

POPULATION TRANSITION

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Summary

The sweeping changes in the size and distribution of the world's population over the last century reflect many social and economic changes. Improvements in health and knowledge about family planning have contributed to longer lives, better maternal health, and smaller family sizes throughout much of the world. But the knowledge and availability of better health practices have spread unevenly among world regions, and among wealthy and poor sectors of national populations. Less developed regions experienced unprecedented population growth during the second half of the twentieth century as the economic growth and public health improvements helped lower mortality. Growth slowed as fertility began to fall in the last quarter of the twentieth century. Education, economic growth, and the efforts of international organizations helped to slow population growth by lowering fertility in many countries. But large gaps remain both within and among countries. Fertility decline has lagged in sub-Saharan

Africa and parts of South Asia. Despite the declining fertility, the young age structure in less developed regions has created considerable momentum for future growth because the population reaching childbearing has continued to expand. On average, women have fewer children than women did in the past, but there are more women having these children. More developed countries are at a later stage of demographic transition than most less developed countries. Many face slow population growth and rapid population aging because of decades of low birth rates. Immigration contributes a significant share of population growth in many of these countries. These demographic changes are altering the family structure, labor force, ethnic distribution, and economies of more developed countries. The world will need to confront many old and some new challenges to achieve sustainable population growth in the twenty-first century. HIV/AIDS, adolescent health, environmental degradation, poverty, and illiteracy, for example, are core problems addressed by international efforts to slow population growth and to improve the health and well-being of people everywhere.

1. Introduction

In the past century, the world's population has undergone a sweeping change in both its total numbers and its distribution across regions. The twenty-first century is likely to see the second phase of that transformation—lower fertility and an even more dramatic redistribution of population among the more developed and less developed countries, since nearly all future world population growth will take place in less developed countries. The world population was estimated to be 6.0 billion people at the turn of the twenty-first century—over three times more than the 1.7 billion at the turn of the twentieth century. The rate of population growth peaked to 2% a year in the 1960s. How fast the population will grow during the new (twenty-first) century is an open question. The momentum created by the unprecedented growth of the last half century will carry us toward the seventh billion—probably sometime before 2020. Beyond that, the vision blurs. Will world population stop growing over the next century? Will the twenty-first century witness long-term population decline? Or will the new century see even more population growth than the last? Any of these scenarios is possible.

World population in the current century, as in the last, will reflect starkly different demographic trends around the world: high fertility and mortality and rapid population growth in sub-Saharan Africa, for example, and low fertility and mortality and population decline in parts of Europe. A great deal has been learned about the factors linked with population change. These include: economic growth or decline; public health interventions; investments in education and environmental protection; the status of women; epidemics and other health threats; and access to family planning information and services. Some of these factors are harder to understand and predict than others. Many are intricately interconnected—so that a change in one can cause a change in another.

What is clear is that the future world population will be influenced heavily by the 2 billion young people under age 20 who currently live in less developed countries. As these youths enter their childbearing years, their decisions about how many children to have and when to have them, and their ability in accessing reproductive health services

to fulfill their childbearing desires, will determine the size and characteristics of the world's population in 2050 and at the end of the twenty-first century.

2. Demographic Transition

The improvement in human survival and the consequent explosion of population growth marked the beginning of the shift from high to low mortality and from high to low fertility that is known as the “demographic transition.” This shift occurred throughout Europe, North America, and a number of other areas in the nineteenth and early twentieth centuries. It gave rise to the dominant model of demographic change, which most demographers assume will apply to all countries. In the classic demographic transition, the trend of high birth and death rates (and minimal population growth) is disrupted by a long-term decline in mortality. Mortality rates eventually stabilize at low levels. Birth rates also begin a long-term decline and fall to about the same level as mortality rates. With birth and death rates at similar low levels, the equilibrium of slow population growth is regained.

The pace of change in a country will vary depending on its culture, level of economic development, and other factors. As countries pass through the various stages of the transition, population growth from natural increase (birth rate minus death rate) accelerates or declines depending on the gap between the birth rates and death rates. More developed countries such as Sweden have “completed” the demographic transition: Fertility and mortality are at low levels and natural increase adds little, if any, population growth. Many less developed countries are in an intermediate stage, in which mortality and fertility are falling at varying rates but are still high relative to the levels in Europe and other more developed areas. While not all countries will follow the same path to low fertility and low mortality as did European countries, the demographic transition theory provides a useful framework for assessing demographic trends, and projecting future population size.

