least, may already have been taken by the migrants' parents. It could happen that a household invests in the education of some children and decides to take maximum advantage of it by sending them to work in cities where education yields a higher profit. The magnitude of income transfers from urban to rural areas supports the hypothesis of investment in education.¹⁶ People in this case would then not work or be unemployed between the end of studies and migration, or still consider a temporary unpaid family job as inactivity.

(e) Stepped variables add detail to the above participation in economic activities variable. Indeed, the series of dummy variables representing various occupations and employment status in 1965 (or 1960) only take a non-nil value if the individual was actually active at that date. This

¹⁴ As the dependent variable refers either to the period 1960-1968 or 1965-1968, the coefficients have to be divided by the number of years of each to be comparable.

¹⁵ Schooling has been defined as non-activity so that this result could be attributed to the influence of scholarization, except that the same result should then be found for other types of migration.

¹⁶ G. B. Rodgers and others, *op. cit.*

explains the very high coefficients obtained, counterbalanced by the negative coefficient of the activity.¹⁷ It would be difficult to draw a definitive unambiguous conclusion from the results obtained. Assuming the coefficients are not too dependent on collinearity and on the differences in the number of observations for the various cases, the diversity of coefficients, according to the direction of the flow and to the period covered, should be interpreted in knowledge of the labour market evolution. For instance, the probability to migrate of a transport worker is high over both periods; professionals also show a higher probability—but only in the period 1965-1968.

The influence of employment status is less heterogeneous: rural wage earners, taking into account the combination between variables, would be more mobile than other workers.

(f) Results obtained with father's related variables are at first less disappointing. It could be expected that an agriculturalist's children are less mobile than those of other households. On the contrary, it is not the case for rural-to-urban migration (only for intra-rural migration is the probability to migrate of children whose father owns or rents land less than for others). Yet, outcomes can largely be explained by the educational level of the migrant.¹⁸ If this variable is excluded from the regression, which as has been seen is highly significant, expected results are then obtained: persons whose father works a farm, as well as those having this activity, show a lower probability to migrate.

(g) One variable, which is only introduced in female migration equations, is a dummy distinguishing between an agricultural and a non-agricultural household, but at the date of the survey.

This variable is highly significant in explaining rural-to-urban and urban-to-rural migration (see table I.B). In general, the explanation of female migration is inferior to male migration because economic factors have less import. The female activity rate is less than that for males, and a fraction of female migration depends on the migration of their husbands, an important factor but one not shown in the model tested. Variables related to the household and not to the woman herself can thus explain this type of migration.¹⁹ In the case of rural-to-urban migration, the variable considered only shows that agricultural households are less mobile, a result consistent with those mentioned above if various interactions, including education, are taken into account. As to urban-to-rural migration, often concerning a household, an agricultural household obviously has a higher probability to migrate and this can explain the positive sign of the variable considered.

¹⁷ Given that some variables have not been constrained, results must be interpreted taking into account that the influence of all the classes excluded, varying between regressions, are represented by the intercept.

¹⁸ R. Wéry, *op. cit.*

¹⁹ The variable considered is taken at the destination and refers to the current period. Professional and social mobility in the Philippines is low, and a migrant often takes the same occupation as before (see M. M. Bacol, "Inter-generational occupation mobility in the Philippines", *Philippine Sociological Journal*, vol. 19, No. 3-4 (Manila, 1971); R. Wéry: "Migration in the Philippines", *Population and Employment Working Paper No. 4* (Geneva, International Labour Office, March 1974)). This hypothesis would apply identically to married and single women before migration, the latter marrying someone from a milieu like that of their parents.

2. Macro analysis

The dependent variable in the macro analysis is the propensity to migrate from region i to region j , explained as a function of socio-economic characteristics in both regions. The specification retained is log-linear. Such a specification seems preferable to a linear specification because it is difficult to imagine that the elasticities with respect to the explanatory variables increase with them (*cf.* the convergence towards unity of elasticities in a linear specification).²⁰ In other words, it seems logical that the contribution of a variable to changes of the migration propensity depends on the level of the explanatory variable (derivates, in general, decreasing) and also that the substitution rate between variables is not nil.

