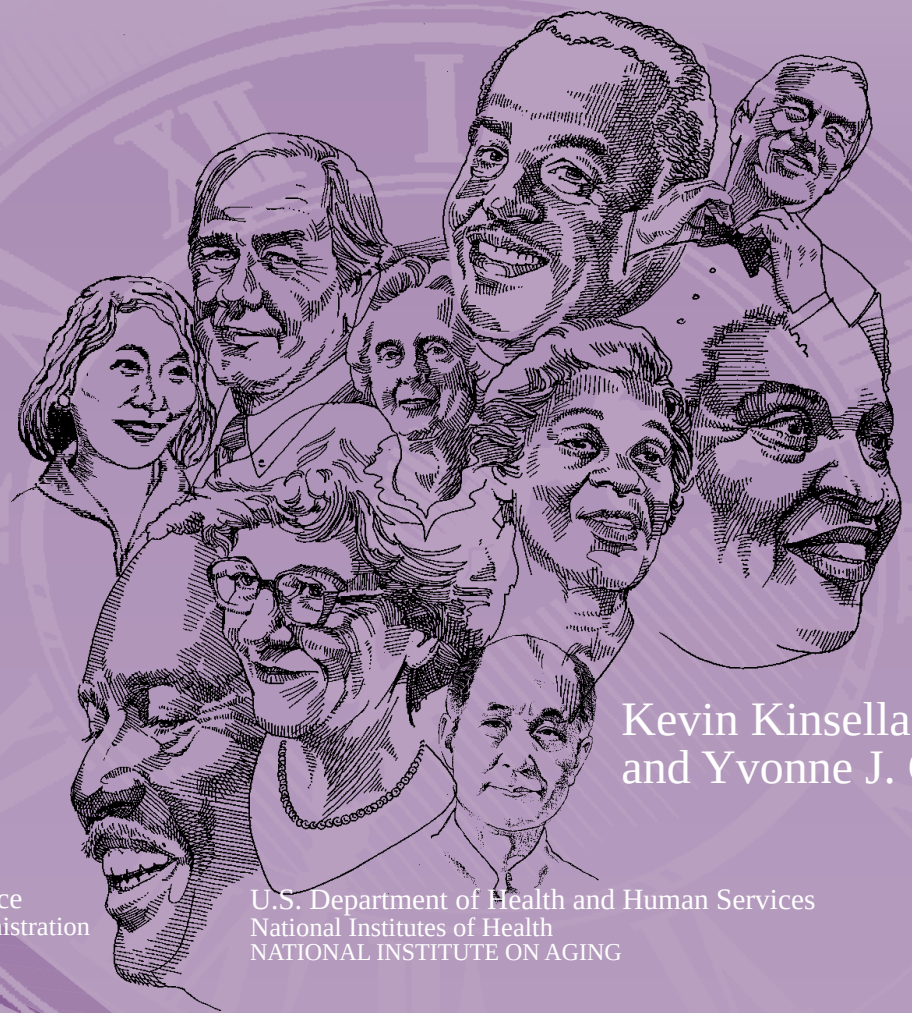
Older Workers, Retirement, and Pensions

A Comparative International Chartbook

IPC/95-2



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and Yvonne J. Gist

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Acknowledgments

This report was prepared by **Kevin Kinsella** and **Yvonne J. Gist** under the direction of **Judith Banister,** Chief, International Programs Center (IPC), Population Division, U.S. Bureau of the Census. Research for and production of this report was supported under an interagency agreement with the Office of the Demography of Aging, National Institute on Aging, Agreement No. 2 Y01 AG-5-0055-15.

Within IPC, **Valerie Lawson** and **William H. Wannall** were instrumental in the process of data compilation and graph production. Thanks also are due to **Maureen E. Buhler** and **Joseph F. Reil** for statistical assistance, to **Gertrude G. Barnas** and **Lorraine M. Wright** for their help in locating and acquiring source material, and to **Peter D. Johnson** and staff of the Information Resources Branch for maintaining the IPC International Data Base. The Special Projects Team of the Bureau of the Census Administrative and Publications Services Division, **Walter C. Odom,** Chief, provided publication planning, design, composition, editorial review, and printing planning and procurement. **Meshel L. Butler** provided cover design and graphic services. **Chris Langley** provided publication coordination and editing.