3. Population Growth Before 1950

For much of human history, people have struggled to survive. By AD 1, perhaps 300 million people lived on the Earth, a paltry total after millions of years of human existence. For most of the next 2000 years, population growth was exceedingly slow. High birth rates were often offset by frightful mortality from wars, famines, and epidemics. The bubonic plague, for example, reduced the populations of China and Europe by one-third in the fourteenth century.

The demographic history of Breteuil, France, in the seventeenth century, illustrates the fragility of life in this period. Breteuil's inhabitants depended on a single grain crop, and crop failure meant famine and death. Evidence of a crop crisis in Breteuil in 1694 was accompanied by records of 1229 burials in the parish registers. Only 73 deaths had been recorded the previous year, and only 49 were recorded the year following the crop failure.

Despite dramatic spikes in mortality rates, the number of births exceeded the number of deaths during the seventeenth and eighteenth centuries, and population growth

proceeded at a slightly faster pace. The world population was about 790 million in 1750, and reached 1 billion around 1800.

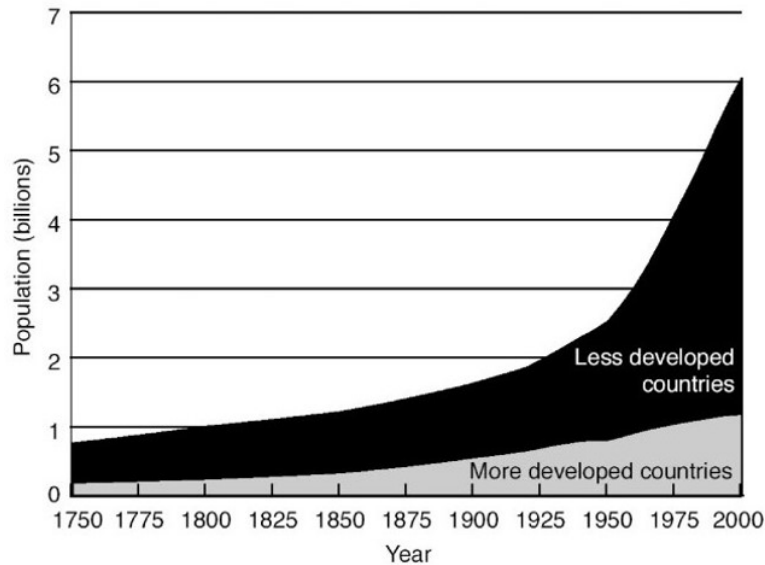


Figure 1. Population growth in more developed and less developed countries, 1750 to 2000

During the next century, something new began to take place in Europe, and in a few other areas around the world. Better hygiene and public sanitation reduced the incidence of disease. Expanded commerce made food supplies more widely available and improved nutrition. The wild fluctuations in mortality of previous centuries began to recede, and life expectancy began a slow rise. Population grew more quickly and more steadily. The total world population was nearly 1.7 billion by the beginning of the twentieth century and would reach 2 billion within the next 30 years.

The nineteenth-century surge of population growth occurred primarily in the more developed countries (Following United Nations definitions, more developed, or industrialized, countries include Europe—including all of Russia—the United States, Canada, Australia, New Zealand, and Japan. The term “less developed” refers to countries in Africa, Asia—except for Japan—Latin America and the Caribbean, and Oceania—except for Australia and New Zealand). The population of Europe more than doubled between 1800 and 1900, while the population of North America increased nearly 12 times—fueled by immigration from Africa and Europe. In 1800, about one-fourth of world population lived in the now more developed regions of Europe (including Russia), Japan, and North America, but that share increased to about one-third by 1900.

