

# Population BULLETIN

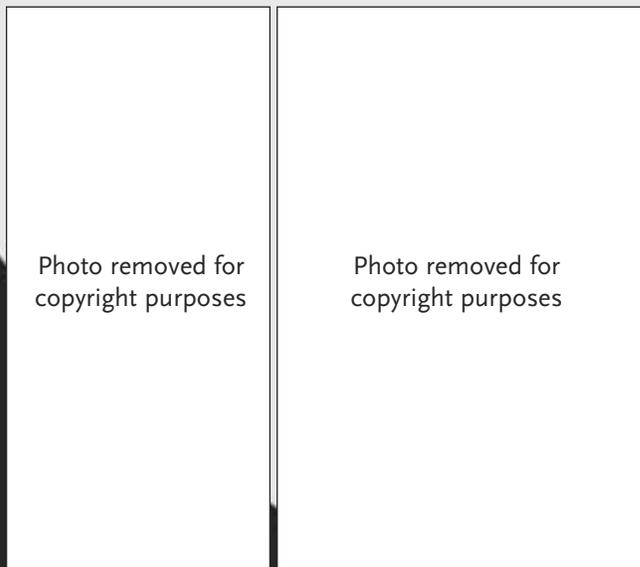
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A PUBLICATION OF THE POPULATION REFERENCE BUREAU

## Global Demographic Divide

by Mary M. Kent and Carl Haub



- The fastest-growing countries in the next 50 years will be among the poorest and least developed.
- Most of the richest, most influential countries will see their population size stagnate or decline by 2050.
- But most countries will experience population growth between 2005 and 2050, as the world adds a projected 3 billion people.

**PRB**

POPULATION REFERENCE BUREAU

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Lori S. Ashford and Nancy Yinger contributed to this report, and to a 2004 *Population Bulletin* on which it was based, "Transitions in World Population." The authors wish to thank Barbara Boyle Torrey and William P. Butz, who offered valuable comments and suggestions.

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# Global Demographic Divide

by Mary M. Kent and Carl Haub

**A** September 1963 cover of *U.S. News & World Report* posed this provocative question: Too Many People in the World? For many readers, this must have been a relatively novel idea. In previous decades, the United Nations had been primarily concerned about the possibility of massive mortality from famine and disease, not rapid population growth. In 1968, Paul Ehrlich published his best-selling *Population Bomb* as the notion that the world was facing a population crisis gained acceptance.

There was little reason to believe otherwise. Women in developing countries were averaging six to seven children each and there were few signs that birth rates might decrease. The mid-20th century acceleration of population growth was a direct result of such beneficial developments as an end to widespread famines and improvements in public health.

High fertility in developing countries was a major concern of many development experts well before it was commonly addressed in the popular press. Rapid population growth and the abject poverty often associated with it were seen as impediments to economic development. Most population policies and programs promoted the ideal of a two-child family, which would produce a slowly growing or stable population size. In the late 1970s, reports of successful campaigns to lower the birth rates in developing countries led to headlines describing the population explosion as another “noncrisis.” Others were quick to point out that, although some early progress had been made, a true solution was many uncertain steps away.<sup>1</sup>

In the following decade, social scientists and, increasingly, policymakers and the general public began to notice unprecedented demographic events in Europe. While fertility had been declining in Europe for some time, it fell to surprisingly low levels. This new development fueled concern about a global “birth dearth.” The public was receiving two conflicting messages: The population was growing too fast, and it was declining precipitously. Which demographic trend was the world facing? The reality is that both trends are



*The gap between countries with rapid population growth and those with slow population growth or decline is linked with vast disparities in wealth, health, and opportunities.*

Eric Thompson, courtesy of Photoshare; and Corbis

occurring—in different regions—and both are working to transform the world we know today.

More recently, attention has been focused on the “demographic divide,” the vast gulf in birth and death rates among countries.<sup>2</sup> On one side are mostly poor countries with relatively high birth rates and low life expectancies. On the other side are mostly wealthy countries with birth rates so low that population decline and rapid aging are all but guaranteed. This is not a simple divide that perpetuates the status quo among the have and have-not nations. Rather it involves a set of demographic forces that will affect the economic, social, and political circumstances in these countries, and consequently, their place on the world stage. Demographic trends are just one of the factors determining their future, but they are a crucial factor.

This *Population Bulletin* will look at the factors fueling the differential growth causing the demographic divide, and at the countries in between the two extremes, which

contain the majority of world population in 2005. The *Bulletin* will focus on growth and demographic trends from now until mid-century, when the effects of the “divide” will be even more visible—and when the demographic momentum for further growth or decline will be built into the age structure of individual countries.

## Century of Growth

In 1900, global population stood at about 1.6 billion. By 2000, those digits had reversed: Global population was 6.1 billion. Thus ended the most remarkable century in demographic history. After thousands of years in which the world’s population size fluctuated, with minimal long-term growth, world population increased nearly four-fold in 100 years (see Figure 1). The phenomenal increase in the 20th century resulted from plummeting mortality rates, primarily in less developed countries.<sup>3</sup> Advances in health and medicine that had

taken many centuries to achieve in the developed countries spread quickly among developing countries. Life expectancy at birth rose rapidly and infant mortality declined sharply. While life expectancy was slowly improving in the United States, for example, it was soaring in Costa Rica (see Figure 2). Within 35 years, Costa Rica nearly closed its life expectancy gap with the world’s most wealthy country. Since 1980, Costa Ricans have lived as long as Americans, on average.

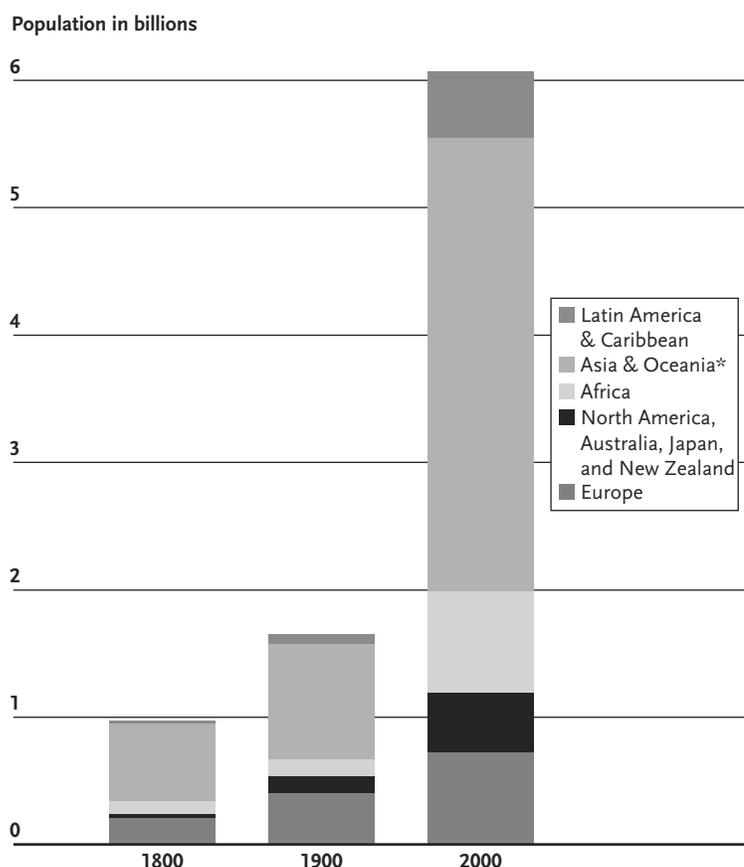
Most countries in Asia, Africa, and Latin America remained primarily agricultural for much of the century. Social norms favored large families. The concept of limiting births was not widely known or accepted. Birth rates remained high and even increased in some areas as mothers’ health improved. These high birth rates, combined with declining death rates, produced population growth rates that reached heights unparalleled in the history of today’s more developed countries. Sweden, for example, which has vital statistics dating back more than a century, rarely saw its population growth rate exceed 1 percent throughout its history. In the 20th century, some developing countries experienced annual rates of 3 percent and higher. At 3 percent, a population will double in size every 23 years.

Even before the public became aware of the “population explosion” in the 1960s, economists and demographers were concerned that this rapid population growth in poor countries would hinder their economic development. International organizations and UN agencies—including UNICEF and the World Health Organization—incorporated reproductive health into their missions. National governments—beginning with India in 1951—began to adopt policies to provide family planning and to convince couples to use it. Egypt, Kenya, Mexico, and other developing countries followed suit over the next 15 to 25 years.<sup>4</sup>

Developing countries addressed the situation with varying degrees of success and commitment. By 1998, about 60 percent of women of reproductive age in developing countries were using a family planning method (see Box 1, page 6), although women still were having more children than they wanted. But policies to lower fertility were sometimes at odds with traditional and religious values. Social engineering on such a scale was unusual, and was fraught with ideological conflicts and human rights issues. The international community has since moved away from overt policies to reduce fertility, and incorporated family planning into broader health policies and programs.<sup>5</sup>

Fertility rates have fallen in every major world region, as measured by the total fertility rate (TFR) (see Figure 3). The TFR provides an estimate of how many children

Figure 1  
World Population by Region at the Turn of Three Centuries: 1800, 1900, and 2000



\* Excludes Australia, Japan, and New Zealand.

Sources: UN Population Division, *World Population Prospects: The 2004 Revision* (2005) and *Briefing Packet*, 1998 *World Population Prospects* (October 1998); and I.B. Taeuber, *The Population of Japan* (1958): 21-23.

women would have in their lifetime if the birth rates of a particular year continued unchanged. Since rates often fluctuate, the TFR does not necessarily measure the number of children an individual woman will have, but over the long term, a TFR below the two-child “replacement level” means that deaths will outnumber births, causing *natural decrease*. Worldwide, the average number of children per woman fell from 5.0 around 1950 to 2.7 in 2005. In Asia and in Latin America and the Caribbean the average dropped by more than 3 children per woman to about 2.6. North America and Europe also saw significant drops. Only in sub-Saharan Africa has the average remained well above 5, a level that guarantees considerable growth.

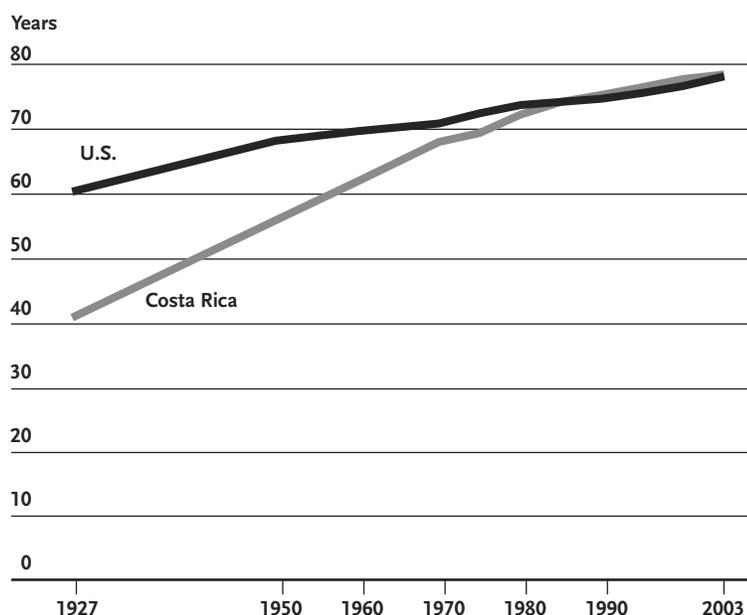
Within regions, fertility rates have followed very different paths and tempos, as illustrated for selected countries in Figure 4, page 7. In South Korea, fertility rates have descended to the lowest developed-country levels. China, Costa Rica, Sri Lanka, Thailand, and Tunisia have also shown dramatic declines. Increases in contraceptive use, education, and health status tend to accompany the drop in fertility.

