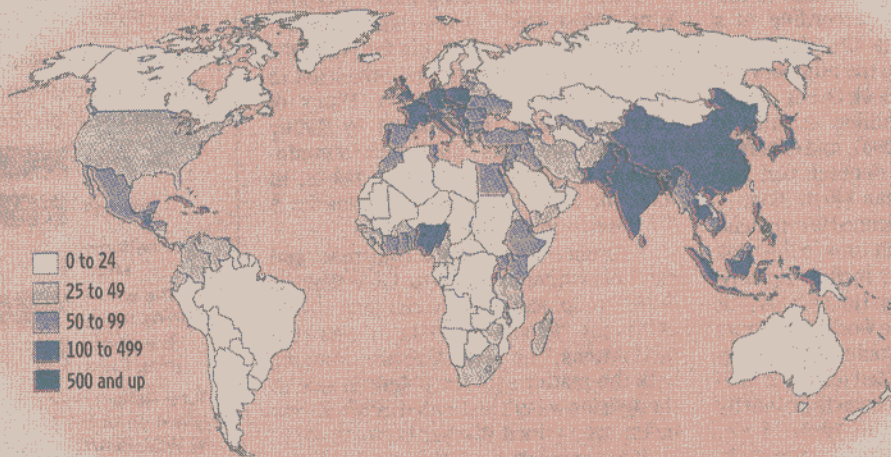


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Malthus May Have Been Wrong

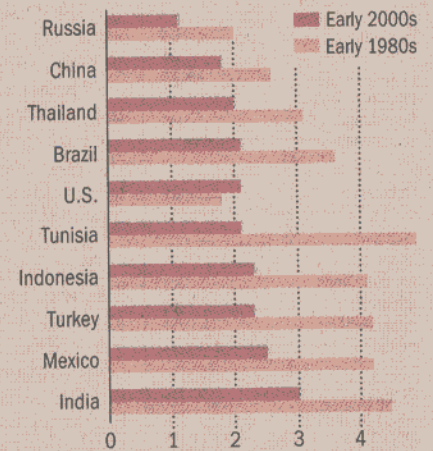
Though the planet's current population continues to rise, the U.N. says declining birth and fertility rates mean the world's population could level off by midcentury.

Population Density in 2000 (per square kilometer)

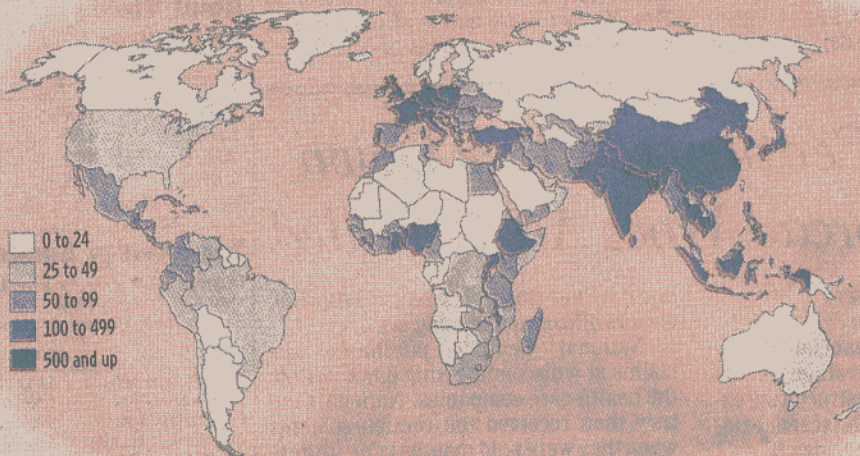


Dramatic Drop

The average number of children born per woman has decreased in most countries.



Population Density in 2025 (per square kilometer)



The Median Age Today...

Median age of population in 2000



Up to 20 20 to 30 30 to 40 40 and up

Increases in the Future

Median age of population in 2025



Global Baby Bust

Economic, Social Implications Are Profound as Birthrates Drop in Almost Every Nation



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On Jan. 1, Estonia's president sounded an unusual warning to his 1.4 million countrymen: "Let us remember," said Arnold Ruutel in a live TV address, "that in just a couple of decades the number of Estonians seeing the New Year will be one-fifth less than today." Estonia, where the birthrate has declined from 2.1 children per woman to 1.2, is no isolated case. While Western Europe has long experienced declining birthrates, the same trend has

more recently emerged in Eastern Europe, Asia and Latin America. More startling, fertility rates—defined as the average number of lifetime births per woman—are now declining more rapidly than predicted in India, Indonesia, Brazil, Mexico and Iran.