For their review of and suggestions regarding this report, the authors are grateful to **Eduardo E. Arriaga** and **Judith Banister,** IPC; **Richard V. Burkhauser,** Center for Policy Research, Syracuse University; **Robert L. Clark,** Department of Business Management, North Carolina State University; **Elizabeth Duskin,** ELS/IR, Organization for Economic Cooperation and Development; **Barry L. Kostinsky,** IPC; **Arthur J. Norton,** Population Division, U.S. Bureau of the Census; **Sara E. Rix,** Public Policy Institute, American Association of Retired Persons; **Richard M. Suzman,** Office of the Demography of Aging, U.S. National Institute on Aging; **Barbara Boyle Torrey,** Commission on Behavioral and Social Sciences and Education, National Academy of Sciences; and **John A. Turner,** Pension and Welfare Benefits Administration, U.S. Department of Labor.

Many of the data in this report are drawn from published sources issued by national and international organizations engaged in the collection and dissemination of crossnational data on older workers, retirement and pensions. Several organizations have made especially valuable contributions to the understanding of international similarities and differences in these areas, and deserve recognition: the International Labour Office, Geneva; the International Social Security Administration, Geneva; the Organization for Economic Cooperation and Development, Paris; the Statistical Office of the European Union (Eurostat), Luxembourg; the U.S. Department of Labor, Washington, DC; the U.S. Social Security Administration, Baltimore, MD; and the World Bank, Washington, DC.

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Introduction

Fertility decline and urbanization arguably have been the dominant global demographic trends during the second half of the 20th century, much as rapid improvements in life expectancy characterized the earlier 1900's. As we approach the 21st century, population aging is poised to emerge as a preeminent worldwide phenomenon. The confluence of lowered fertility and improved health and longevity has generated growing numbers and proportions of older population throughout most of the world. As education and income levels rise, increasing numbers of individuals reach "old age" with markedly different life expectancies and personal expectations than their forebears. While population aging represents, in one sense, a human success story, it also poses myriad challenges to public institutions that must adapt to a changing age structure.

Concerns about population aging are expressed on many levels, both individual and societal. The field of gerontology has expanded to include a multitude of scientific disciplines, each of which examines the aging process from a different perspective ranging from the intracellular to the macrosocial. At the heart of the public policy debate, however, are economic issues. As age structures change and older individuals become a proportionally greater part of national populations, there are social and political pressures to change the distribution of resources within societies. Shifting weights of younger and older persons have an impact on the implicit social contract, and may strain (or conceivably strengthen) intergenerational solidarity. Social security systems that evolved under one set of demographic circumstances may require substantial restructuring in order to remain solvent and functional for successive generations.

Against the backdrop of demographic and economic change, each society develops its own response to the needs of older individuals during and after their transition from employment to retirement. Different social policy traditions in industrialized countries have resulted in several basic approaches to old-age security: Scandinavian countries have adopted a universal welfare model wherein citizenship alone bestows economic entitlement; the Anglo-Saxon or Beveridge residual model emphasizes flat-rate benefits designed largely to prevent poverty; the Bismarkian welfare system used widely in Europe ties economic security in old age more closely to pre-retirement earnings (Walker, 1993; Williamson and Pampel, 1993). Elements of each approach often coexist in industrialized countries, and have been implemented to varying degrees in less developed countries. The accelerated pace of population aging in much of the developing world already has caused a revamping of social security institutions in some nations, notably in Latin America, and has heightened the urgency for reform in much of Asia.

This report provides: 1) an overview of underlying demographic and socioeconomic trends that affect old-age security around the world; and 2) graphic presentations of available, reasonably comparable international statistics on the status of older workers, retirement trends, and pension systems.

As is the case with any international statistical comparison, data for certain topics included in this report may not be strictly comparable. There often are large differences in both the quantity and quality of statistics reported by various countries. These differences stem from discrepancies in data collection and tabulation practices as well as differences in resources and data needs among countries. As a result, any attempt to compile standard data across countries requires consideration of whether and how the reported data should be analyzed to achieve comparability.

Most of the demographic statistics in this report are estimates and projections prepared by the International Programs Center (Population Division, Bureau of the Census). Data from various national and international sources have been evaluated and sometimes adjusted by U.S. Census Bureau analysts, and the resulting estimates are considered to be accurate representations of the demographic situation in a given country. The data are internationally consistent and congruent with other facts known about the nations. Demographic estimates and projections also have been checked for consistency; that is, compared with information on other countries in the same region or subregion and with those elsewhere at approximately the same level of socioeconomic development.