Results in this section are marked by the collinearity between the explanatory variables and by the fact that the differences between urban and rural zones are much more pronounced than the differences within an area. Electricity and piped water are available in urban areas, almost without exception. The enrolment rate in urban secondary is always far higher than secondary in rural areas, as is the percentage of modern jobs. The interzone variance is thus much larger than the intra-zone variance; this can hide the influence that regional disparities exert on migration destinations. There exists a high relationship between average wage, income distribution and percentage of modern jobs (note that average income is far less correlated with the two other variables than the average wage). This indicates the type of dualism existing in the Philippines, but makes it more difficult to identify the earnings which the migrant expects. For both these reasons, the combination of the explanatory variables affects the value of the regression coefficients and their level of signification, and makes the precise identification of the migration causes more difficult, the most important generally annexing the contribution of "secondary" variables.

The results of a selection of ordinary least squares regressions are reproduced in table 2. A series of "primary" variables have been constrained in the specification and "secondary" variables introduced in steps. Comments below also refer to variables tested but not reproduced in these tables.

It is worth noting the differences of the correlation coefficients between the micro and the macro analyses. While in the former the coefficient of determination (R^2) is less than .1 in most cases, in the macro coefficients are frequently above .5. Such a difference can actually show that the macro specification explains the dependent variable more clearly, but by far the difference results from the aggregation of individual observations—though no direct measure has been performed as both models have a different specification.

Let the model²¹

$$Y_{ij} = x + \beta_i X_{ij} + u_{ij}$$

where i ($i = 1, \dots, m$) denotes the group and

j ($j = 1, \dots, r$) the number of observations in each group and $n = mr$ the total number of observations.

R^2 on the n observation is given by:

$$R^2 = 1 - \frac{mr \sigma_u^2}{\sum_{ij} (Y_{ij} - \bar{Y})^2}$$

with $\bar{Y} = \sum_{ij} Y_{ij} / n$.

Fitting the relation on grouped data:

$$\bar{Y}_i = \alpha + \beta \bar{X}_i + \bar{u}_i$$

where $\bar{Y}_i = \sum_{j=1}^r Y_{ij} / r$ and so on.

R^2 is given by:

$$R^2 = 1 - \frac{m \sigma_u^2}{\sum_i (\bar{Y}_i - \bar{Y})^2}$$

As $\sum_{ij} (Y_{ij} - \bar{Y})^2 = \sum_{ij} (Y_{ij} - \bar{Y}_i)^2 + r \sum_i (\bar{Y}_i - \bar{Y})^2$

the two correlation coefficients will be approximately equal if

$$\sum_{ij} (Y_{ij} - \bar{Y}_i)^2 / (mr - 1) \text{ and } r \sum_i (\bar{Y}_i - \bar{Y})^2 / (m - 1)$$

are unbiased estimates of the same variance. It follows that when the grouping maximizes the between-group variance to the detriment of the within-group variance, the R^2 on the grouped data will be substantially higher than the coefficient on individual observations.^{22, 23}

In the present case, a first increase of the coefficient simply results from the difference in the number of observations between the micro and the macro analyses (*cf.* terms m and r). In the macro analysis, the number of observations is 20 or more fewer than in the micro analysis.

Another source for the increase of the correlation coefficient would come from the population within a place of residence (urban or rural) which would be relatively homogeneous, i.e., the over-all variance is mainly accounted for by the differences between places. It is obvious that the rural-urban breakdown is a very important criterion of differentiation. Regional differences in the development process are very relevant in explaining average income, income distinction and so on, which are also accounted for with the classification by place of residence. The unit retained in the macro analysis thus responds to the condition of having a substantially higher correlation coefficient although minimizing the bias on the regression coefficients.

