

POPULATION AGING: IT'S NOT JUST THE BABY BOOM

BY ALICIA H. MUNNELL*

Introduction

The retirement of the baby boom — those people born between 1946 and 1964 — is almost upon us. The leading edge of this famous cohort turns 62 in 2008. With the aging of the baby boom, the population of the nation is about to gray rapidly over the next three decades. The purpose of this *brief* is to put the baby boom and its impact on population aging in perspective. Specifically, the baby boom is not the reason for the aging of the population; the aging is the result of long-term trends of increasing longevity and declining fertility. The bust-boom-bust pattern in fertility rates that resulted in the baby boom simply changes the path to an older society. Thus, the baby boom is not “a pig in a python,” a somewhat graphic metaphor frequently used to suggest that the large cohort is just passing through, and life will return to normal once the last member dies. Rather, the nation is facing a permanent change in its demographic profile.

The Aging of the Population

In 2000, 12 percent of the U.S. population was age 65 or older. By 2025, the share of the population aged 65 and over is expected to rise to 19 percent, higher than the share of older residents in Florida today.¹ This has led commentators to describe the future United States as “a nation of Floridas” (see Figure 1).²

* Alicia H. Munnell is the director of the Center for Retirement Research at Boston College (CRR) and the Peter F. Drucker Professor of Management Sciences at Boston College's Carroll School of Management. The author would like to thank her colleagues at the CRR for data support and for reviewing the draft.

¹ U.S. Bureau of the Census (2000).

² Peterson (1996).

AN ISSUE IN BRIEF CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE

APRIL 2004, ISSUE IN BRIEF 16

INSIDE

INTRODUCTION	1
THE AGING OF THE POPULATION	1
THE BUST-BOOM-BUST IN FERTILITY RATES	5
CONCLUSION	7
REFERENCES.....	7
FIGURE 1. STATES WITH AT LEAST 18 PERCENT OF THE POPULATION 65 AND OVER, 2000 AND 2025.....	2
FIGURE 2. POPULATION DISTRIBUTION BY AGE AND SEX IN THE UNITED STATES, 1880 AND 2080	2
FIGURE 3. IMMIGRATION TO THE UNITED STATES, 1900-2000.....	3
FIGURE 4. FERTILITY RATES IN THE UNITED STATES, 1800-2080	3
FIGURE 5. FERTILITY RATES BY COUNTRY, 2000	3
FIGURE 6. URBAN POPULATION AS PERCENT OF TOTAL POPULATION, 1790-2000.....	4
FIGURE 7. INFANT MORTALITY IN THE UNITED STATES, 1850-2002	4
FIGURE 8. LIFE EXPECTANCY AT AGE 65, 1900-2080	5
FIGURE 9. PERCENT OF THE U.S. POPULATION AGED 65 OR OLDER, 1860-2080.....	5

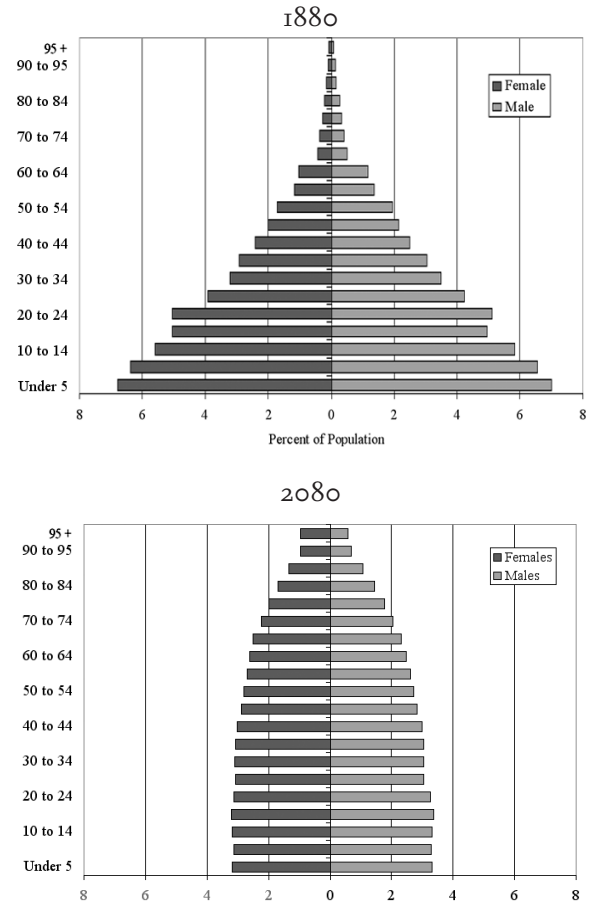
Figure 1. States with at Least 18 Percent of the Population 65 and Over, 2000 and 2025