Other countries, such as Kenya, have experienced significant fertility declines but the TFR remains relatively high. Bangladesh, Egypt, India, Indonesia, and the Philippines are other examples of countries where fertility declined to a moderate rate and then leveled off in what some demographers are calling a “stall.” These fertility stalls have been temporary (as in Egypt) or prolonged (as in Kenya). A recent analysis found the stall occurred in countries in which socioeconomic advancements, such as increases in per capita income and education, stagnated as well.<sup>6</sup>

Still other countries, including Afghanistan, Niger, Nigeria, Uganda, and Yemen, have seen little or no decline over the years. These tend to be poor, largely rural countries, with minimal contraceptive use and low educational levels.

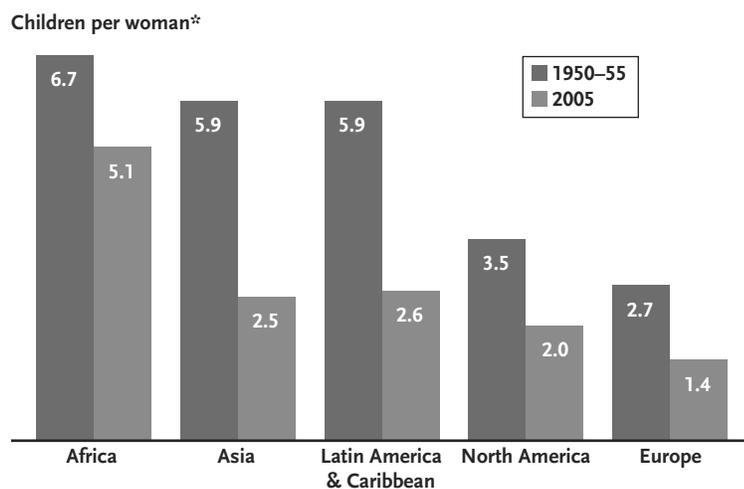
The future size of the world population will primarily depend on fertility trends in the high- and moderate-growth countries. Even if an unexpected rise in fertility in Europe or Japan were to slow or halt eventual population decrease in those areas, it would not affect global growth appreciably. Mortality has less effect on future population growth, except in countries with very high mortality, such as those with a high prevalence of HIV/AIDS or malaria. Deaths from HIV/AIDS have dramatically slowed population growth in some countries, particularly in southern Africa, but will nonetheless have a modest effect on the global total.<sup>7</sup>

Figure 2  
Life Expectancy at Birth in Costa Rica and the United States, 1927–2003



Sources: Universidad de Costa Rica, *La población de Costa Rica* (1976); UN Population Division, *World Population Prospects: The 2004 Revision* (2005); and National Center for Health Statistics, *National Vital Statistics Reports* 53, no. 6 (2004): table 12, and 53, no. 15 (2005).

Figure 3  
Fertility Levels in Selected World Regions, 1950 and 2005



\*The average total number of births a woman would have given current birth rates.

Sources: UN Population Division, *World Population Prospects: The 2004 Revision* (2005); and C. Haub, 2005 *World Population Data Sheet*.

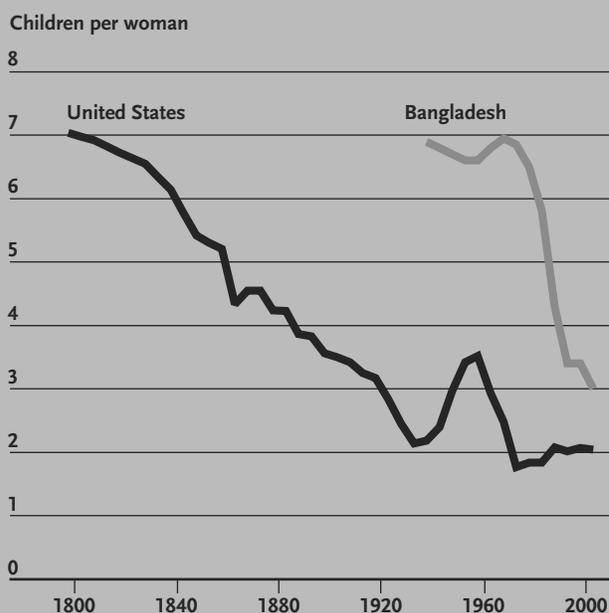
Box 1

**The Contraceptive Revolution**

The global fertility rate began to decline after 1960 as women in less developed countries began to limit the number of children they had. For couples in many countries, the concept of planning the number and timing of their children was revolutionary. The high risk of a child dying, along with a desire for many children to help the family and support their elders, was at odds with the idea of timing or limiting pregnancies. But there was a fundamental shift in attitudes in the last quarter of the 20th century, as couples began to want fewer children. Surveys in the 1970s showed that Kenyan women wanted at least seven children and Indonesian women wanted four. By the early 2000s, Kenyan women wanted at most four children, and Indonesian women wanted less than three.

This desire for smaller family sizes coincided with increased knowledge, availability, and use of contraceptives—all promoted in organized family planning programs that brought contraceptive supplies and services to couples, along with promotional campaigns touting the economic and health benefits of having fewer children. While many factors contributed to the fertility revolution in less developed countries, some studies credit organized family planning programs with nearly one-half of the decline. Fertility declined much faster in less developed countries than in more developed countries (see Figure A).

Figure A  
**Fertility Decline in Bangladesh and the United States, 1800–2000**



Note: The fertility rate is the average total number of children a woman would have given current birth rates.

Sources: United States: A. Coale and M. Zelnik, *New Estimates of Fertility and Population in the United States* (1963); and the National Center for Health Statistics. Bangladesh: UN Economic and Social Commission for Asia and the Pacific and Demographic and Health Surveys.

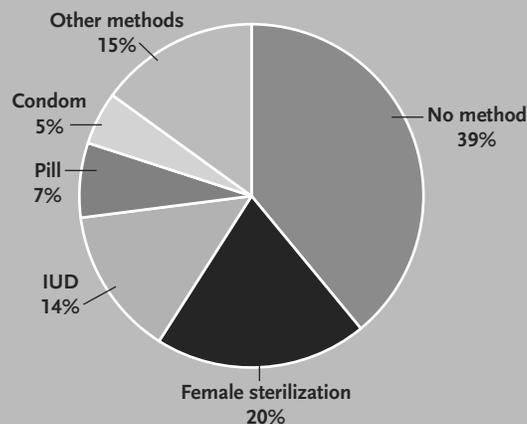
By the 1980s, most women were familiar with at least one effective method for avoiding unwanted pregnancies, and by 2000, more than half of the world's women of reproductive age were using a modern family planning method. In less developed countries, the total fertility rate, or average number of children a woman would have given current birth rates, fell from about 6.2 in the 1950s to 3.0 in 2005.

Part of the contraceptive revolution involved the substitution of more-effective pregnancy prevention methods for less-effective traditional methods women had been using. But the most important change was the widespread acceptance of the idea of family planning. In the 1960s and 1970s, surveys gauging the knowledge and use of family planning were first conducted in a small number of countries around the world, and found that less than 10 percent of women were using a family planning method.

The revolution in contraceptive use and in attitudes toward childbearing was led by some of the largest developing countries, including China, Indonesia, South Korea, and Mexico. Contraceptive use increased in these countries, and their fertility rates fell, although the timing of the decline varied considerably. A host of smaller countries followed suit, including Costa Rica, Singapore, and Sri Lanka. The rate of modern contraceptive use is now higher in some developing countries than in many European countries.

The most popular methods vary substantially by country, but overall, female sterilization and intrauterine devices (IUDs) are the most widely used methods, followed by oral contraceptives (Pills) (see Figure B). Male condoms, which protect sex partners from sexually transmitted diseases as well as pregnancy, rank below these other effective methods in every country. Only about 5 percent of women worldwide rely on condoms. The other major male method—vasectomy—is used by only about 4 percent.

Figure B  
**Contraceptive Methods Used by Married Women Ages 15–49, World, 1998**



Note: Other methods include traditional methods such as withdrawal, as well as modern methods such as vasectomy.

Source: UN Population Division, *World Contraceptive Use, 2003* (2004).

Another group of countries has seen very little increase in modern contraceptive use, and modest (if any) declines in fertility. More than one-half billion people live in countries where less than 10 percent of women used an effective contraceptive in 2000. Most of these countries are largely rural and agriculture-based with extremely low per capita incomes. They are projected to at least double in population between 2005 and 2050. Most are in sub-Saharan Africa or South and Southeast Asia. In Nigeria—Africa's most populous country—modern contraceptive use was about 4 percent in 1990, and only increased to about 8 percent in 2003. Such low usage has little effect on the fertility level. Other countries with relatively little contraceptive use include Afghanistan, Ethiopia, Mali, and the Democratic Republic of Congo.

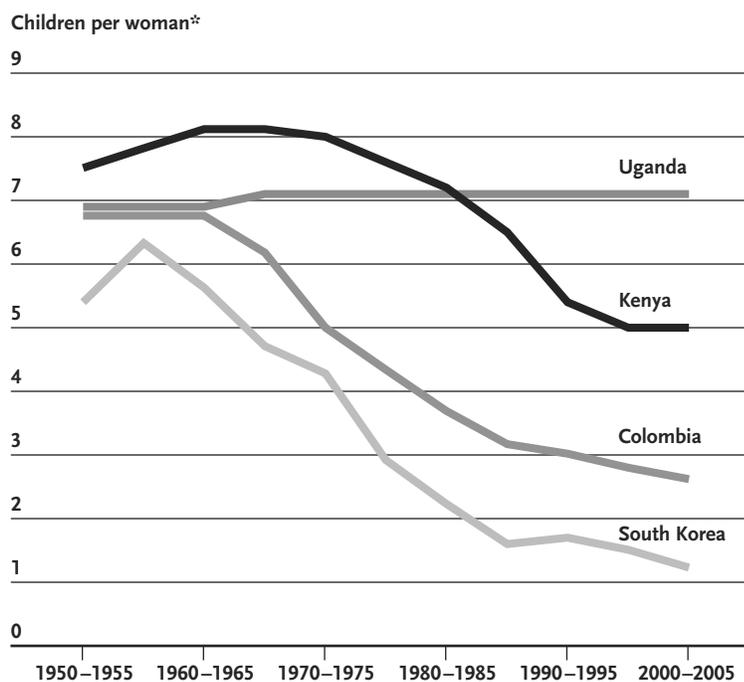
Some countries that experienced early successes are seeing little if any increase in contraceptive use. Economic crises, health crises such as the HIV/AIDS epidemic, and waning international support have contributed to shortages in family planning supplies and disrupted education and health care systems. In Kenya, one of the first countries to embrace family planning programs in the 1970s, modern contraceptive use increased from about 4 percent in the late 1980s to about 28 percent in the early 1990s. The TFR fell from 6.7 to 5.4 over the same period. But Kenya has seen only modest change in these rates in the following decade: A 2003 survey shows 32 percent of married women of reproductive age using a modern contraceptive, and a TFR of 4.9.