The socioeconomic data, on the other hand, typically are as reported by the countries themselves, and U.S. Census Bureau analysts have neither directly evaluated nor adjusted the data. For many of the topics addressed in this report, national socioeconomic data have been compiled by international organizations such as the Organization for Economic Cooperation and Development and the International Labour Office. Although these data may have been

scrutinized for consistency when compiled, they are not necessarily fully comparable. For reasons noted in various parts of the report, international comparability regarding subjects such as disability, unemployment, and pension schemes often is severely hampered by the lack of data, the timeliness of information on what may be rapidly-changing subjects, and/or differing national concepts and data-collection systems. These factors greatly influenced the selection of countries to be included in each figure. As much as possible, we try to present data for countries representing different levels of economic and demographic development. Given these constraints, *this report should be construed as an attempt to synthesize existing information, highlight data gaps, and stimulate further data collections and crossnational comparisons*.

Older Workers, Retirement and Pensions is the fifth report in a Census Bureau series on the world's older populations. The first four reports — *An Aging World* (1987); *Aging in the Third World* (1988); *An Aging World II* (1993); and *Aging in Eastern Europe and the Former Soviet Union* (1993) — focused primarily on demographic aspects of population aging. The current report focusses on socioeconomic concerns against a backdrop of demographic change. This series of reports is supported by the *Office of the Demography of Aging, National Institute on Aging (NIA)*, one of the 13 institutes of the National Institutes of Health. The NIA is responsible for the conduct and support of biomedical, social, and behavioral research, training, health information dissemination, and other programs with respect to the aging process and the diseases and other special problems and needs of the aged. Because important insights and perspectives are afforded by investigations of the health of different populations, the NIA supports and engages in crossnational comparative studies.

Users of this report are invited to send their comments to the Chief, International Programs Center, Population Division, U.S. Bureau of the Census, Washington, DC 20233.

Demographic Underpinnings

Population aging continues to drive elements of public policy debate in industrialized countries, and has become a force to reckon with in much of the developing world. Declining fertility rates and lengthening life expectancy produce population age structures that are increasingly weighted toward older age groups. As a consequence of this shift in age structure, issues regarding social support for elderly persons take on added salience. In this context, the overriding concern of governments relates to the ability of individual citizens to be economically supported in later life. In industrialized countries, such support derives largely from public and/or private pension systems. In many other nations, economic support for elderly persons must of necessity be in the realm of their families. Throughout the world, financial aspects of health care and service provision become crucial to public planning as longevity increases and the prevalence of chronic disease rises.