Source: Committee for Economic Development (1999).
Updated with numbers from 2000 Census.

At the same time, the nation is in the process of a dramatic long-term shift in the age structure of the population. Over the 200-year period between 1880 and 2080, the shape of the U.S. population will change from a pyramid to almost a rectangle as the relative number of older people has increased and the relative number of children has declined (see Figure 2). Note that neither date that brackets this 200-year period has anything to do with the baby boom generation; 1880 predates the first boomer by more than six decades, and by 2080 virtually all the boomers will have died. (The youngest boomers, born in 1964, would be 116 years old in 2080.)

Figure 2. Population Distribution by Age and Sex in the United States, 1880 and 2080

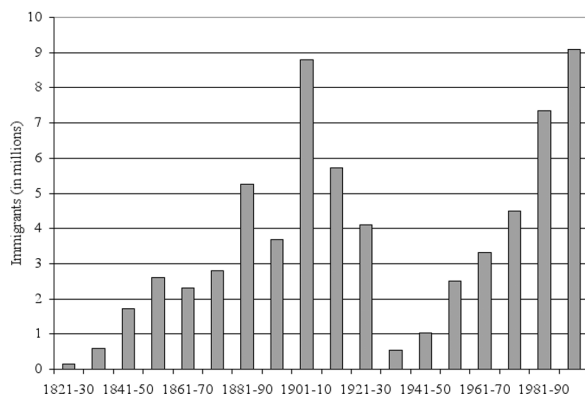


Source: U.S. Bureau of the Census (1998).

Thus, while the population will age rapidly over the next two decades, the aging of the population is not a new phenomenon. Indeed, the U.S. population has been growing older since the dawn of the republic. This long-term trend is the inevitable result of two factors: (1) women have generally been having fewer children than in previous generations; and (2) individuals have been living longer. These two trends reduce the number of young people in society and increase the number in older age groups.

Immigration, the other key factor in U.S. demographic history, also plays a role in long-term population aging. Immigrants are disproportionately prime-age adults, and an influx of immigrants decreases the share of the population over age 65. More importantly, immigrants tend to have higher fertility rates than native born Americans. For example, the fertility rate among Hispanics in the U.S. today — a proxy for immigrants — is 3.0 compared to 1.8 for whites.³ Thus, the decline in immigration after the First World War (see Figure 3) contributed to population aging in the mid-twentieth century. The recent rise will slow the process.

Figure 3. Immigration to the United States, 1900-2000

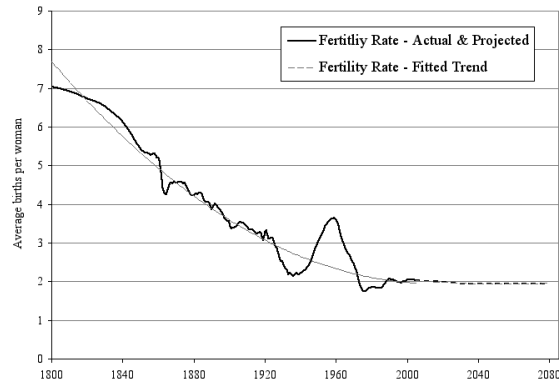


Source: U.S. Department of Homeland Security (2002).