The reproductive revolution of the late 20th century fundamentally changed the demographic dynamics in enough of the world to slow global population growth. But the revolution has not yet spread to countries on the other side of the demographic divide. Most demographers believe these countries will eventually embrace the idea of planning family size and use contraceptives, but the timing will depend on a broad set of political, economic, and social factors.

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Figure 4  
Patterns of Fertility Decline: Colombia, Kenya, South Korea, and Uganda, 1950–2005



\*The average total number of children a woman would have given current birth rates.

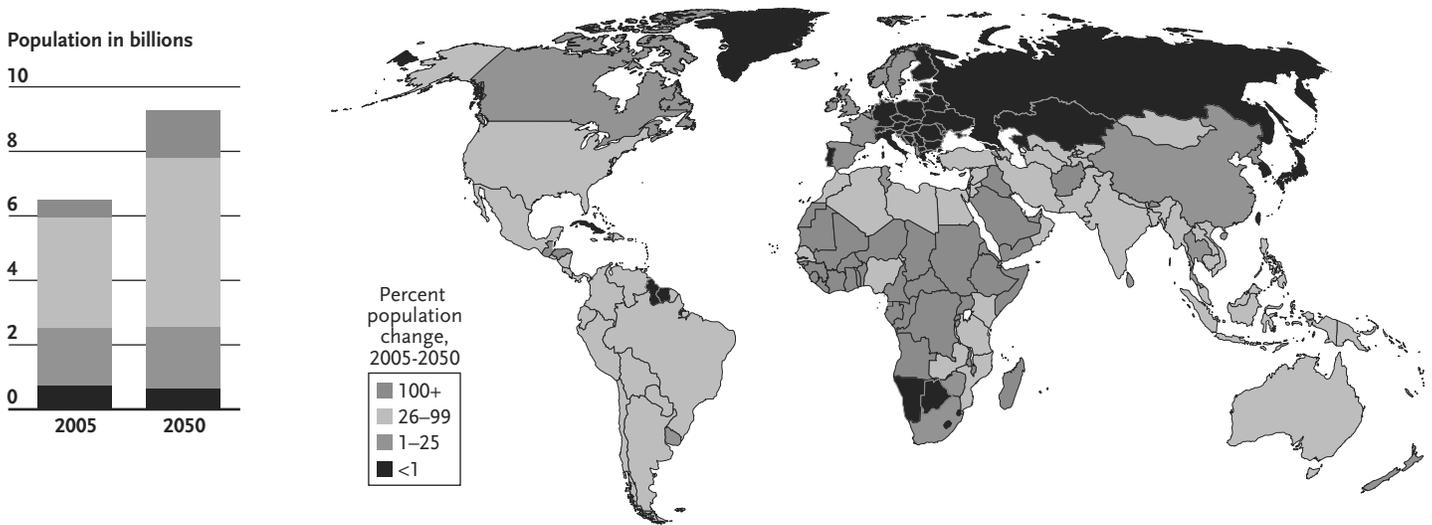
Source: UN Population Division, *World Population Prospects: The 2004 Revision* (2005).

## A Demographic Divide

As average population growth slowed globally, the range of demographic experience actually widened: Growth rates have remained high in many countries while they have plummeted in others. These diverging trends have created a demographic divide between countries with rapidly growing populations and those with stagnant or declining populations. Many other countries are poised at the edge of these extremes—some are on the verge of decline because of sinking fertility rates, while others could rise into the higher extreme because of declining death rates. Immigration is the wild card: It can hasten or slow these trends.

Despite a plethora of reports about population decline, most countries of the world are projected to grow (see Figure 5, page 8). Less than 15 percent of the world's population lives in countries that are projected to lose population between 2005 and 2050. Taken together, these countries account for fewer than 1 billion people. By 2050, these countries will account for less than 10 percent of global population. The media attention and concern arise because the countries slated for decline are among the wealthiest and most influential, including Japan, Germany, Italy, and Russia.

Figure 5  
Projected Population Change by Country, 2005-2050



Source: C. Haub, 2005 *World Population Data Sheet*.

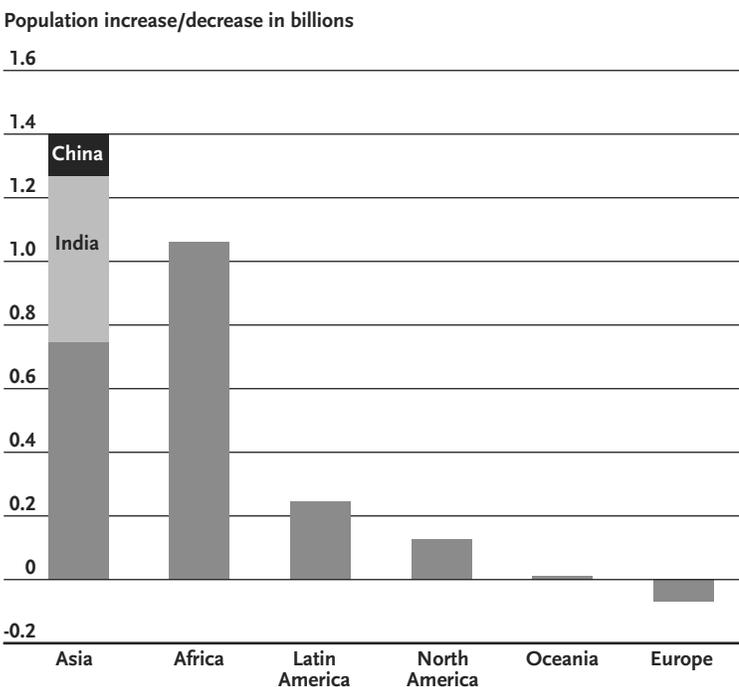
Another group of countries is still growing, but very slowly: They are projected to grow, at most, 25 percent between 2005 and 2050. Some of these are projected to fall into decline by 2050. With its 1.3 billion people, China is the most demographically important in this group: After decades of stringent government controls on childbearing, Chinese fertility has fallen so low that

deaths will likely outnumber births by 2030, causing the population to decline. Even so, China is projected to add at least another 110 million people over its 2005 total. Its projected population will be 1.4 billion in 2050.

The third group of countries will grow at a more modest rate, but will add most to the world in absolute numbers. The United States is in this group: It is projected to increase 42 percent between 2005 and 2050, adding more than 100 million people. Such demographic heavyweights as Bangladesh, Brazil, India, Indonesia, and Iran and are also in this moderate-growth group. Many of these countries have seen impressive fertility and mortality declines, but still have considerable momentum for future growth thanks to a young age structure and moderately high fertility, and—for the United States—immigration. The countries on the highest-growth side of the demographic divide account for just 8 percent of world population in 2005; however, these countries are slated to double or triple in size and their global share will rise to nearly 20 percent by 2050. As a group, the population in the high-growth countries will swell from 0.7 billion to 1.9 billion between 2005 and 2050, even assuming a decline in fertility.

Except for a few petroleum-exporting countries that have enjoyed substantial economic growth in the last half century, nearly all the high population-growth countries are also included in the United Nation's list of *least* developed countries. The countries on this list have the world's lowest per capita income and literacy levels, and their economies tend to rely heavily on agriculture rather than industry or manufacturing. The few least developed countries that do not have rapidly growing

Figure 6  
Projected Population Change by Region, 2005-2050



Source: C. Haub, 2005 *World Population Data Sheet* (2005).

populations tend to have high mortality or heavy emigration of residents seeking jobs. Most of the high-growth countries are in sub-Saharan Africa, where fertility has remained high and mortality has declined enough to fuel rapid population growth. Outside Africa, the countries at this extreme of the demographic divide include some of the most impoverished: Afghanistan, Guatemala, and Haiti. While Africa is the fastest-growing region, Asia's huge population size—it is home to 60 percent of world population in 2005—means that most of the people added to the world between 2005 and 2050 will be Asians. India alone is projected to add more people than the combined total for the Americas (see Figure 6). Europe is projected to see a net loss of about 70 million people over the same period.

## What Caused the Divide?

The dramatic fertility decline during the 20th century coincided with improved health, access to family planning, economic development, and urbanization. Other factors—including stiffer competition for jobs, housing shortages, and government efforts to lower birth rates—also encouraged fertility decline. Sociologists note that when a society's income and living standards rise, parents' aspirations for their children also rise. Parents often opt to have just a few children so they will have more to invest in each child and to ensure that child has a comfortable life and bright prospects for the future. In the 1980s, a number of Kenyan parents reported that they decided to have fewer children so they could afford to send more of their children to school.<sup>8</sup>

The forces that prompted women in most of the world to limit their fertility have not gained traction in many sub-Saharan African countries and a number of countries in Asia, Latin America, and the Caribbean. In most of these societies, children have been highly valued for their labor and for support in old age. While women in many high-fertility countries say they are having more children than they would like, their preferred family size is still relatively high: often three or more.<sup>9</sup> Fertility in these countries is unlikely to drop much further unless couples decide they want fewer children.

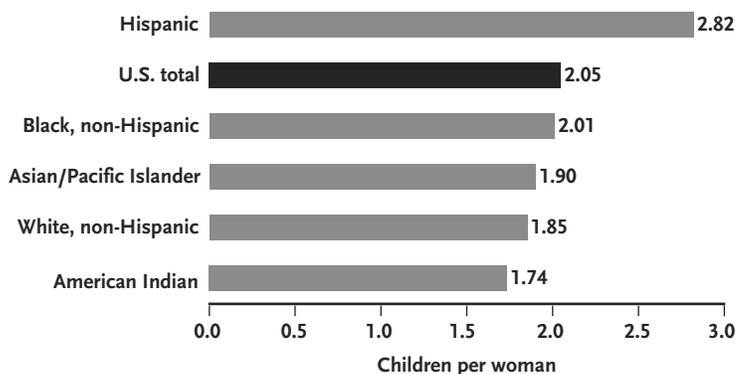
In general, these countries share several characteristics: widespread poverty, largely rural populations, high rates of illiteracy, minimal use of family planning, and no "safety net" outside the family for the indigent. With high rates of infant and child mortality, couples want to have many children to ensure that some survive to adulthood. In Nigeria, 100 infants die out of every 1,000 births, compared with 59 per 1,000 for all less developed countries, and 6 per 1,000 for more developed countries.

At the other end of the spectrum are countries where fertility rates have fallen to levels thought impossibly low a few decades ago. Europe led the collapse of fertility now seen in many other primarily wealthy countries throughout the world. Fertility fell in countries such as France, which already had low birth rates, as well as in traditionally higher-fertility countries such as Italy. From the mid-1970s to the present, France's TFR has been below two children per woman with only minor fluctuations, but France's TFR never sank to the level now seen in some southern and eastern European countries. France's population size is projected to increase slightly, from about 61 million to 64 million between 2005 and 2050, an increase augmented by immigration.