(a) The availability of an electricity supply does not influence the choice of a destination as it could be thought of in terms of urban-rural or rural-rural migration. The latter, however, does depend on the destination area having a piped water system.

²⁰ A linear specification, however, appears more adequate for the micro analysis. Indeed a regression analysis on dummy variables is tantamount to a variance analysis; besides, the elasticity with respect to a class, say a given educational level, is obviously constant.

²¹ See J. Jhonston, *Econometric Methods*, 2nd ed. (New York, McGraw-Hill, 1972). Also, J. S. Cramer, "Efficient grouping, regression and correlation in Engel Curve analysis", *Journal of the American Statistical Association*, vol. 59, No. 305, March 1964, pp. 233-250.

²² It must be noted that any grouping is likely to change the homoscedasticity of the model fitted, biasing coefficients when fitted with ordinary least squares. However, the loss will be minimized precisely when the between-group variance is maximized.

²³ Jhonston quotes an example on consumption function in which the R^2 on 1,218 individual data amounts to .035. When data are aggregated into 56 groups, the R^2 raises to .497. With Houthakker's method, the R^2 is .814.

TABLE 2. MACRO ANALYSIS
A. Rural-to-urban migration
(F variables in parentheses)

Variables	Males					Females			
	1960-1968		1965-1968			1960-1968		1965-1968	
N	171	171	171	171	171	99	206	206	114
R ²	.423	.635	.712	.636	.658	.787	.702	.679	.726
Constant	8.00	5.80	4.45	2.99	3.09	2.85	2.67	2.67	3.28
I/O	-.557 (68.2)	-.549 (104.0)	-.500 (106.1)	-.195* (3.2)	-.062* (.3)	-.359 (15.3)	-.374 (55.1)	-.057* (.4)	-.387 (49.0)
I/D	-1.202 (36.3)	-.438 (6.1)	-.259 (2.6)	.027* (.0)	.060* (.2)	.029 (.0)	.142 (2.3)	-.144* (1.3)	-.025 (.0)
CVI/O	-.002 (.0)	-.159 (1.0)	-.082 (.32)	-.174* (1.2)	-.146* (.8)	-.001 (.0)	-.131 (1.2)	-.155* (1.8)	.116 (.4)
CVI/D	-.032 (.0)	.116 (.4)	.120 (.5)	-.004* (.0)	-.072* (.2)	.093 (.1)	.097 (.4)	.159* (.9)	.259 (1.4)
Mod/O					-.305 (10.1)			-.160 (7.3)	
Mod/D					-.049 (.1)			.116 (1.7)	
Prox			.778 (43.5)	.848 (40.8)	.806 (38.5)	.981 (31.5)	.888 (69.1)	.859 (58.3)	.859 (21.9)
Dist		-.312 (96.2)	-.068 (2.2)	-.088 (2.8)	-.086 (2.8)	-.062 (.7)	-.100 (0.5)	-.120 (7.0)	-.095 (1.6)

Key:

N : number of observations
R² : coefficient of determination
I : average income (including wages, non-wage incomes). An asterisk indicates that the measure only takes into account the average wage
CVI : coefficient of variation on average income. An asterisk indicates that the measures refer to the average wage

Sec : enrolment rates in secondary
Mod : percentage of modern jobs
/O : the variable refers to the origin area of migration
/D : the variable refers to the destination area of migration
Prox : = 1 if the migration has not involved a change of place of residence but only a shift from rural to urban (and vice versa) within the place
Dist : distance between two places of residence (kilometres)