The Decline in Fertility

The fertility rate measures, on average, the number of births for a woman throughout her childbearing years. The declining fertility rate is often perceived as a recent phenomenon — the baby bust that followed the post-war baby boom. In reality, as shown in Figure 4, the fertility rate in the United States has been falling for much of the past two centuries. In 1800, the average woman had 7.0 children. By the end of World War II, a century and a half later, the fertility rate was down to 2.4 children. The post-war baby boom — lasting from 1946 to 1964 — pushed the rate back up to about 3.5 children. But it was a temporary phenomenon. By the mid-1960s, fertility began to head down sharply, dropping to a historic low of 1.7 children by the mid-1970s before bouncing back slightly and stabilizing at about two children, which will keep the population roughly constant.

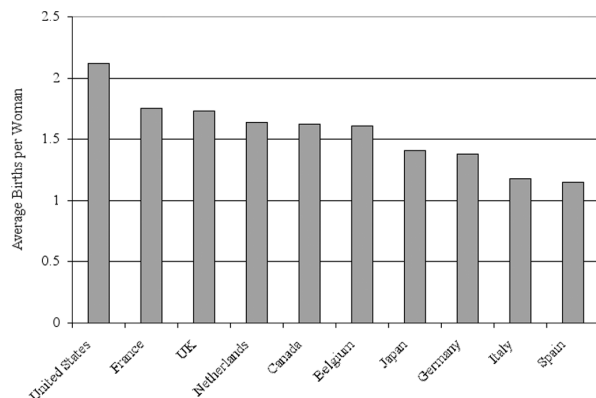
Figure 4. Fertility Rates in the United States, 1800-2080



Sources: Data prior to 1920: Coale and Zelnick (1963); 1920-1969: Bell (1997); 1970-2080: Social Security Administration (2003).

Fertility rates, however, are hard to predict. Many European countries today have fertility rates well below two children (see Figure 5), which will result in declining national populations and much older societies. U.S. fertility rates could look more like those in other developed countries if the number of immigrants, with their higher levels of fertility, falls short of projections. But for now, the consensus estimate is two children per woman, resulting in a stable population.

Figure 5. Fertility Rates by Country, 2000



Source: U.S. Bureau of the Census (2000).

Note: These numbers from the census were obtained from the censuses and surveys of other countries.

Why was fertility so high, and why did it decline so sharply? While individual couples make decisions about having children for a variety of reasons, many scholars who have examined the issue have found that economic factors often play a major role. At the beginning of the 19th century, fertility was much higher in the United States than in Europe and elsewhere. Most commentators attribute the high fertility rates to the availability of land in a frontier nation.

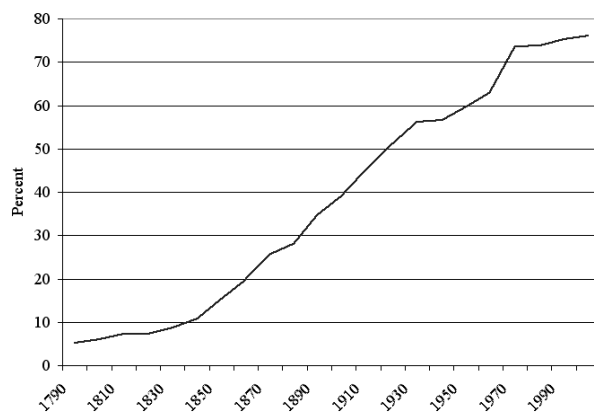
³ U.S. Bureau of the Census (1996).

As long as the frontier existed, young families were continually taking over unimproved acreage, forcing farmers to spend most of their time clearing the land for planting. The need for this basic work to be done made children extremely valuable since any child over the age of six could participate in these tasks year round. In a frontier nation, it was also easy for children to leave the family at an early age to develop their own land. Thus, the need for basic labor and the likelihood that young adults would move on created a demand for lots of children. Indeed, studies show that the highest birth rates within the U.S. occurred on the rural frontier, where land was cheapest and labor scarcest.⁴

As the continent was settled and the frontier disappeared towards the end of the 19th century, farmers had different needs. By 1920, owning and operating a family farm required more in the way of capital investment and relatively less labor, and the improved technology reduced the economic value of additional children.