Region/country	1.1.1 Population in millions				
	1750	1800	1900	1950	2000

World	791	978	1650	2521	6055
More developed	191	236	539	813	1188
North America	2	7	82	172	310
Europe	163	203	408	547	729
Japan, Australia, and New Zealand	26	26	49	95	149
Less developed	600	742	1111	1709	4867
Africa	106	107	133	221	784
Asia (less Japan) ^a	478	611	904	1321	3563
Latin America and Caribbean	16	24	74	167	519
	1.1.2 Percent of world total				
World	100	100	100	100	100
More developed	24	24	33	32	20
North America	—	1	5	7	5
Europe	21	21	25	22	12
Japan, Australia, and New Zealand	3	3	3	4	2
Less developed	76	76	67	68	80
Africa	13	11	8	9	13
Asia (less Japan) ^a	60	62	55	52	59
Latin America and Caribbean	2	2	4	7	9

Note: Numbers may not add to totals because of rounding

^a Includes Oceania except for Australia and New Zealand. Countries of the Middle East are included either in Asia or Africa

— = less than 0.5 percent

Sources: United Nations Population Division, *Briefing Packet, 1998 Revision of World Population Prospects, October 1998*; I. B. Taeuber, *The Population of Japan (1958)*

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Table 1. Population growth in world regions, 1750 to 2000

Less developed countries grew more slowly than more developed countries in the nineteenth century, but they already held the bulk of the world inhabitants. Asia, dominated by China, had 62% of the world population in 1800, and Africa had 11%. Latin America and the Caribbean accounted for only about 2% of the world's population. Like North America, Latin America would see most of its population growth in the twentieth century. Some of the shift in regional distribution resulted from immigration, but the change also reflects fundamental shifts in population trends that began in the more developed regions, and spread to less developed regions in the twentieth century.

4. Population Change 1950 to 2000

The second half of the twentieth century brought many new demographic trends and patterns. The more developed countries completed their transition to low mortality and low fertility. Population growth slowed, and even turned negative in a few countries. Populations grew older. The more developed countries also experienced sometimes disruptive changes associated with baby booms and baby busts, crises in health, and

waves of immigrants and refugees. In less developed countries, the second half of the century brought decades of rapid population growth and swelling streams of migrants from rural to urban areas. Some countries appeared to be rushing through the various stages of the demographic transition, while others appeared to be following a new path of demographic change.

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Bibliography

Ahlburg D. (1998). A. Julian Simon and the population growth debate. *Population and Development Review* **24**(2) 317–319. New York: Population Council. [An excellent discussion of the arguments about the role of population growth in economic growth and population well-being.]

Ashford L. S. (1995). New perspectives on population: lessons from Cairo. *Population Bulletin* **50**(1), 1-44. Washington, DC: Population Reference Bureau. [Presents the background and theoretical framework for the historic 1994 international conference on population and development in Cairo.]

Birdsall N. and Sinding S. (1999). Chairman's report. Report on the *Technical Symposium on Population Growth and Economic Development*, in Bellagio, Italy, Nov. 2–6, 1998. Washington, DC, and New York: Carnegie Endowment for International Peace, and Rockefeller Foundation. [Presents new evidence on the interaction of population change and economic development.]

Bobadilla J. L. and Costello C. A. (1997). Overview. *Premature Death in the New Independent States*, eds. J. L. Bobadilla, C. A. Costello, and F. Mitchell. Washington, DC: National Academy of Sciences. pp. 1-31. [Describes the factors leading to increased mortality in the former Soviet Union in the 1980s and 1990s.]

Boserup E. (1970). *Woman's Role in Economic Development*. London: George Allen and Unwin, Ltd.

Boserup E. (1981). *Population and Technological Change*. Chicago: University of Chicago Press.

Brockerhoff M. and Brennan E. (1998). The poverty of cities in developing regions. *Population and Development Review* **24**(1), 75-114. New York: Population Council. [Explains recent trends and issues in urbanization in less developed regions.]

Caldwell J. C. and Caldwell P. (1987). The cultural context of high fertility in sub-Saharan Africa. *Population and Development Review* **13**(3), 409-437. New York: Population Council. [Classic discussion of the social and cultural factors that encourage high fertility in societies at low levels of economic development.]