Italy's TFR also experienced significant ups and downs, but it was well above that of France until the 1940s. Italy's TFR declined sharply in the 1970s, and continued to sink to a record low of 1.2 children per woman in the mid-1990s, and has not posted any real increase since. The TFR collapse resulted in a deficit of births, and Italy's population is projected to decline from about 59 million in 2005 to 52 million by 2050, even assuming some net immigration. The average TFR for Eastern and Southern Europe was about the same as Italy's: 1.3. The average number of children per woman is higher in Northern and Western Europe, 1.7 and 1.6, respectively, but nonetheless well below the replacement level. Outside Europe, the lowest rates are in Japan, at 1.3, and South Korea at 1.2. Several other Asian countries, including China, Singapore, and Thailand, have average fertility well below the two-child level.

How did this unparalleled drop in fertility come about? The causes vary from country to country. Rising expectations for material goods and living standards, along with economic uncertainty and tight housing and labor markets, all contributed to couples' decisions to postpone children or to stop at one child. In South Korea, Taiwan, and other low-fertility countries in the less developed regions, policies and programs to lower fertility were also a factor. Women are waiting longer to marry in most countries, usually because they are staying in school longer and entering the labor force in greater numbers. When the average age at marriage rises to the late 20s, as it has in Japan and many European countries, women tend to have fewer children. Cohabitation—either as a prelude to or substitute for marriage—has increased in Europe, but it is much more common in northern than in southern Europe, and varies by country. Accordingly, the acceptability of having a birth outside marriage has become an important factor affecting the national TFR. In recent decades, fertility has been lowest in many of the countries in which cohabitation and childbearing outside

Figure 7  
**U.S. Fertility Rates by Race and Ethnicity, 2004**



Notes: The fertility rate refers to the average total number of births a woman would have given current birth rates. Hispanics may be of any race.

Source: B. Hamilton et al., *Preliminary Births for 2004* (National Center for Health Statistics, www.cdc.gov/nchs, accessed Nov. 4, 2005.)

## Box 2

### The U.S. Exception

The United States is the only developed country experiencing significant population growth in the early 21st century. The relatively robust U.S. growth derives from two factors: The United States has higher fertility and more immigrants than other developed countries. If current rates continue, American women will have 2.0 children, on average, during their child-bearing years, compared with 1.4 in Europe, 1.3 in Japan, and 1.5 in Canada. U.S. rates vary significantly by racial and ethnic group. Non-Hispanic white and Asian women have the lowest fertility—1.9 children per woman—but this is still well above the average for Europe, Japan, and Canada.

Several factors probably account for higher fertility in the United States. Some fertility experts say it is easier for women to combine education, jobs, housework, and childrearing in the United States than in many European countries. American women earn higher salaries relative to men, and American men accept more childrearing and homemaking responsibilities than European men, on average.<sup>1</sup>

Women's greater economic resources—and the generally strong U.S. economy—have helped spawn services and products that ease the homemaking burdens on working couples. Some analysts also point to a greater acceptance of out-of-wedlock births, which helps offset the fertility-depressing effects of a rising age at marriage and relatively high divorce rate.

The other force driving U.S. population growth is international migration. The United States receives about half of the world's international migrants, a remarkable fact considering that the United States accounts for just 5 percent of world population. A long history as an immigrant destination has perpetuated links between immigrant communities in the United States and their native countries—which favors continued migration. As the world's largest economy, the United States offers migrants job opportunities. Also, U.S. policies facilitate the entry and employment of foreigners. At least 1 million new

immigrants settle in the United States each year—accounting for 40 percent or more of its annual population growth.<sup>2</sup>

marriage are less accepted and less common—notably Japan, Italy, South Korea, Spain, and Germany. In Italy, most births occur within marriage and marriage is often delayed because young people cannot find a secure job.<sup>10</sup> An unusually large share of Italian men in their late 20s (about two-thirds) live at home, a pointed reminder of a rising trend of late marriage. In Sweden, by contrast, cohabitation is common and just over one-half of babies are born to unmarried parents. Sweden's TFR was 1.7 in 2004, relatively high for Europe.

Eastern Europe presents a different situation because of severe economic shocks the region has suffered in the transition from centrally planned to market economies. Fertility plummeted in the region, although out-of-wedlock births are common and effective contraceptives are less available than elsewhere in Europe. Many women

immigrants settle in the United States each year—accounting for 40 percent or more of its annual population growth.<sup>2</sup>

With continued below-replacement fertility rates, immigration is becoming an even more important component of population growth. In 2004, about 12 percent of Americans were foreign-born, up from 5 percent in 1970. Even more important for future growth, nearly one-fourth (23 percent) of American children under age 15 are immigrants or the children of immigrants. These children will fuel future population growth when they form their own families.

While U.S. fertility is likely to fluctuate, there is little to suggest big swings up or down in the near term. The fertility rate has been remarkably stable since the late 1980s. Immigration will continue to contribute to population growth in the United States, subject to policy changes that could restrict the flow, and to changes in economic conditions in the United States and the countries of origin for immigrants. The U.S. population is projected to increase by 42 percent between 2005 and 2050, rising from 297 million to 420 million. And the U.S. age structure in 2050 will still contain considerable momentum for continued growth: 26 percent of Americans will be under age 20 and another 31 percent will be in the prime childbearing ages, 20 to 44, according to U.S. Census Bureau projections.<sup>3</sup> The United States will continue to straddle the divide between countries with rapid population growth and those facing decline.

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2. Philip Martin and Elizabeth Midgely, "Immigration: Shaping and Reshaping America," *Population Bulletin* 58, no. 3 (2003).
3. U.S. Census Bureau, "U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin" (released March 18, 2004): table 2a, accessed at www.census.gov, on Nov. 29, 2005.

rely on abortion to prevent unwanted births. The region has among the world's highest abortion rates.<sup>11</sup>

Fertility rates in the United States are high by European standards, and have been the subject of much discussion in Europe. About one-third of U.S. births are to unmarried mothers. Some demographers point to the greater racial and ethnic diversity in the United States as another reason why U.S. fertility has stayed high by European standards. The TFRs for white non-Hispanics and Asians in the United States are still higher than the European average, though they are below the two-child average (see Figure 7). The TFR for black Americans is slightly higher, but it is the TFR for Hispanics that keeps U.S. fertility near replacement level. In 2004, Hispanic women had 2.8 children on average, and the Hispanic TFR has increased slightly in recent years. While the gap between Hispanics and other ethnic groups may narrow, Hispanics—now the largest U.S. minority group—currently have a substantial effect on U.S. fertility. The number of Hispanics is growing rapidly because of immigration as well as their higher birth rates. Hispanics make up about one-half of the 1 million-plus immigrants that enter the United States each year. This annual immigration flow is a major reason the United States is the only developed country with any significant population growth in the 21st century (see Box 2).

## Inequality

Differences among countries in the pace of population growth is not what concerns people most about the demographic divide. Rather it is the disparities in living standards, personal health and well-being, and future prospects associated with these demographic trends. People in countries on the extremes of the divide live starkly different lives today and face very different futures, as illustrated by comparing Japan and Nigeria, two countries of similar population size in 2005 (see Table 1).

Japan has the world's second-largest economy and enjoys a high per capita income: US\$30,040 in 2004. Japanese are highly educated: Most finish secondary school and at least one-third go on to college or university. Japanese are healthy: They have the world's longest life expectancy—82 years in 2004—among the lowest rates of infant mortality. Japanese have a high standard of living, with access to all the trappings of the modern information age. Japan also has one of the world's lowest fertility rates (1.3 children per woman), which, given the low mortality at older ages, makes it one of the most rapidly aging populations in the world.

Japan's population has seen considerable changes since the end of World War II, which left its economy in sham-

Table 1  
The Demographic Divide: Nigeria and Japan

Indicator	Nigeria		Japan	
	1950	2005	1950	2005
Population (millions)	32.8	131.5	83.6	127.7
Lifetime births per woman	6.9	5.9	2.8	1.3
Annual births (millions)	1.7	5.6	2.1	1.1
Annual deaths (millions)	1.0	2.5	0.8	1.0
Population under age 15 (%)	42	44	35	14
Population age 65+ (%)	3	3	5	20
Life expectancy at birth (years)	36	44	64	82
Infant deaths per 1,000 births	184	100	51	3
Adults with HIV/AIDS, 2003 (%)	na	5.4	na	z
Population living on <US\$2/day (%)	na	91	na	na
GNI PPP per capita, 2004*	na	US\$930	na	US\$30,040

Note: z = less than 0.05; na = not available or not applicable.

\*GNI PPP = gross national income in purchasing power parity divided by population

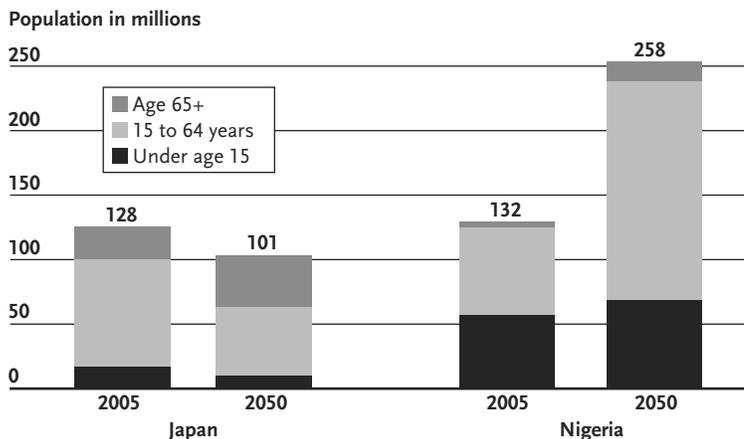
Sources: C. Haub, 2005 *World Population Data Sheet*; UN Population Division, *World Population Prospects: The 2004 Revision* (2005); and Japan International Institute of Population and Social Security Research, [www.stat.go.jp/english/index.htm](http://www.stat.go.jp/english/index.htm), accessed Dec. 6, 2005.

bles. The TFR was above 4.0 in the 1940s, but fell below 3.0 by 1952 and below 1.5 by 1995. Life expectancy rose from about 64 years in the 1950s to 80 years by the late 1990s.