At the same time that the frontier was disappearing, people were moving off farms and into the cities. Between 1880 and 1900, the percent of the population living in urban areas increased from 26 percent to 40 percent (see Figure 6). By 1920, more than half the population resided in cities. Men in towns and cities faced the prospect of being unemployed, which undermined security and discouraged childbearing. At the same time, the value of children as a resource declined. They could not easily provide services to the family, and meeting their need for food and clothing cost money. For a while, children could find employment outside of agriculture in textiles and other industries, but by 1920 most states had passed laws that prohibited the employment of children under 14 and that required their attendance in school.

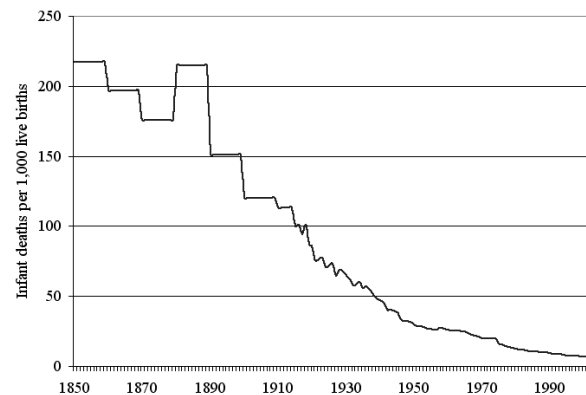
Figure 6. Urban Population as Percent of Total Population, 1790-2000



Source: U.S. Bureau of the Census (1976, 2000).

Reinforcing the trend toward a declining demand for children was the drop in infant mortality. For most of human history families had to produce a lot of children because many would not survive to adulthood. Significant improvements in public health during the 19th and 20th centuries greatly increased the chance of survival, which reduced the need for additional births. For example, infant mortality was cut in half between 1880 and 1920 (see Figure 7).

Figure 7. Infant Mortality in the United States, 1850-2002



Sources: Data prior to 1915: Montgomery and Cohen (1998); 1915-1970: U.S. Bureau of the Census (1976); 1970-2002: Centers for Disease Control (2003).

During the late 19th century, the shift away from farming also had implications for the status of women and the control they had over childbearing.⁵ In rural households, both husbands and wives worked at home, and the husband tended to control the household. As agriculture declined, men increasingly went outside the home to work and left women in charge of the household. Husbands frequently turned over their paychecks to their wives who managed the household budget. This shift in responsibility meant that women gained more control within the marriage, and presumably more control over reproduction. The rising educational attainment of women had a similar effect. Both increased the use of contraceptives, which reduced the number of births from the late 19th century forward. And in the early 20th century, advocates of family planning publicized the availability of birth control to new groups in the population.

Thus, for a host of reasons — reduced economic need for children, higher likelihood of a child surviving to maturity, and increased control by women over reproduction — fertility rates declined dramatically from the beginning of the 19th century. Viewed in this long-term context, the baby boom was a demographic blip that temporarily interrupted the decline in fertility, with the subsequent baby bust bringing fertility back to its long-term historic trend.

⁴ Easterlin (1968).

⁵ Van Horn (1988).

The Increase in Life Expectancy

The other demographic factor driving the aging of the population is increased life expectancy. The gains over the last century have been as dramatic as the longer-term drop in fertility. They have shown less fluctuation, however, as displayed in Figure 8.⁶

In 1935, when Social Security was enacted and the retirement age set at 65, life expectancy for individuals at age 65 was about 12 years for men and 13 years for women. Today it is 16 years and 19 years, respectively. By 2080, life expectancy at 65 is projected to be 20 years for men and 23 years for women. Moreover, the probability of a young worker surviving to retirement has also risen dramatically. In the 1930s, the probability of a 20-year old man surviving to age 65 was only about 60 percent, while for women it was about 67 percent. By the mid-1990s, these fractions had increased to 77 and 87 percent respectively, and they are expected to continue rising in the future.⁷

Figure 8. Life Expectancy at Age 65, 1900-2080



Source: Bell and Miller (2002).