The upshot: Contrary to 20th-century predictions of an explosively overpopulated world gripped by Malthusian famine, a global population decline may be in sight.

"What we're seeing right now is a revolution in fertility," says Joseph Chamie, direc-

tor of the United Nations population division. Just three years ago, the division had projected a midcentury fertility rate in its key group of major developing nations of 2.1 children per woman, the rate at which the population would replace itself. Last year, based on more comprehensive data, the group revised that projection downward to 1.85.

That means the world's population could level off at about nine billion by midcentury from six billion today, the U.N. division says. (A decade ago, its projected peak number was 12 billion.) Then the move could be downward: A 2001 study by researchers at Austria's highly regarded In-

The world's population could decline by nearly 500 million people by 2075.

ternational Institute for Applied Systems Analysis, published in the journal *Nature*, predicted a decline of nearly 500 million in the world's population by the last quarter of the century.

The World Bank differs, projecting that global population will stabilize at between nine billion and 10 billion by the end of the century but won't shrink. Still, its current estimate is 20% to 30% lower than was forecast in the 1960s and 1970s.

Of course, all of these projections are based on massive assumptions—that there won't be a nuclear world war, that China will continue to mandate population control. It's certain for now, however, that fertility rates are falling in virtu-

ally every country in the world. The U.S. and France are two of the few exceptions.

In developing countries, fertility rates are declining for a variety of interconnecting reasons. Among them: women are becoming more educated, leading to greater employment opportunities and more financial independence; increased urbanization, which makes it harder for people to sustain more than one or two children; and the increased availability of contraceptives.

"The factors that have long operated in Europe are now emerging in developing countries," says Mr. Chamie.

In some countries, families are responding to government initiatives to keep the number of children down. In Iran, a family-planning campaign has succeeded in reducing the birthrate from four children per woman in the 1980s to two today—a sharp reversal from the Khomeini regime, under which women were urged to bear more "soldiers of Islam."

Women in Iran are now only granted maternity leave for three children. Family-planning clinics, closed at the beginning of the Khomeini regime, are now operating in all remote corners of the country, educating young women about contraceptive options. As a result, Iran is the youngest country in the world, with 65% of its population under 30.

Sub-Saharan African nations are special cases. The AIDS epidemic has already had a devastating effect on the continent's population, and fertility rates have plunged (though AIDS is not the only reason). But demographers are unclear what the outcome will be.

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World-Wide Baby Bust Has Profound Implications

Continued From Page B1

Some argue that African parents may choose to have more children to offset AIDS-related deaths; others say parents will have fewer children, because they don't want them to be orphaned.

The implications of a shrinking population are profound. With women in many poorer countries having fewer children, and having them later in life, it has become easier for many to hold jobs and become financially independent.

In Japan, which has the world's longest life expectancy, the low birthrate means the population will start declining in 2006, and soon there won't be enough young people to support the growing number of elderly.

Like other developed countries facing a rapidly aging population, Japan will have to find ways to improve productivity, or it will likely be forced to encourage immigration to compensate. As another example, Germany would have to import nearly half a million immigrants a year to keep the working-age population stable up to 2050 at current birth and death rates.

In Brazil, the birthrate over the past decade has declined to 2.7 children per woman from 2.1, bringing a mix of economic benefits and burdens.

The sharp decline in Brazilian fertility rates dates from the 1970s, when the then-military government began subsidizing sterilizations of women undergoing Caesarean deliveries, says Tania Lago, a former senior Health Ministry official. In the early 1980s, Brazil's public-health system began distributing contraceptives free of charge. And despite the opposition of the country's strong Roman Catholic church, some 40% of married women of reproductive age in Brazil are sterilized.

The modern, consumerist Brazil portrayed in popular soap operas also had a strong impact, as studies have shown a correlation between higher television viewership and lower birthrates, says Anibal Faundes, senior researcher at the Center for Research of Mother and Child Health in Campinas, a city north of São Paulo.