Japan has achieved impressive economic growth and improvements in health, but it is still transitioning from a patriarchal society to a more gender-equal society. Many Japanese women have felt squeezed between their traditional roles as mothers and homemakers and their wish to participate fully in the economy and modern society. Japanese women wait until their late 20s to marry—and many may choose to remain single. The mean age at first marriage for Japanese women rose from 23.0 in 1950 to 27.8 in 2004.<sup>12</sup> Women have their first child at age 28.9, on average. There is some evidence Japan may head into population decline ahead of projections.<sup>13</sup>

In contrast, Nigeria remains a high-fertility, high-mortality country, with 5.9 children per woman on average and a life expectancy of just 44 years. The country's population has increased fourfold since 1950, when it contained barely 33 million people. In 2005, Nigeria's 132 million people made it the most populous country in Africa. Although it exports petroleum, Nigeria's per capita income is about one-half the average for sub-Saharan Africa (US\$930, compared with US\$1,830 in 2004). Some 91 percent of Nigerians live on less than US\$2 per day. Only about one-half of women are literate, and only about 5 percent of Nigerians complete education above high school.<sup>14</sup> Nigerian women marry and have children at young ages—on average before age 20. Nigeria's population is projected to reach 258 million by 2050, and with 27 percent of

Figure 8  
Japanese and Nigerians by Age Group, 2005 and 2050



Sources: Japan International Institute of Population and Social Security Research, [www.stat.go.jp/english/index.htm](http://www.stat.go.jp/english/index.htm), accessed Dec. 6, 2005; and UN Population Division, *World Population Prospects: The 2004 Revision* (2005).

its population still below age 15, the country will have considerable momentum for growth in the second half of the century (see Figure 8).

## Consequences of Growth

What are the consequences of continued population growth in low-income countries? The problems arise when population growth outpaces economic growth, and where countries lack an infrastructure to accommodate the additional load on public services, especially education, health, housing, and transportation. In 2004, President Musharraf of Pakistan said that population growth was “the main factor retarding economic growth, poverty alleviation, and action on joblessness.” Pakistan’s per capita income would be much higher today, Musharraf stated, if population had grown at 2 percent instead of 3 percent annually between 1951 and the 1980s.<sup>15</sup> Pakistan’s population more than quadrupled in size between 1950 and 2005.

In sub-Saharan Africa, population growth since 1950 has outpaced economic growth, agricultural production, and expansion of education and health services. Although the region has thousands of square miles of sparsely populated land and lush rainforest, only part is suited for large-scale agriculture. In many areas insufficient water, overgrazing, deforestation, political unrest, government corruption, and severe health problems have seriously hindered development. There is great potential for expanding the region’s agricultural production, mineral extraction, and developing other industries, assuming that population growth slows and these other obstacles

are addressed.<sup>16</sup> Some African countries have had economic successes. Mali’s cotton production has expanded; Kenya’s dairy production is a fast-growing source of household income; and improvements in cassava cultivation have made this crop a vital food source across Africa. But these and other successes have not compensated for the increased demand from a rapidly expanding population. Per capita agricultural production has deteriorated over the past 40 years and more Africans face food shortages now than ever before.<sup>17</sup> Some development experts warn of a potential humanitarian disaster unless famine-prone areas receive international help.

Continued population growth in rural areas—along with inefficient farming techniques, marginal agricultural land, and poor infrastructure—is fueling migration to urban areas. The UN projects a net decline in rural areas of most countries over the next half-century, because of rural to urban migration.

The high-growth countries are largely rural—at least two-thirds of the population lived in rural areas in 2005, compared with about one-fourth in Europe and the United States—which reveals a tremendous potential for urban growth in these countries. Nearly all the net population growth in the next 50 years will occur in the cities and towns of less developed countries—and most of these high-growth countries can expect to see a continuing exodus from rural to urban areas. Between 2000 and 2030, the percentage of population living in rural areas is expected to decline from 75 percent to 57 percent in the least developed countries.<sup>18</sup>

Urban growth is a double-edged sword with regard to improving health and educational levels—essential prerequisites for economic growth. It is easier to provide services to residents concentrated in urban areas than scattered in rural settlements. In most of the world, urban residents enjoy better health, more education, higher living standards, and lower fertility than rural residents. Yet dense urban crowding also promotes the rapid spread of disease and the concentration of poverty. With inadequate public health infrastructure, public services, or a safety net to support the indigent, the poor in many developing country cities face a bleak and uncertain future, and the gap between urban rich and poor appears to be growing.<sup>19</sup> Inadequate public health services were implicated in an outbreak of bubonic plague in Surat, India, in 1994, for example. Infant mortality has been nearly as high in cities as in small towns and rural areas of Latin America and North Africa.<sup>20</sup> Air and water pollution are often worse in urban areas, leading to an elevated incidence of respiratory diseases and other health problems. And substance abuse, violence, and sexually transmitted

diseases are major problems in many cities in the developing world.<sup>21</sup>

Though people move from rural to urban areas to earn enough to support their families, migration to the cities often weakens the family and social networks that provided care and support for the young, old, or infirm. In most poor countries, there are no government programs or systems to support dependents. They must rely on their families.<sup>22</sup>

## Poverty and Population

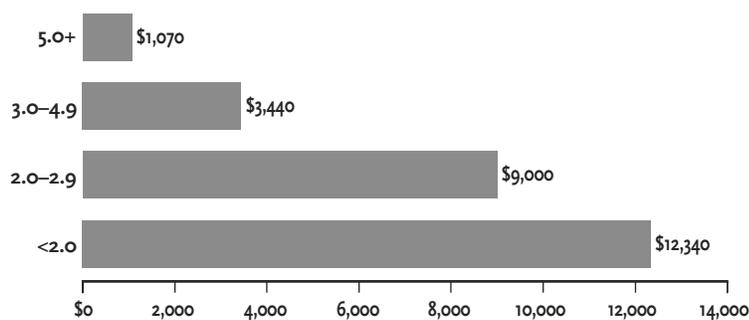
Persistent poverty and rapid population growth tend to go hand-in-hand. Whether one causes the other is not as important as the fact that reducing both can improve the health and well-being of a society. There is a clear link between the high fertility that drives rapid growth and per capita income. On average, per capita income in high-fertility countries is less than one-twelfth the level in low-fertility countries, as shown in Figure 9.

The international community has made the eradication of poverty a primary goal to help improve child and maternal health, ease the problems of rapid urbanization, and ensure adequate nutrition.<sup>23</sup> The percentage of people in poverty has declined in all regions, but is still high in many countries. Just over one-half of the world survives on less than US\$2 per day, down from two-thirds in the early 1980s. The percentage in abject poverty—living on less than US\$1 per day—has declined even more. But there has been little improvement in sub-Saharan Africa, North Africa and the Middle East, or Latin America. Furthermore, the percentage has increased substantially in Eastern Europe and Central Asia. The dismantling of state-run welfare systems and economic shocks generated by the transitions from centrally planned to market economies in Eastern Europe and the former Soviet republics have pushed millions of people into poverty.<sup>24</sup>

The number of people in poverty increased from 2.5 billion to 2.7 billion between 1981 and 2001 (see Table 2, page 14). Despite a substantial decline in East Asia, led by China, the population in poverty increased in every other region. In 1981, nearly one-half of the world's poor lived in East Asia; by 2001, the share had fallen below one-third (see Figure 10). At the same time the number of people in poverty nearly doubled in sub-Saharan Africa, from 288 million to 516 million. About one-fifth of the world's poor live in sub-Saharan Africa, up from about one-eighth in 1981.

Per capita income is falling in some areas because the population is growing faster than economic output. Economists often compare income growth with the expansion of the labor force, an indication of whether the labor

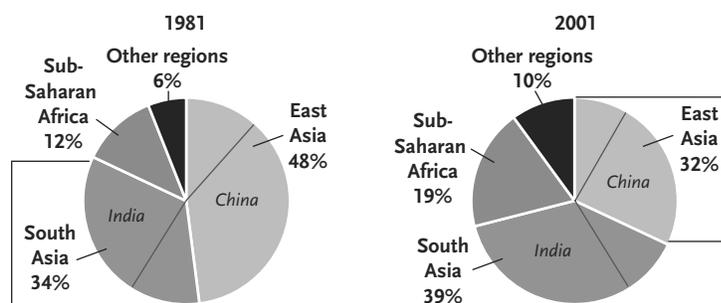
Figure 9  
National Income per Capita by Average Number of Children per Woman, 2004



Notes: Per capita income for the <2.0 children per woman category is \$20,862 when China is excluded. National income per capita is per capita gross national income purchasing power parity (PPP) in U.S. dollars, as calculated by the World Bank. Children per woman refers to the average total number of births a woman would have given current birth rates.

Sources: C. Haub, 2005 *World Population Data Sheet* (2005); and The World Bank, [www.worldbank.org](http://www.worldbank.org), accessed July 21, 2005.

Figure 10  
Regional Distribution of the Population Living on Less Than US\$2 Per Day, 1981 and 2001



Note: East Asia total includes China. South Asia total includes India.

Source: S. Chen and M. Ravallion, "How Have the World's Poorest Fared Since the Early 1980s?" (World Bank; [www.worldbank.org/research/povmonitor](http://www.worldbank.org/research/povmonitor), accessed Nov. 17, 2005).

force is becoming more productive—producing more goods and services with the same amount of labor.<sup>25</sup> The size of the labor force is, of course, affected primarily by changes in the number of people of working age. Between 1993 and 2003, the gross domestic product (GDP) grew at 2.9 percent annually in sub-Saharan Africa, but this rate was nearly matched by a labor force growth of 2.8 percent annually. In contrast, national income growth outpaced labor force growth in South Asia (dominated by India) and Southeast Asia, and—most spectacularly—in East Asia (including China and South Korea). In East Asia, the annual GDP soared 8.3 percent annually over the period, compared with a 1.3 percent increase in the size of the labor force. In sharp contrast, at least 54 countries (20 in sub-Saharan Africa) saw their per capita incomes decline during the 1990s.<sup>26</sup>

Perhaps even more worrisome than the minimal progress toward reducing national poverty, the gap between rich and poor within countries has widened. The wealth gap has always been substantial in Africa and in Latin America and the Caribbean, but it appears to be increasing in most world regions in recent decades, in wealthy as well as in low-income countries. In some South and East Asian countries, inequality began to rise in the late 1980s and accelerated in the 1990s, in part because the income gap between rural and urban areas increased. In sub-Saharan Africa, the income gap widened even within rural areas in countries where land is concentrated in large holdings and that depend heavily on a single export product. In Eastern Europe and the former Soviet Republics, a division emerged between the haves and have-nots as these countries transition to market economies. Latin American countries have among the largest gaps between people at the top and bottom of the income distribution, and the gap widened in the 1990s. In Brazil, the per capita income of the richest 10 percent of the population was 32 times the income of the poorest 40 percent in the 1990s. While inequality in many countries has lessened or remained stable, the general trend in the 1990s was a widening income gap.<sup>27</sup>

Throughout the world, women from low-income families have more children than women from wealthier families in the same society.<sup>28</sup> Women from low-income households also have less education and less access to family planning and other health services that might allow them to have fewer and healthier children (see Table 3).

In general, declining poverty in conjunction with economic development tends to favor declining fertility. South Korea's TFR fell from 6 to 2 between 1960 and 1985, for example, and continued downward; Korea's

2004 TFR of 1.2 was one of the world's lowest. The dramatic fertility decline coincided with considerable investments in education and economic development.

Bangladesh, one of the world's poorest countries, provides evidence that fertility can decline even in the midst of poverty. An estimated 83 percent of Bangladesh's population survived on less than US\$2 per day in 2001, compared with 59 percent for all less developed countries, excluding China. Nearly half of all children in Bangladesh suffer from moderate to severe malnutrition. About two-thirds of adult women are illiterate.<sup>29</sup> Yet fertility declined from 7.0 births per woman in 1975 to about 3.0 births per woman around 2003. Bangladesh's fertility is well below Pakistan's TFR of about 4.8.