This combination of declining fertility and increased life expectancy will lead to a dramatic increase in the number of older people in our society over the coming decades. If the fertility rate does remain around two children per woman as projected and immigration trends remain constant, at some point the age structure of the population will stabilize, and any further aging will come solely from the increase in life expectancy. But these days, national attention is focused on the aging of the baby boom.

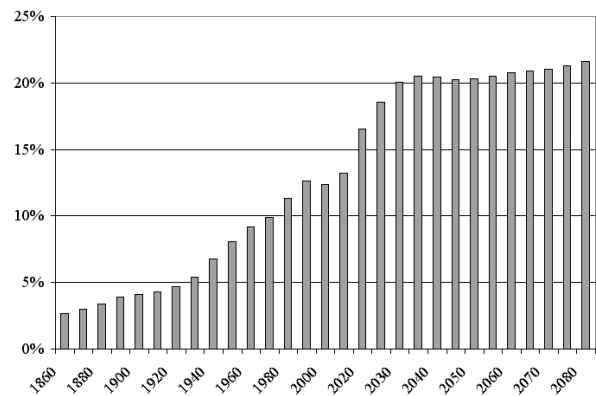
The Bust-Boom-Bust in Fertility Rates

The long-term trends in fertility and mortality, which are causing the population to age, determine the projected ratio of the elderly to the working population in, say, 2080. But the unprecedented speed at which the population will age over the next two decades is the result of the blip in fertility rates — the drop in the 1920s and 1930s, the post-war boom, and the subsequent return to trend.

The Bust of the 1920s and 1930s

Right now, the nation is enjoying a “demographic holiday.” The over-65 population is growing very slowly, reflecting the low level of births during the 1920s and 1930s. At the same time, the non-elderly population is swelled by the ranks of the post-war baby boom generation — those born between 1946 and 1964. The result is that the percent of the population aged 65 and over actually declined slightly in 2000, an occurrence unprecedented in U.S. history (see Figure 9).

Figure 9. Percent of the U.S. Population Aged 65 or Older, 1860-2080



Source: U.S. Bureau of the Census (2000).

The usual story is that few people were born during the Great Depression because times were difficult, and couples were reluctant to take on increased responsibilities. In fact, the sharp downturn in fertility started in the early 1920s. In part, this was a continuation of the long-term trend toward declining fertility as the nation shifted away from a rural and agrarian economy to an urban and industrial society. Reinforcing this downward trend were economic pressures. While the 1920s look prosperous when measured in terms of aggregate statistics, virtually all the gains accrued

⁶ The Social Security Administration prepares two types of tables for measuring life expectancy. The first is a period life table that shows how many people in each age group are expected to die in a given year. The second type is a cohort life table that incorporates

mortality improvements. All the numbers used in this brief are from the period life table (Bell and Miller 2002).

⁷ Council of Economic Advisers (1997).

to the wealthiest non-farm families.⁸ Wage rates for typical workers remained unchanged over the decade. And farm families, who had the highest fertility rates, faced low agricultural prices throughout the 1920s and lost so much wealth in the 1920-21 crash in land values that they did not recover for the rest of the decade. In addition to economic pressures, the beginning of the mass production and advertising of luxury goods highlighted the tradeoff that workers increasingly faced between children and consumption.

The drop in fertility that began in the 1920s continued in the 1930s, when the economy went into freefall. One quarter of the workforce was unemployed at the nadir, and young adults suffered the most. They looked at an uncertain future, and the prospect of having a child appeared fraught with risks. By 1940, 17 percent of married women aged 40-45 had never borne a child.⁹ As a result of the decline in fertility in the 1920s and 1930s, the population 65 and over grew half as rapidly between the 1985 and 2005 period as it did between 1965 and 1985.

The Post World War II Baby Boom

The fertility rate remained low until after the Second World War. But then births increased at an unprecedented rate between 1946 and 1964, reaching a peak in 1957 when 4.3 million babies were born. At first, the baby boom seems like a natural response to husbands and wives reuniting after the war, but in fact 19 years is a long time for catching up.