Cassen R. et al. (1994). Population and development: old debates, new conclusions. *ODC U.S.-Third World Policy Perspectives*, No. 19. New Brunswick, New Jersey: Transaction Publishers. [An excellent discussion of issues and evidence concerning the role of population growth in economic development.]

Castles S. and Miller M. J. (1998). *The Age of Migration*, 2nd edition. New York: Guilford Press. [An excellent summary of international migration trends and issues over the twentieth century.]

Coale A. J. and Hoover E. M. (1958). *Population Growth and Economic Development in Low-Income Countries*. Princeton, NJ: Princeton University Press.

Cohen J. E. (1996). *How Many People Can the Earth Support?* New York: W.W. Norton. [A comprehensive and readable compendium of beliefs about the relationship between population and natural resources. The volume includes a wide range of estimates of the maximum number of people that can survive on Earth, dating from the seventeenth century to the present. The reasoning behind these estimates is discussed.]

Ehrlich P and Ehrlich A. (1968). *The Population Bomb*. New York: Ballantine Books.

Goliber T. J. (1997). Population and reproductive health in sub-Saharan Africa. *Population Bulletin* 52(4), 1-44. Washington, DC: Population Reference Bureau. [Excellent summary of population trends and issues in sub-Saharan Africa, which has among the world's highest fertility and mortality].

Jain A. (1998). *Do Population Policies Matter? Fertility and Policies in Egypt, India, Kenya, and Mexico*. New York: Population Council. [A valuable study of how population policies have affected population and health trends in four countries.]

Malthus T. R. (1960). An essay on the principle of population as it affects the future improvement of society. With remarks on the speculations of Mr. Godwin, M. Condorcet, and other writers. Reprinted in *On Population*, ed. G. Himmelfarb. New York: Modern Library. <http://www.esp.org/books/malthus/population/malthus.pdf> [The classic explanation of the relationship between population growth and resources, within the context of eighteenth-century knowledge and experience, which forms the basis for many contemporary theories.]

Mason A. (1997). "Will population change sustain the 'Asian Economic Miracle'?" *Asia Pacific Issues: Analysis from the East-West Center*, No. 33. Honolulu, Hawaii: East-West Center. [A fascinating exploration of how changes in age structure may help fuel economic growth.]

McNeil W. H. (1976). *Plagues and Peoples*. New York: Anchor Books, Doubleday. [Describes historical links between epidemics of infectious diseases and population change.]

Meadows D. H., Meadows D L., Randers J and Behrens W. W. (1972). *The Limits to Growth*. New York: Universe Books.

Omran A. R. and Roudi F. (1993). The Middle East population puzzle. *Population Bulletin* 48(1) 1-44. Washington, D.C: Population Reference Bureau. [Examines the population issues and trends in the countries of the Middle East and North Africa.]

Simon J. (1981). *The Ultimate Resource*. Princeton, New Jersey: Princeton University Press.

US Bureau of the Census (1993). An aging World II. *International Program Reports* P95-92-3, eds. K. Kinsella and C. M. Taeuber. Washington, DC: U.S. Government Printing Office. [Compares measures of aging among countries and discusses major issues related to population aging.]

US Committee for Refugees (1998). *World Refugee Survey 1998*. Washington, DC: Immigration and Refugee Services of America. [The two major sources of refugee statistics are the UN High Commissioner for Refugees and the US Committee for Refugees.]

Zlotnik H. (1998). International migration 1965–96: an overview. *Population and Development Review* 24(3), 429-468 New York: Population Council. [Provides estimates of international migration flows and description of international migration trends.]

Biographical Sketches

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Farzaneh Roudi has been with the Population Reference Bureau (PRB) in Washington, DC, since 1987. She is a policy analyst with more than ten years of experience in population and policy information management. Ms. Roudi manages the Policy information Services of the USAID-funded MEASURE Communication Project. She also serves as PRB Regional coordinator for the Middle East and North Africa. She is recognized as an authority on Middle East population matters and has lectured on these topics at the World Bank, academic institutions, and a number of international and regional conferences. She is author of a number of reports and articles on Middle East population issues. Ms. Roudi has an M.A. in demography from Georgetown University in Washington, DC, with additional graduate training in demography at the University of California at Berkeley.