Thus, there is no one path to low fertility. Fertility declines in response to complex and unpredictable drivers, confounding many demographers who attempt to explain or predict fertility trends.

### Demographic Dividend

As a country transitions from high to low fertility and mortality, the country's age structure shifts in a way that can yield economic benefits, often referred to as the demographic dividend. This dividend accrues when the population of working age increases relative to the population in the "dependent" ages—the young and old.

Because individual economic behavior varies at different stages of life, changes in age structure can significantly affect national economic performance. The young and old tend to consume more resources, including services, than they produce, and nations with a high ratio of dependents to workers must devote a relatively high proportion of resources to these groups,

Table 2  
Poverty Indicators in Less Developed Regions and Eastern Europe, 1981 and 2001

Region	Population living on less than US\$2 per day					
	1981		2001		Difference, 1981-2001	
	Number (millions)	Percent	Number (millions)	Percent	Number (millions)	Percent
World	2,450	67	2,736	53	286	-14
Sub-Saharan Africa	288	73	516	77	228	3
East Asia	1,170	85	864	47	-306	-37
China	876	88	594	47	-282	-41
Eastern Europe/Central Asia	20	5	94	20	74	15
Middle East/North Africa	52	29	70	23	18	-6
South Asia	821	89	1,064	77	243	-12
India	630	90	826	80	196	-10
Latin America/Caribbean	99	27	128	25	29	-2

Note: Does not include North America or Europe, except for Eastern Europe.

Source: S. Chen and M. Ravallion, "How Have the World's Poorest Fared Since the Early 1980s?" (World Bank; [www.worldbank.org/research/povmonitor](http://www.worldbank.org/research/povmonitor), accessed Nov. 17, 2005).

often limiting economic growth. By contrast, nations with a relatively large share of the population in the prime working ages may enjoy a boost to income and savings because the working-age population tends to produce more than it consumes. Given effective policies in other areas, this dividend can stimulate substantial economic growth.<sup>30</sup> The United States experienced such a dividend in the 1970s, as the highly educated baby-boom generation entered working ages ahead of a much smaller “baby-bust” generation.<sup>31</sup>

While the initial dividend diminishes as workers age and are replaced by a smaller cohort, some economists describe a second, longer-lasting dividend that can arise as a result of the savings and accumulation of wealth during the years of economic expansion. If the wealth is invested wisely, it generates more growth. These demographic dividends are fully realized only where there are investments in health and education, appropriate economic and labor force policies, and a stable and effective government.<sup>32</sup>

Declining mortality, followed by declines in fertility, resulted in a rapid demographic transition in East Asia between 1965 and 1990. As a result, the working-age population grew four times faster than the youth and elderly populations. Strong educational systems and greater international trade enabled several national economies to absorb this “boom” generation into the work force. The demographic dividend fueled the region’s spectacular economic growth: Real per capita income growth averaged 6 percent per year between 1965 and 1990. The demographic dividend accounted for about one-fourth to two-fifths of this growth.<sup>33</sup>

South Korea and China had notable success in reaping the demographic dividend produced by declining

fertility: They invested in education and health and adopted policies that favored economic growth. Their economies are now among the world’s strongest. Koreans enjoy a relatively high living standard, and China’s has improved in many urban areas. However, both countries have rapidly aging populations and very low birth rates, which could eventually threaten continued economic growth.<sup>34</sup> South Korea is projected to lose about 15 percent of its population between 2025 and 2050, when 35 percent of Koreans will be age 65 or older. China’s population is projected to begin a slow decline after 2030, according to the UN Population Division. The UN projects that by 2050, about 23 percent of Chinese—nearly 330 million people—will be age 65 or older.

The transition to lower fertility and moderate population growth has been less pronounced in South-Central and Southeast Asia than that in East Asia. These regions are only beginning to enjoy the economic benefits of demographic change. Countries of the Middle East and North Africa are in various stages of the demographic transition to lower fertility and mortality. Tunisia and Iran, for example, have relatively low birth rates, improved health, and lengthened life expectancy. Their working-age populations account for a growing proportion of the population. Rapid fertility decline in Iran produced fewer children between 1990 and 2000, while the larger cohort of Iranians born between 1980 and 1990 aged into the prime working ages (see Figure 11). While the number of births is likely to increase again as the large 1980s and 1990s cohort has children, the number will remain below pre-1990s levels given current fertility levels. Fertility is much higher in most other Middle Eastern countries, however, even

Table 3

### Indicators of Fertility, Health, and Education for the Poorest and Wealthiest Women in Selected Countries, Around 2000

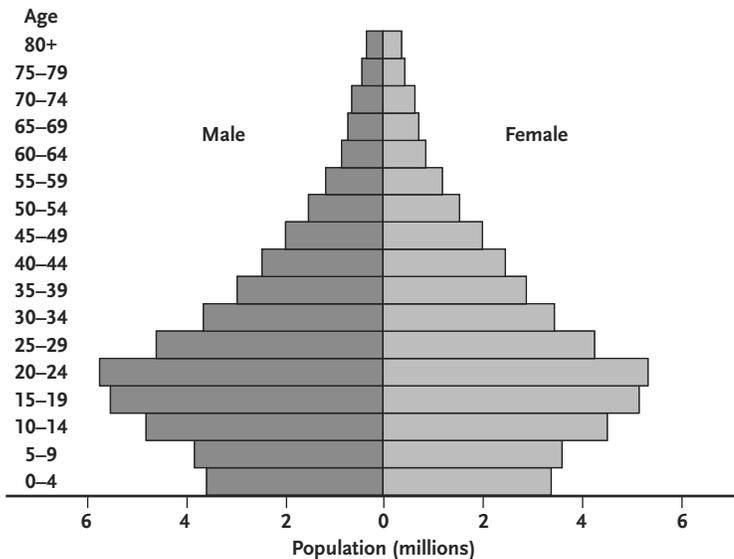
Country	Children per woman		Infant mortality		Percent of women ages 15-49			
	Poorest	Wealthiest	Poorest	Wealthiest	Use modern contraceptives		Completed 5th grade	
					Poorest	Wealthiest	Poorest	Wealthiest
Egypt	4.0	2.9	76	30	43	61	22	91
Mali	7.3	5.3	137	90	4	18	2	42
Nepal	5.3	2.3	86	53	24	55	9	55
Nicaragua	5.6	2.1	50	16	50	71	20	92
Peru	5.5	1.6	64	14	37	58	47	97
Uganda	8.5	4.1	106	60	11	41	24	82
Zambia	7.3	3.6	115	57	11	53	41	95

Note: Based on responses from women ages 15 to 49. Children per woman measures the total number of births a woman would have given current birth rates. Infant mortality refers to the number of deaths of infants under age 1 per 1,000 births in a given year. The poorest and wealthiest women have household assets in the lowest and top fifths of the household wealth distribution.

Source: D.R. Gwatkin et al., *Socio-Economic Differences in Health, Nutrition, and Population*, 2d ed. (2003).

Figure 11

## Iran's Population by Age and Sex, 2005



Source: U.S. Census Bureau, International Data Base, accessed Nov. 5, 2005.

those with high per capita income. Saudi Arabian women have 4.5 children on average, and 37 percent of Saudis are under age 15.

Demographic change cannot guarantee prosperity. Bangladesh, for example, has promoted community health programs that included family planning, and has seen a decline in fertility and mortality. However, the populace remains largely rural, with low levels of education and living standards. Economic growth has lagged behind demographic change in this case.<sup>35</sup> In Iran, job creation has lagged behind the labor market growth. This job shortage, along with the imposition of strict social codes, has prompted a “brain drain” out of Iran,<sup>36</sup> undercutting the country’s ability to reap the full benefit from its demographic dividend.

Many Latin American countries that underwent substantial fertility declines have not garnered as large a demographic dividend because their economic policies, government actions, and investments in human capital did not take full advantage of their growing work forces.<sup>37</sup>

In sub-Saharan Africa, many countries have seen little decline in the traditionally high fertility rates that produce an ever-expanding number of children, and there is little sign of a demographic dividend. More than one-half of Uganda’s population is under age 15, for example. The average for the region is 44 percent under age 15, and just 3 percent age 65 or older. These young people constitute momentum for future growth.

Many of the rapid-growth countries are not poised to take advantage of a demographic dividend. A few are wealthy petroleum-exporting countries—including

Saudi Arabia and United Arab Emirates—with societies that have favored high birth rates. But most high-growth countries are also high-poverty countries with endemic health problems, high illiteracy, and little infrastructure. Few high-growth countries are forecast to enter the wealthy nations’ club in coming decades. Rather, they are the countries least likely to meet the basic health, education, and social goals for 2015 promoted by the international community in the Millennium Development Goals.

## Consequences of Decline

Some of the countries that benefited from a demographic dividend in previous decades now face population decline—South Korea is a prime example, and Thailand and China are not far behind. Researchers have become concerned about the effect of low growth or decline on economic prosperity in low-fertility countries. In addition to economic and social strains associated with an aging citizenry, many governments worry about the potential loss of international prestige and power that decline might bring.<sup>38</sup> With fewer people to produce and consume goods and services, their economies may begin to shrink.

Most of the world’s wealthiest countries will see little or no population growth between 2005 and 2050. Of the 30 industrialized countries that make up the Organization of Economic Cooperation and Development (OECD), only the United States, Mexico, and Turkey are projected to add more than 10 percent to their population size in the next 45 years.

The population decline faced by most low-fertility countries is extremely slow—initially discernable only by carefully tracking demographic trends. But the shifting age structure is much more obvious. Empty classrooms are among the earliest signs, reflecting sagging school enrollment because of declining births. In Japan, the number of elementary and junior high students fell from 13.4 million in 1994 to 10.9 million in 2004, and continues downward. More than 2,000 elementary and secondary schools closed in the last decade, and an estimated 63,000 teachers lost their jobs.<sup>39</sup>

The effect of population decline on labor markets may be less obvious, because labor demand can contract or expand in response to many factors, including economic cycles, globalization, economic restructuring, and international competition. Indeed, some countries with declining populations have been plagued by high unemployment rates in recent years. Yet governments and businesses in Europe have been planning for a shortfall of employees with the skills they need. Some employers

are looking at filling new jobs with retrained older workers rather than newly trained young workers.<sup>40</sup> Employers may recruit more workers from abroad to fill jobs (see Box 3, page 18). In 2004, foreigners made up about 9 percent of the labor force in Germany and Austria, and 5 percent in France.<sup>41</sup> Perhaps more telling, foreign-born workers accounted for half of the net growth of the U.S. labor force between 1996 and 2000.<sup>42</sup>

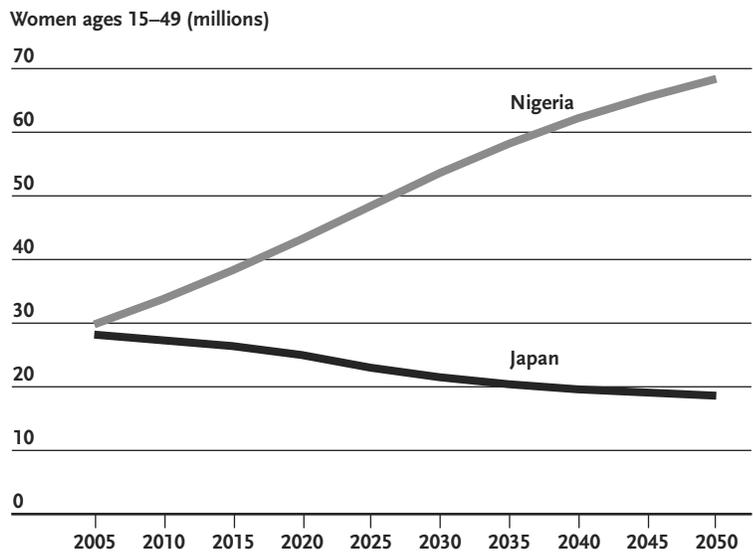
Just as the number of people of working age declines, so do women in their childbearing ages. In Japan, the number of potential mothers is projected to decline by 9.6 million between 2005 and 2050, a marked contrast to the 38.6 million increase in this group in Nigeria (see Figure 12). Even if birth rates remain at the same level, the annual number of births will decline in Japan, just as the number will increase in Nigeria, because of the change in the number of women ages 15 to 49.