The upturn in fertility in the late 1940s is the most easily explained. A peak in marriages occurred in 1946 shortly after the end of World War II. The following year saw a spike in the number of first births, and these couples tended to have second, third, and fourth children throughout the 1940s and into the 1950s. Older women who had postponed childbearing during the Depression and war also began to have children when the economy recovered in the 1940s. The greatest increase in fertility occurred among the white urban middle class, particularly those with a college education. But people generally felt wealthy; they had put away money during the war and in the immediate post-war period had little on which to spend their savings other than children. Thus, both the Depression and the war may have increased the desire of women in the 1940s to have larger families. But if other factors had not come into play, the post-war baby boom would have been short-lived, as it was in Europe.

One explanation for the continued boom in babies is that young couples in the post-war period felt that they could afford to have more children than their parents.¹⁰

The contention is that people's desire for children depends on the consumption standards they enjoyed when they were growing up. That is, would-be parents feel a need to ensure that their children will have everything they were provided by their parents. In the post-war period, young American families found that their income prospects were much brighter than those of their parents, and they decided they could afford to have more children. Some argue that their prospects were so much brighter because they belonged to a small cohort due to the decline in fertility in the 1920s and 1930s. If a cohort is relatively small, it has relatively few workers. This increases their value in the labor market and allows them to enjoy steady employment and higher wages. Thus, the favorable contrast of the post-war economy with the Depression combined with the relatively small size of the childbearing cohort contributed to a feeling of economic security and a desire for children.

Cultural factors may also have been important. Those born in the 1920s and 1930s, who were responsible for the baby boom, came of age during a period of amazing economic and political achievement. Americans had overcome the stagnation of the Great Depression, won World War II, and emerged as the major world power. This feeling of success was reinforced by the high level of economic growth during the 1950s. Moreover, the war-time spirit of engagement and patriotism lasted well beyond the immediate post-war period and strengthened social institutions such as the family, the church, and the military. The post-war period also re-focused attention on gender differences as women, who had participated actively in the war effort, returned to the home and childbearing. And the baby boom persisted for 19 years.¹¹

The Baby Bust

Eventually, the special circumstances that had nurtured the baby boom began to fade. The baby boom cohort that was born in the post-war period started to reach adulthood in the 1970s. Because this cohort was extremely large, many young adults began competing for jobs, driving down their scarcity value as workers and their potential earnings. Moreover, they did not envision a world in which they would be significantly better off than their parents.¹² At the same time, the use of birth control became more widespread which gave women much more control over their reproductive decisions. This control, in turn, made it easier for women to delay marriage and motherhood in favor of advanced degrees and participation in the labor force.¹³ The net result was that fertility rates dipped sharply before rebounding to the level of replacement, where they are projected to remain for the foreseeable future.

⁸ Van Horn (1988).

⁹ Van Horn (1988).

¹⁰ Easterlin (1968).

¹¹ Van Horn (1988).

¹² Lindhert (1977).

¹³ The 1960s and 1970s saw two innovations in birth control: increasing access to the pill and the legalization of abortion. A recent study examining these changes found that, of the two, the pill was far more significant because it made sex safer and allowed women to invest in their professional education, which often led to full-time careers (Goldin 2004).

The bust-boom-bust pattern is important in explaining the speed with which the population will age. The U.S. population was aging long before the baby boomers came along and will probably continue well after they are gone. But the boomers are the primary cause of the rapid pace of aging in the coming decades.