B. Urban-to-rural migration
(F variables in parentheses)

Variables	Males				Females			
	1960-1968		1965-1968		1960-1968		1965-1968	
N	98	98	98	98	38	116	116	52
R ²	.322	.323	.385	.381	.537	.401	.513	.460
Constant	4.66	4.43	5.51	4.96	5.41	4.94	4.84	5.38
I/O	-.401 (18.7)	-.281 (.4)	-.482 (26.1)	-.412* (3.4)	-.582 (18.2)	-.521 (40.0)	-.412* (5.7)	-.449 (12.6)
I/D	-.235 (.8)	-.227 (.7)	-.239 (.9)	.297* (1.2)	-.092 (.1)	-.161 (1.2)	.038* (.0)	-.312 (4.2)
CVI/O	-.994 (20.1)	-1.008 (19.4)	-1.043 (23.8)	-1.336* (22.2)	-1.086 (5.1)	-.456 (4.4)	-1.343* (32.9)	-.699 (2.8)
CVI/D	-.054 (.022)	-.069 (.0)	-.071 (.0)	-.257* (.8)	-.536 (-1.0)	.071 (.0)	.005* (.0)	-.029 (.0)
Mod/O		-.167 (.1)						
Mod/D		.049 (.1)						
Sec/O			-.394 (9.0)	-.292 (4.2)	-.530 (2.1)	-.511 (14.3)	-.375 (12.2)	-.546 (11.2)
Sec/D			-.059 (.2)	-.039 (.1)	-.059 (.1)	.330 (5.2)	.167 (1.6)	.064 (.1)
Dist	-.077 (2.3)	-.077 (2.1)	-.090 (3.4)	-.081 (2.7)	-.119 (2.5)	-.077 (2.3)	-.067 (2.1)	.005 (.0)

C. Urban-to-rural migration
(F variables in parentheses)

Variables	Males					Females		
	1960-1968					1965-1968	1960-1968	1965-1968
N	69	69	69	69	69	55	76	63
R ²	.315	.653	.710	.726	.691	.733	.766	.743
Constant	4.31	4.36	3.73	3.23	3.90	3.35	3.19	4.28
I/O	-.206 (7.6)	-.197 (13.6)	-.182 (13.5)	.146 (.6)	.329* (4.7)	-.091 (2.7)	-.175 (8.7)	-.174 (7.3)
I/D	-.136 (.3)	-.061 (.1)	-.053 (.1)	.034 (.0)	.033* (.0)	-.038 (.0)	.151 (.8)	-.226 (1.0)
CVI/O	-1.568 (17.9)	-1.135 (17.4)	-1.028 (16.6)	-1.157 (20.0)	-.843* (13.4)	-.958 (12.4)	-.774 (14.5)	-.797 (6.5)
CVI/D	.090 (.1)	.224 (.8)	.428 (3.0)	.419 (2.9)	.062* (.1)	.432 (2.8)	.461 (4.2)	.093 (.1)
Mod/O				-.419 (2.7)				
Mod/D				-.102 (.5)				
Prox			.642 (12.2)	.617 (11.4)	.591 (10.2)	.720 (10.8)	.562 (7.3)	.592 (4.2)
Dist		-.339 (61.3)	-.127 (3.0)	-.127 (3.1)	-.121 (2.6)	-.180 (3.1)	-.284 (10.3)	-.277 (4.9)

D. Rural-to-rural migration
(F variables in parentheses)

	Males				Females		
	1960-1968		1965-1968	1960-1968			1965-1968
N	50	50	14	59	59	59	1.6
R ²	.184	.197	.512	.347	.467	.227	.560
Constant	2.14	1.89	.72	2.99	3.44	3.51	-.56
I/O	-.563* (4.9)	-.601* (5.2)	-1.177* (4.3)	-.740* (10.8)	-.776* (13.5)	-.429 (20.7)	.852* (1.3)
I/D	.759 (1.8)	.960* (2.3)	1.504* (.6)	.410* (2.9)	.477* (4.2)	.021 (.0)	.701* (2.7)
CVI/O	.433 (2.3)	.396* (1.7)	1.122 (2.4)	.505* (2.4)	.610* (4.0)	.061 (.0)	-.022* (.0)
CVI/D	-.465 (1.1)	-.540* (1.3)	-.821* (.3)	-.337* (1.6)	-.431* (2.8)	.142 (.3)	-.441* (1.1)
Mod/O		.140 (.5)			-.366 (11.4)		
Mod/D		-.149 (.4)			-.040 (.1)		
Dist	-.123 (1.4)	-.109 (1.0)	.033 (.0)	-.019 (.0)	-.089 (.6)	.014 (.0)	-.243 (.9)

(b) Education facilities at the origin and the destination have almost always the expected sign but only intra-urban migration is significantly explained by the absence of such facilities in the origin zones (see table 2.B). It can be seen that the coefficient does not vary over the two periods considered, but as the education facilities are measured *ex post* and secondary education increased rapidly, no conclusion can be inferred.