Another visible sign of population decline and lower mortality is population aging. While it partly represents success at keeping older people healthy longer, population aging increasingly concerns policymakers and the public in many countries.<sup>43</sup> An aging workforce, combined with slow economic growth, can affect marriage and childbearing patterns. One recent study found that many young people face difficulties getting established in their careers in an older, stable work force, and thus delay the transition to independent living.<sup>44</sup> This, in turn, leads them to postpone having children, which further depresses fertility rates.

Japan, Italy, and Germany are already feeling the effects of population aging. About one-quarter of Italians were age 60 or older in 2005 and, by 2050, 41 percent are expected to be age 60 or older. By 2050, the percentage of the population age 60 or older is projected to be 42 percent in Japan and 35 percent in Germany, up from about 25 percent in those countries in 2005, according to the UN Population Division.

The wave of older people leaving the workforce and overwhelming pension systems is a looming crisis in these countries. Many Europeans retire by age 60 and receive a government pension. As the proportion of retirees to workers increases, each working person supports more nonworking people. This high dependency ratio creates an untenable situation in countries with “pay-as-you-go” retirement systems (such as the Social Security system in the United States) that rely on current workers to support retired workers. With average life expectancy near 80 and relatively young retirement ages, an increasing number of people will need retirement income for 30 or more years. A recent economic analysis also forecast a global deficit in household wealth because of population aging in the countries with the

Figure 12

**Women of Childbearing Age in Japan and Nigeria, 2005–2050**

Source: UN Population Division, *World Population Prospects: The 2004 Revision* (2005).

largest economies, including the United States.<sup>45</sup> Even in countries still seeing population growth, the older population is growing faster than other age groups.

## Policies to Influence Fertility

The decision to have a child is recognized as a personal matter in most societies, and many governments have tread lightly in their attempts to adopt policies to encourage or discourage women to have children.<sup>46</sup> There have been examples of excesses. China's coercive policies to control pregnancies are considered a violation of human rights by most international standards, as were Romania's attempts to increase its birth rate in the late 1960s by outlawing all contraceptives and induced abortions.<sup>47</sup>

## Responses to High Fertility

In 2003, about one-half of less developed countries (and three-fourths of the least developed countries) thought their fertility and population growth rates were too high.<sup>48</sup> Even greater proportions of both groups thought that their mortality rates were too high. The policies and interventions adopted to address these problems vary tremendously, as do their effectiveness.

Early attempts to slow population growth focused on promoting the idea that smaller families were better, educating couples about how to space and limit their pregnancies, and providing access to family planning services. Such policies and programs were credited with substantial reductions of fertility around the world. However, many

questioned the effectiveness of such programs given the economic development and social advances occurring at the same time. Others found family planning programs too limited an approach to health problems, while others faulted them for infringing on traditional values or human rights. In general, governments have shied away from coercive policies to prevent women from getting pregnant or that penalize couples with “too many” children.<sup>49</sup> Highly restrictive policies stir controversy. Local

laws barring candidates with more than two children from running for office in India, for example, have generated considerable criticism.<sup>50</sup> China and Vietnam have imposed stiff penalties and disincentives for having too many children.

The policy response to high fertility has shifted dramatically in recent decades, from one focused on family planning programs to much broader policies that address a diverse set of issues: maternal and child health;

### Box 3

#### International Migration

Migration is the most volatile demographic variable—the volume, origins, and destinations of migrant flows can fluctuate in response to world events and economic and environmental conditions. In 2005, about 190 million people—3 percent of the world population—were international migrants, according to UN estimates.<sup>1</sup> They live outside their country of birth. Migration continues to be an important determinant of the size and characteristics of populations in some countries and especially in certain areas within countries.

There are four important aspects of migration with regard to demographic change:

- **International migration is the exception** to the norm: Most people live and die in the country where they were born.
- **International migration is highly selective** as to who moves and where they go. More educated, higher-skilled people tend to move into countries where they have a personal connection (through networks) and where they think they can find a job.
- **International migration is likely to continue** in the future—but flows will almost certainly shift in unexpected ways.
- **Immigration cannot make up for natural population decrease over the long term.** In most low-fertility countries, immigration would have to rise to politically unacceptable levels to make up for natural decrease and prevent population decline.

Several aspects of the modern age have favored increased international migration, including the breakup of the former Soviet Union and economic transitions in Eastern Europe, the economic boom in selected Asian countries, the new wealth in the oil-rich Persian Gulf countries, globalization, and the widening economic disparity between countries. These trends lead some to call this an era of mass migration.<sup>2</sup>

Migration specialist Phil Martin links the recent increase in population movement to three revolutions: the communications revolution, the transportation revolution, and the human rights revolution. The first two revolutions make it easier for people to learn about job opportunities in other countries, to move to where jobs are, and to link to support networks within countries. The human rights revolution has protected immigrants from deportation and enhanced their opportunities in receiving societies.

Between 1995 and 2000, around 2.6 million migrants per year moved from the less developed to more developed regions. More than one-half of these settled in the United States and Canada.

About 40 percent of international migrants move from one less developed country to another: From Paraguay to Brazil, from Ghana to Côte d'Ivoire, or from Myanmar to Thailand, for example. Foreigners made up the majority of the work force in several smaller Persian Gulf states. In Southeast Asia, migrants from Cambodia, Indonesia, or Myanmar seek jobs in Singapore, Thailand, South Korea, and other newly industrialized countries in Asia.

Every year migrants send millions of dollars back to their home countries. These remittances are an important source of income for immigrant's families and a major contributor to the national incomes in some countries. In 2000, remittances from abroad accounted for more than 10 per cent of the gross domestic product in Albania, Bosnia and Herzegovina, Cape Verde, El Salvador, Jamaica, Jordan, Nicaragua, Samoa, and Yemen.

While most people move to take advantage of better economic opportunities, some 15 million international migrants are refugees or asylees who were forced from their home countries by political violence or the threat of persecution. In the late 1990s and early 2000s, for example, millions left Afghanistan for Iran and Pakistan—although many later returned. Refugees often return to their home countries when conditions stabilize.<sup>3</sup>

Large migration flows from the less developed to the more developed countries include the movement from Asia and Latin America to North America and from North Africa and the Middle East to Europe. Smaller flows from Latin America to Europe and from Asia to Australia have accelerated. Migration makes up a significant part of the population growth in countries in which fertility has sunk so low that the annual births are less than annual deaths.

The flow from one industrialized country to another is relatively small with a few exceptions: Ethnic Germans poured into Germany from former Soviet republics, and immigrants and refugees from Eastern Europe entered other European countries in the wake of the civil war in the Balkans and brighter job opportunities in Western Europe than in their home countries.

Large and sustained migrant flows can alter the fertility levels when migrants come from countries with higher fertility norms. In the United States, for example, more than one-half of immigrants are from Latin American countries where fertility is much higher than in the United States. Although migrant families tend to adopt the lower fertility norms of their new

gender equality; and poverty reduction.<sup>51</sup> Over the past 15 years, international groups have called on governments to promote human development and stabilize population growth rather than set specific policies to lower fertility. The new approach called for investments in individuals' health, education, and rights—particularly for women. The heart of the new agenda is the belief that responding to individual needs is a more humane and effective way to slow population growth

country over time, they tend to have larger families than U.S.-born couples.<sup>4</sup> Similarly, Turkish immigrant women in Germany marry earlier and have higher fertility than German-born women.<sup>5</sup>

Immigration can also introduce new health issues—such as infectious diseases or chronic health problems endemic in the countries of origin but less common in destination countries.

Migration, in concert with fertility and mortality, changes the size and characteristics of the populations in the sending and receiving countries. The cultural and ethnic differences between immigrants and the receiving community can spark resentment and conflict. Accordingly, most countries try to limit the number and type of people who immigrate, and struggle to enforce restrictions and facilitate integration. But immigrants often are an important segment of the labor force in these countries. Immigrant-sending countries with limited economic opportunities reduce the stress of rapid population growth through emigration and reap billions in emigrants' remittances, yet these countries also see their most educated or skilled people leave. In many ways, migration involves a series of trade-offs for both sending and receiving countries.

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than the old model that focused on family planning. In addition, there is a growing recognition of the importance of gender and of the links between poverty, gender roles, and inequality and health—including reproductive health (see Box 4, page 20). Development efforts must address all these factors to be successful. UN Secretary-General Kofi Annan acknowledged the links between these factors in a recent speech:

"The eradication of extreme poverty and hunger, cannot be achieved if questions of population and reproductive health care are not squarely addressed. And that means stronger efforts to promote women's rights and greater investment in education and health, including reproductive health and family planning."<sup>52</sup>

While many less developed countries have improved health and opportunities for women, many have fallen short. Political conflicts, natural disasters, economic problems, and health crises, especially HIV/AIDS, have hindered the progress in many countries. Many countries rely on foreign assistance to fund health and development projects, and the aid has fallen short.

### Responses to Low Fertility

As early as the 1930s, scholars in the United States and Europe began to recognize that the average family size was falling in the industrialized countries and warned about the long-term prospects of fewer workers, population decline, and economic stagnation.<sup>53</sup> Many of these countries experienced a post-World War II baby boom, which quieted fears for awhile, but they resurfaced in the 1980s and 1990s as fertility rates fell to unprecedented lows. By 1999, nearly all countries in Western and Eastern Europe (plus a number of countries in other regions) saw fertility rates fall below the two-child replacement level, with few signs of a rebound. Concern about low fertility, aging, and population decline resumed—and is a constant topic in the media. In 2003, 58 percent of more developed countries expressed concern about low fertility rates; 76 percent noted aging and 62 percent cited the size of the working-age population as major concerns.