References

- Bell, Felicitie C. and Michael L. Miller. 2002. "Life Tables for the United States Social Security Area 1900-2100." *Actuarial Study* No. 116 (August). Washington, D.C.: Social Security Administration. [Available at: <http://www.ssa.gov/OACT/NOTES/as116/as116TOC.html>].
- Bell, Felicitie C. 1997. "Table 3. Total Fertility Rates by Calendar Year and Alternative." *Actuarial Study* No. 112 (August). Washington D.C.: Social Security Administration. [Available at: <http://www.ssa.gov/OACT/NOTES/AS112/tab3.html>].
- Centers for Disease Control. 2003. *Vital Health Statistics*. [Available at: <http://www.cdc.gov/nchs/products/pubs/pubd/hestats/infantmort/infant-mort.htm>].
- Coale, Ansley J. and Melvin Zelnick. 1963. *New Estimates of Fertility and Population in the U.S.* Princeton University Press.
- Committee for Economic Development. 1999. *New Opportunities for Older Workers*. New York: Research and Policy Committee of the Committee for Economic Development.
- Council of Economic Advisers. 1997. *Economic Report of the President*. Washington, D.C.: U.S. Government Printing Office.
- Easterlin, Richard. 1968. *Population, Labor Force, and Long Swings in Economic Growth*. Columbia University Press.
- Goldin, Claudia. 2004. "From the Valley to the Summit: The Quiet Revolution that Transformed Women's Work." Working Paper No. w10335 (March). Cambridge, MA: National Bureau of Economic Research.
- Lindhert, Peter H. 1977. "American Fertility Patterns since the Civil War." In *Population Patterns in the Past*, edited by Ronald Demos Lee. Academic Press.
- Montgomery, Mark R. and Barney Cohen (Eds.). 1998. *From Death to Birth: Mortality Decline and Reproductive Change*. National Academy Press.
- Peterson, Peter G. 1996. *Will America Grow Up Before It Grows Old?: How the Coming Social Security Crisis Threatens You, Your Family, and Your Country*. Random House.
- U.S. Bureau of the Census. 1976. *Historical Statistics of the United States, Colonial Times to 1970*.
- U.S. Bureau of the Census. 1996. Tables A-6 and A-7 in "Population Projections of the United States by Age, Sex, Race, and Hispanic Origin: 1995 to 2050." *Current Population Reports P25-1130*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Bureau of the Census. 1998. "Summary Files." *National Population Projections*. [Available at: <http://www.census.gov/population/www/projections/natsum-T3.html>].
- U.S. Bureau of the Census. 2000. "Projections of the Total Resident Population by 5-Year Age Groups, and Sex with Special Age Categories: Middle Series, 2001-2005, 2006-2010, 2016-2020, and 2025-2045." *National Population Projections, Summary Files*. [Available at: <http://www.census.gov/population/www/projections/natsum-T3.html>].
- U.S. Department of Homeland Security. 2002. *Annual Yearbook of Immigration Statistics*. [Available at: <http://uscis.gov/graphics/shared/aboutus/statistics/IMM02yrbk/IMM2002list.htm>].
- U.S. Social Security Administration. 2003. *The 2003 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*. Washington, D.C.: U.S. Government Printing Office. [Available at: <http://www.socialsecurity.gov/OACT/TR/TR03/tr03.pdf>].
- Van Horn, Susan Householder. 1988. *Women, Work, and Fertility, 1900-1986*. New York University Press.

Conclusion

Population aging is the result of very long-term trends in fertility and life expectancy. The post-war baby boom was a short-term departure from the trend of lower fertility, and it was quickly followed by a baby bust that brought fertility back down to historically low levels. As the baby boom generation begins to reach traditional retirement ages, the pace of population aging will rapidly accelerate. By 2025, nearly 1 in 5 Americans will be age 65 or over compared to 1 in 8 today. But the outlook for 2080 is unaffected by the bust-boom-bust pattern and simply reflects the long-term trends in fertility and life expectancy.

CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE

About the Center

The Center for Retirement Research at Boston College, part of a consortium that includes parallel centers at the University of Michigan and the National Bureau of Economic Research, was established in 1998 through a grant from the Social Security Administration. The goals of the Center are to promote research on retirement issues, to transmit new findings to the policy community and the public, to help train new scholars, and to broaden access to valuable data sources. Through these initiatives, the Center hopes to forge a strong link between the academic and policy communities around an issue of critical importance to the nation's future.

Affiliated Institutions

American Enterprise Institute
Massachusetts Institute of Technology
Syracuse University
The Brookings Institution
Urban Institute

Contact Information

Center for Retirement Research
Boston College
Fulton Hall 550
Chestnut Hill, MA 02467-3808
Phone: (617) 552-1762
Fax: (617) 552-1750
E-mail: crr@bc.edu
Website: <http://www.bc.edu/crr>