(c) Distance and proximity are two very significant variables, the influence of which affects the level of significance of the other variables. But their effects differ between the types of migration. In the case of rural-to-urban migration, the most significant variable between distance and proximity, as well as among all the other variables, is proximity.²⁴ When it is excluded, distance becomes the

most significant variable. This means that most of the rural-urban migration is of a very short distance, within the same place of residence. The migrant goes to the city or urban areas he was living near, quite often to take the same occupation.²⁵ The immediate consequence is that the choice of the destination does not maximize expected income. This is apparent in the equation from which proximity is excluded, where income at the origin is significant as is income at the destination although the latter had an illogical negative sign (*cf.* table 2.A). When proximity is in the equation, income at the destination loses all significance. This result is in contradiction to the neo-classical explanation on migration, which gives as much importance to pull factors as to push factors, under the over-all assumption of income maximization. Meanwhile, it should be remembered that the cost of migration—

²⁴ The classification of urban and rural areas was the same in 1968 as for previous periods, so that the urbanization of rural zones does not affect the results.

²⁵ See R. Wéry, *op. cit.*

“approximated” here by the distance or the proximity—is unfortunately not measured in monetary terms which can loosen the rationality of the migration process and, also, that income at the destination in urban zones is higher than in rural areas, without exception.

Proximity also determines urban-to-rural migration but to a less extent than rural-to-urban. As agricultural activities predominate in rural areas, this result could be due to the growth of urban areas, compelling agriculturalists to leave infra-urban areas and to buy or find land in regions remote from cities but where the cost of land is less.

Distance does not contribute to the explanation of intra-rural migration, neither, more unexpectedly, does it in the case of intra-urban migration.

(d) Income at the origin is a significant push factor for all four types of migration. To the contrary, income at the destination never has a significant probability level, even for intra-area migration for which it could be expected that the income effect is not hidden by interarea differences, particularly as distance is not significant. Elasticities with respect to the income at the origin are quite similar for rural-urban and intra-urban migration, but higher for intra-rural and lower for urban-rural migration. Differences between males and females are slightly different over both periods considered, except, curiously enough, for intra-rural migration.

Differences between the contribution of the average wage and the average income are worth noting. Average wage at the origin is far more significant than average income to explain rural-to-urban migration and, to a less extent, intra-rural migration. For the two other types of migration, the reverse is obtained with the signs of both variables changing. Only hypotheses can be made on the basis of these results, though they are partially sustained by the micro analysis. It has been seen in the latter that rural wage-earners are more mobile than self-employed; moreover, a good many rural migrants would be wage labourers; lastly, it is probably easier to get an idea of an average wage rather than of an average income. The higher level of significance of wage on income, with regard to migration from rural origin, is then logical. Note again that the collinearity of the average wage with other variables is higher than with income, which might possibly influence results.

In the case of migration out of urban areas, wage coefficient is positive and income coefficient is negative, and more significant. Main expulsion areas could then be urban areas with pronounced dualism—modern sectors with high productivity and high salaries together with more traditional sectors in which self-employed workers are numerous and a high unemployment rate is found. It is tempting to conclude that migrants are either unemployed or self-account workers, although results of the micro analysis do not support the higher probability to migrate of the latter, or the strong influence of their participation.