Russian president Vladimir Putin referred to a low birth rate as a national problem in 2004: "There are more and more families in the country with just one child." Putin stated, "We need to make being a mother and being a father more prestigious and create conditions that will encourage people to give birth and raise children."<sup>54</sup>

Governments work to mitigate the effects of aging and population decline through three main avenues, two of which affect population size:

- Increase fertility by adopting policies that lower the costs of having and raising children.
- Increase the immigration of working-age people; and

## Box 4

**Why Gender Matters**

The relative power held by men and women and the dynamics of the relations between them affect demographic processes. Gender norms affect fertility in many ways. In societies in which women have lower literacy and less access than men to mass media, women may know relatively little about reproductive health, including how to avoid unwanted pregnancies. Where men have more power than women, women may find it hard to negotiate contraceptive use.<sup>1</sup> Where women have limited opportunities outside the home, bearing children becomes an important measure of their worth to the family and society. Barren women may be stigmatized.

The relationship is more complex in low-fertility countries, and seems to vary with employment opportunities and with social norms about men's participation in homemaking and childrearing. In general, women who work outside the home have fewer children than mothers who do not work outside. Among other explanations, the costs of childcare and logistical challenges of balancing home and work duties make each additional child more expensive. Women weigh their potential income from paid employment against costs and less tangible rewards of having another child. Yet women in developed countries increasingly combine jobs and motherhood. Indeed, the entry of women with young children into the workforce of more developed countries was one of the most striking and widespread trends of the last quarter-century.<sup>2</sup>

Mothers who do not work may be in a more traditional relationship based on a male breadwinner and female homemaker. But this relationship has changed in some countries, especially where employment of mothers who have young children is already commonplace. Fertility is higher where women have more support from their spouses for housework and childrearing, access to government-provided family support resources, or both.<sup>3</sup>

Son preference is another manifestation of gender norms that can influence fertility levels. In several South Asian and Middle Eastern countries, couples may continue to have children until they have a son, thereby pushing up overall fertility. Authors of a study of six countries with strong son preference—Bangladesh, Egypt, India, Nepal, Pakistan, and Turkey—estimated that the number of women pregnant at the time of the survey would have been 9 percent to 21 percent lower if there were no son preference.<sup>4</sup> In India and China, son preference has led to sex-selective abortions and the abandonment of female babies on such a scale that there is now an imbalance between girls and boys.

Gender inequality affects the health of women and girls, especially in countries with relatively low life expectancy and widespread poverty. Where men are valued more than women, girls and women tend to receive less nutrition and health care than men and boys when resources are scarce. Malnutrition and untreated medical problems undermine women's health throughout their lives and contribute to persistence of high maternal mortality rates in poor countries. An estimated one-half million mothers die from pregnancy-

related causes each year; at least 8 million suffer lifelong health problems linked to pregnancy and childbirth. Most of these injuries and deaths could be prevented by health interventions that are common in rich countries but have not been a priority in poor countries. A recent UN Population Fund report cites the lower value placed on women's lives as a major obstacle to reducing maternal mortality rates in less developed countries.<sup>5</sup>

Similarly, parents in many developing countries are less likely to send a daughter than a son to school. In some cultures, educating girls is considered a waste of family resources because girls join their husband's family when they marry, and will not contribute to their own parents' support. Where girls must travel a distance to school, parents fear for their daughters' physical safety and keep them home. And parents often keep older daughters out of school so they can help care for younger siblings.

Women are more likely than men to be illiterate, although the picture is much brighter among children and young adults. The gender gap in education is closing at the elementary level in many countries, but girls are still much less likely to stay in school through the secondary level. Keeping girls in school longer has become a high priority among development experts because girls with a secondary education wait longer to marry, have fewer and healthier children, and have higher incomes. Many social scientists see education as the key to improving women's status, because education is linked with income, health, and involvement in community decisionmaking. Educating women also enhances human capital—increasing women's education was key to the demographic dividend that boosted the economies in Asian countries such as South Korea. With a greater voice, women would be able to influence policies and programs that can improve their and their families' lives, and contribute to their communities' well-being.

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- Ease the economic burden of population aging by, for example, raising the retirement age, encouraging part-time work among older citizens, and restructuring pension, social security, health, and tax systems.

Although policies to encourage women to have more children have met with minimal success so far, many experts feel that the right policies and sufficient benefits would encourage childbearing. European women say they want more children than they are having, which suggests that fertility might increase if couples found it easier and less expensive to raise children the way they would like. European and Japanese women say they want between two and three children, yet they are having 1.4 or fewer children.<sup>55</sup> Even Americans do not have as many children as they say they would like.<sup>56</sup>

Governments are now shifting toward a more comprehensive approach, combining fiscal policies (allowances, taxes, and bonuses) with policies that allow parents to combine work with family life. Affordable and quality child care and flexible work policies, for example, are seen as key to easing the conflicts between employment and childrearing.

France has some of Europe's strongest policies for encouraging families to have children, and one of the highest fertility rates in Europe. In 2005, France increased its child allowance to encourage higher-earning couples to have a third child. The new policy doubled the tax credit for in-home child care and offered discounts on transportation and retail products for larger families.<sup>57</sup>

More governments want to change society's attitudes toward children, to enhance the value of children, and to help families raise and educate them. Governments also see the importance of further changing gender relations both in the family and at work and, in particular, encouraging both parents to raise children.<sup>58</sup>

#### Family Support Policies

Family allowances are government cash payments to families on the birth of a child to compensate them for a loss of income or increase in expenses. These allowances have been part of family policies for more than a century, and are provided by more than 80 countries worldwide. Similarly, many countries (including the United States) provide tax credits or tax benefits to help defray the costs of children. But, family allowances may be less important today than provisions such as maternity leave and child care that allow women to both care for newborns and continue their careers.<sup>59</sup>

Governments can also support families by providing low-cost housing loans. Some research indicates that lowering the cost of housing could encourage couples to have children earlier than they otherwise would. Other

family policies, such as promoting marriage and discouraging divorce, could potentially influence the formation of families and thereby the timing of fertility.<sup>60</sup> If couples have children earlier in life, population aging could be slowed because a shorter time span between generations contributes to a more youthful age structure.

#### Family-Friendly Employment Policies

Policy measures to ease the burden of combining work and family responsibilities include child-care assistance, parental leave, and flexible working arrangements. The rationale for this support goes well beyond promoting fertility. Encouraging mothers to enter and remain in the work force helps increase the size and quality of the work force and can promote gender equity.<sup>61</sup> The United States and a number of other countries that do not have policies expressly to increase fertility, have enacted family-friendly policies that may have the unintended effect of increasing fertility.

Subsidized child care ranges from tax breaks for child care to a more comprehensive state-supported child-care system like Sweden's.

Parental leave is a common benefit, but the length and economic benefits vary tremendously. The United States provides less leave than most other developed countries, while Norway's policies are especially generous: All Norwegian mothers have a right to return to part-time work after childbirth, and fathers are required to take some parental leave entitlement to encourage sharing child-care responsibilities.<sup>62</sup>

Regulations affecting work life, such as flexible hours, part-time work, and family-related leave, can also help employees reconcile work and family responsibilities.<sup>63</sup> Many women say they prefer to work part-time while they have children at home, but part-time jobs have been scarce.<sup>64</sup> Employers, especially in southern Europe, have been slow to break out of the traditional full-time job format.

#### Immigration Policies

With much of the world still young and growing, some analysts suggest that working-age immigrants from developing countries could fill the labor gap in countries with aging populations. In the last half-century, European and other industrialized countries have relied on immigrant labor. But political and social forces in the receiving countries influence immigration policies, and most countries restrict immigration.<sup>65</sup> Immigrants often provoke strong public sentiment in the receiving countries because they are usually of different racial or ethnic backgrounds, speak different languages, and belong to different religions and cultural traditions. The native-born may view immigrant

communities as a threat to their jobs and their own ethnic culture. Even though many businesses rely on immigrant labor, government officials concerned about re-election are keenly aware that the prospect of large new waves of immigrants is politically unpopular.

A UN report found that immigration would need to rise to twice 1990s' levels to prevent the population of Europe from declining. Many times more immigrants would be required to prevent population aging—that is, to maintain a constant ratio between working-age and retirement-age people—because the working-age population is declining faster than the overall population.<sup>66</sup> Germany, for example, would need 3.4 million net immigrants each year to maintain a constant ratio of working-age people (ages 15 to 64) to people age 65 or older. In recent years, net immigration in Germany has ranged between 83,000 and 270,000. For most low-low fertility countries, “replacement migration” is not a realistic strategy for slowing population decline because, even if the economy could absorb the necessary number of immigrants, the influx would cause unacceptable political and social disruption.<sup>67</sup> Most governments concerned with population aging and decline favor policies to raise fertility rather than increase immigration.

Immigration is a more feasible strategy for preventing decline where fertility is closer to replacement level, as it is in the United States. The relatively large flows of immigrants to the United States have both supported the economy and prevented an overall decline in fertility because the immigrant populations tend to have higher fertility than native-born Americans. Socially and politically, immigration will remain a sensitive issue, especially in areas that are home to large groups of immigrants. Nevertheless, immigration is likely to continue in all developed countries and will remain a policy option for influencing population size.<sup>68</sup>

## What Lies Ahead?

Demographically, the world underwent profound change in the past century and it will do so again in this century. We are now in the second phase of global population growth. The experience of the last 50 years has

taught us that countries can undergo radical social and demographic change in a very short period of time. Fertility rates can fall from seven children to two in less than two generations, but there is no guarantee this will happen everywhere. The third phase—the slowing or cessation of population growth—is routinely projected for all countries, but that is not certain.

We have learned that very rural populations in developing countries can experience remarkable declines in fertility. But we have also learned that incipient declines can come to a halt or that a country's fertility may not decline at all. The future course of the birth rate remains the single most potent determinant of global population growth for the rest of this century. Although much is known about what influences fertility levels, predicting fertility changes has proved difficult.

Still, we know that the demographic divide will persist. At the end of this century, the vast majority of global population will reside in today's developing countries of Africa, Asia, and Latin America. Some countries in those regions are likely to become major players of the 21st century, both economically and demographically.

This century will likely bring new demographic concerns beyond population growth. Unprecedented societal aging in most developed countries will likely intensify the immigration debate. Immigration will probably not be a complete solution for Japan and Europe, as they are less accustomed to integrating immigrants than the United States. But these nations and regions will almost certainly turn to immigration as a partial remedy for natural decline. The struggle to raise birth rates now being seriously enjoined by low fertility countries will receive more and more attention, although not necessarily success.

Countries with serious HIV/AIDS epidemics, primarily in Africa, will be transformed as the number of AIDS deaths climbs. Similarly, the success of campaigns against HIV in lower prevalence countries will have a significant impact on the world's demographic future.

It is remarkable that, despite the many new developments over the past 50 years, one fact looks very much the same. Populations are growing most rapidly where such growth can be afforded the least. In that way the story has changed little.

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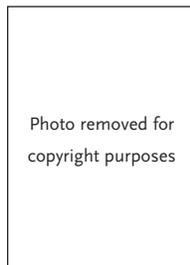
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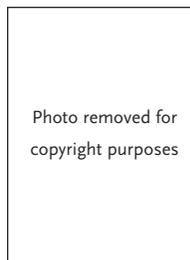
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