Among other factors, Mr. Faundes

says, "successful families in the *novelas* had fewer children. It was meant just to keep the plot simple, but it accidentally contributed to reducing fertility."

The combination of lower population growth and quashing of hyperinflation in the mid-1990s enabled millions of Brazilians to enter the consumer class. At the same time, however, the lower birthrate is cutting into the work force and enlarging the financial hole in Brazil's generous social-security system.

Mexicans are also finding a declining birthrate a mixed blessing. Fertility there has dropped precipitously, from averaging seven births per family in the 1970s, to just over two births today. Consequently, Mexico now has the potential to have more people in the labor force than unemployed.

"For the first time in our history we have the opportunity to create a middle class," says Agustin Escobar, a sociologist with the Center for Advanced Research in Anthropology in Guadalajara.

The downside: Because Mexico's birthrate dropped relatively recently, the country has a surfeit of teenagers today and needs to create almost a million new jobs a year to keep pace with those entering the work force, something the country has failed to do for the past three years. And long term, a shrinking population makes it harder to compete with other emerging markets for foreign investment.

In the short term, a declining birthrate can produce what is known as a demographic bonus: reduced labor costs as a greater proportion of the population works, and a boost for the national economy from the larger number of the people who can spend and invest.

Thailand has benefited from a demographic bonus over the last 25 years. China, where the current fertility rate of 1.8 is below the replacement level, partly because of stringent family-planning policies, is in the middle of a demographic bonus now. India will likely see the same as its fertility rate falls, says the U.N.'s Mr. Chamie.

The size of India's massive population—now over one billion—tends to obscure some significant progress in curbing birthrates, especially in the coun-

try's southern states. There, educated women are increasingly putting off marriage to develop their careers in the country's booming information-technology industry.

Their experience demonstrates how increasing prosperity, high literacy rates and women's empowerment can directly impact fertility. In the states of Kerala and Tamil Nadu, for example, population growth has dropped to replacement levels.

Mr. Chamie estimates that between 15% and 40% of the growth in per capita income in East Asia over the past several decades can be attributed to a temporary bulge in the work force as fertility declined swiftly.

Some countries concerned about their shrinking work force are trying to encourage people to have children. In Australia, a mortgage provider late last year began selling loans with a "Pregnant Pause" option, allowing couples to put off mortgage repayments for three months if they have a child. The Fertility Society of Australia wants teenage girls in school to be taught about the dangers of putting off pregnancy until they're much older.

But such measures have proved ineffective. Singapore has had state-supported dating services for years, organizing tea parties and outings as a way to introduce men to women. In April it also launched a "baby bonus" package that pays parents to have more than one child; they get about \$275 a year for the second child, and \$550 a year for the third. Still, the tiny country's birthrate last year hit a historic low of 1.4. Similarly, several Scandinavian countries have championed a "nanny state" by increasing leave for parents, but such measures have had only a small positive impact, according to researchers.

some countries find it hard to offer such incentives because of unwelcome associations. "In Germany and Italy it's difficult to talk about such policies because they'd be accused of Nazi or Fascist tendencies," says David Coleman, a professor of demography at Britain's Oxford University.

(A Catholic country with a long tradition of large families, Italy has only half as many births annually as it did in the 1980s. Its birthrate of 1.19 is now one of Europe's lowest.)

The anomaly among developed countries is the U.S., whose birthrate of two children per woman is close to the replacement rate of 2.1—and this despite what most Europeans would consider nonfriendly policies toward working women and families.

American women receive less paid maternity leave than most of their counterparts in the developed world. They also receive fewer subsidies for day care.

And the U.S. population is growing, thanks in large part to a relatively permissive immigration policy. Over the next 50 years, the U.S. population is projected to rise to 400 million from 280 million if the current rate of increase continues. About 80% of that increase would represent new immigrants or descendants of immigrants.

Not so in Russia. A decade ago, Russia had one of the highest birthrates in Europe, but the rate has since plunged 40%. Russia's population today is 145 million.

Barring a sudden surge in births, there will be only 105 million Russians in 50 years' time, according to the U.N. population division. That's why, when President Vladimir Putin two years ago warned his parliament about "a serious crisis threatening Russia's survival," he wasn't referring to the economy or to the war in Chechnya.

He was talking about babies.