(f) The contribution of income distribution (measured by the coefficient of variation) in the origin and destination areas is rather varied. A more equal distribution determines significantly the decision to leave urban areas for other urban areas, but it does not affect the choice of the destination. This type of migration, especially by males, also depends significantly on the percentage of modern jobs at the origin, negatively correlated with the dependent variable. These outcomes would suggest that the potential migrant

weighs the chances of finding a modern job, taking into account the degree of labour market dualism which is responsible, to a large extent, for the income distribution inequality.

Also for urban-rural flows, the income distribution at the origin negatively influences the decision to migrate. The percentage of modern jobs is no longer significant as a more detailed breakdown of the urban-rural migrating population would be likely to show that most migrants are agriculturalists and are not influenced by the size of the modern sector.

As in the case of the whole model, income distribution does not clearly explain intra-rural migration. Although this is not surprising, given the specificity of this type of migration during the period considered, the apparent contradiction between the effect of income distribution at the origin on this type of migration and on the urban-rural migration may possibly be due to urbanization, everything being equal, allowing for better judgement of the labour market situation.

Contrary to migration out of urban areas, rural-to-urban migration does not depend on the income distribution at the origin. As to the distribution at the destination, its level of significance largely depends on the specification of the equation as influenced by relative values of intra-regional and interregional variances. Indeed, substitution between income and income distribution (equation not reproduced in table 2.A) seems to occur. When income does not appear in the regression, the coefficient of the income distribution at the destination is negative and significant. The more unequal the distribution, the lower the migration towards this region. This would show—assuming for instance that distribution inequality is correlated with labour market dualism—that the migrant evaluates the situation he would be confronted with. He would not so much consider expected incomes in his choice but rather the probability of finding a job, in any sector, as the percentage of modern jobs is not significant. However, when average income at the destination is included in the regression, it recovers the influence of income distribution (see table 2.A), though the coefficient is negative, as discussed above. This annexing of the income distribution effect by the average income can result in the collinearity between both variables, the way they have been computed, and above all of the latent influence of distance. Indeed, a possible explanation is that a given “place of residence”, within which most migration takes place, would be relatively homogeneous as far as income distribution is concerned. However, these possible hypotheses have not been tested.

3. Summary

The micro analysis has identified some characteristics of the migrant in the Philippines during the 1960s. He is quite often single, rather young, and has received an education above the average for the region.²⁶ In rural areas, especially for males, non-participation in the labour force is a decisive

²⁶ If the probability to migrate increases with education, rural migrants with little or no education are nevertheless more numerous than educated migrants, coming as they do from the largest class of the population. This has to be taken into account when evaluating the consequences of migration.

factor of migrating, though one can wonder what actually is measured. For other flows, non-participation is, surprisingly, not relevant. Wage-earners appear more mobile than independants and, probably because of changes in the labour market at the destination, certain occupations would be more compatible with migration than others. If education is not taken into account, agriculturalists' children are as mobile as others. Women behave very much like males, though they appear to be less influenced by economic factors, as their activity rate is less than for males, and also they follow their husband. As to migration to rural areas, non-negligible during the 1960s, caused largely by land extension, its specificity has been noted and explains the poor results obtained.

In the macro analysis, the propensity to migrate from one region to another is explained as a function of some aggregates specific to both. One of the most striking results is the predominance of push factors over pull factors. The lower the average income at the origin the higher the propensity to migrate. But the choice of the destination does not depend on the average income that can be expected there. The other

relevant fact is the very short distance on which most rural-to-urban migration takes place. Flows from rural areas to urban areas within the same place of residence are far larger than any others. This probably explains the low level of significance of pull factors which are no longer determining the selection among the remaining destinations. Intra-urban migration depends less on distance, though destination areas are still not chosen with regard to socio-economic opportunities.

The migratory process in the Philippines is a good example of chain migration. The poorest rural areas expel the largest proportion of their economic population towards the nearest urban areas although the economic situation there is not yet among the most favourable. But these urban areas are also the main sources of intra-urban migration. It is probably not a typical example of chain migration of an individual, but rather an example of successive waves of population pushing each other. It is indeed impossible to verify whether the urban migrants are ancient rural migrants, but it is more likely that they come from other classes of population.

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