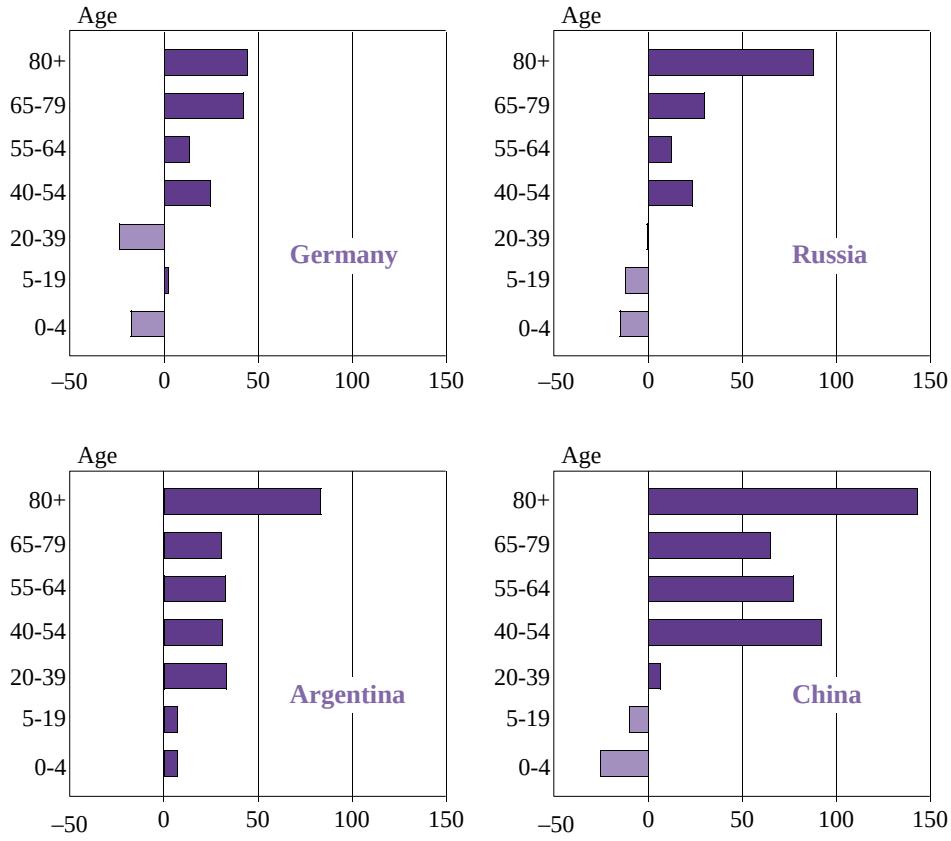
Chapter 1

Balance of world's young and old is shifting

Age-specific population growth rates within countries often vary enormously as a result of past and present birth, death and net migration rates, which themselves may be related to changes in marital and educational trends, cultural norms, public health programs, epidemics, war, natural calamities, etc. Regardless of the complex interplay of country-specific factors, an emerging crossnational pattern involves high growth rates of older relative to younger age groups.

European nations are increasingly concerned about numerical declines in younger population accompanied by growing numbers of older citizens. The situation in China demonstrates that this is not strictly an industrialized-nation concern. The young-old balance is shifting throughout the developing world: for example, in the world's fourth-largest country, Indonesia's youth population (ages 0 to 19) is projected to increase 4 percent between 1990 and 2010, whereas the elderly (65 and over) should increase 140 percent and the oldest old (80 and over) 260 percent.

Figure 1.1
Age-Specific Population Change: 1990 to 2010
(In percent)

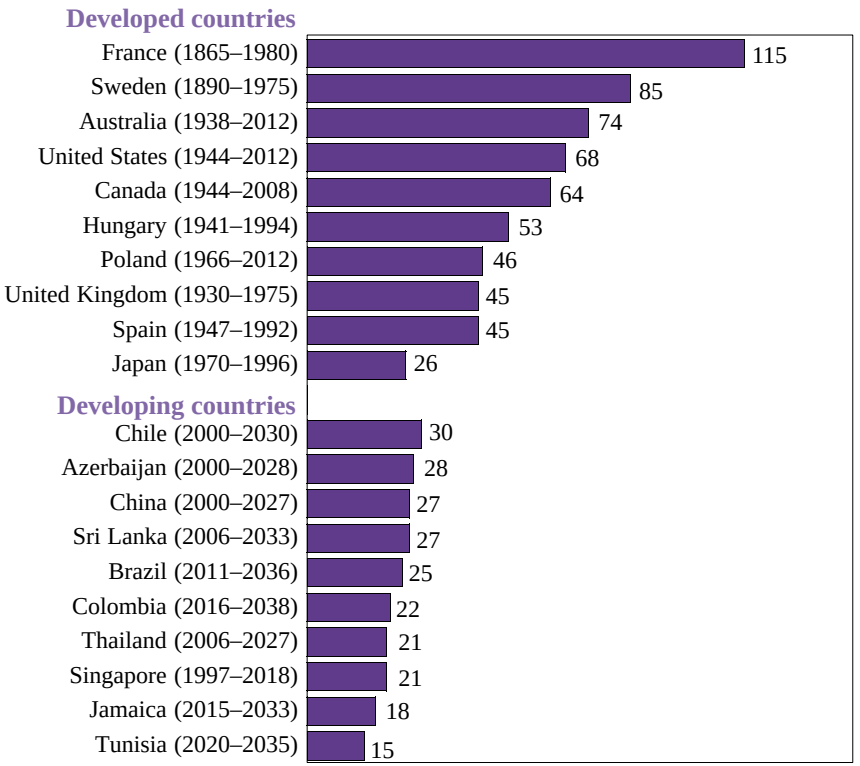


Source: U.S. Bureau of the Census, International Programs Center, International Data Base

Pace of population aging has varied; will accelerate in developing countries

One nearly universal feature of the world's nations today is the demographic shift from younger to older population age structures. In some European countries, this process has occurred gradually over the course of centuries, allowing societies and economies time to adapt to their demographic evolution. In other parts of the globe, the aging process has been and will be accelerated. The rapidity of current change in East Asia, for example, stands in stark contrast to historical developments in Western Europe. Demographic projections for countries in other developing regions suggest a similar compression of the aging process, often beginning in the first or second decade of the 21st century. Such rapidly aging societies are likely to face the often-fractious issues related to social security, health care costs, and intergenerational equity that have emerged in Europe and North America.

Figure 1.2
Speed of Population Aging
(Number of years required or expected for percent of population aged 65 and over to rise from 7% to 14%)



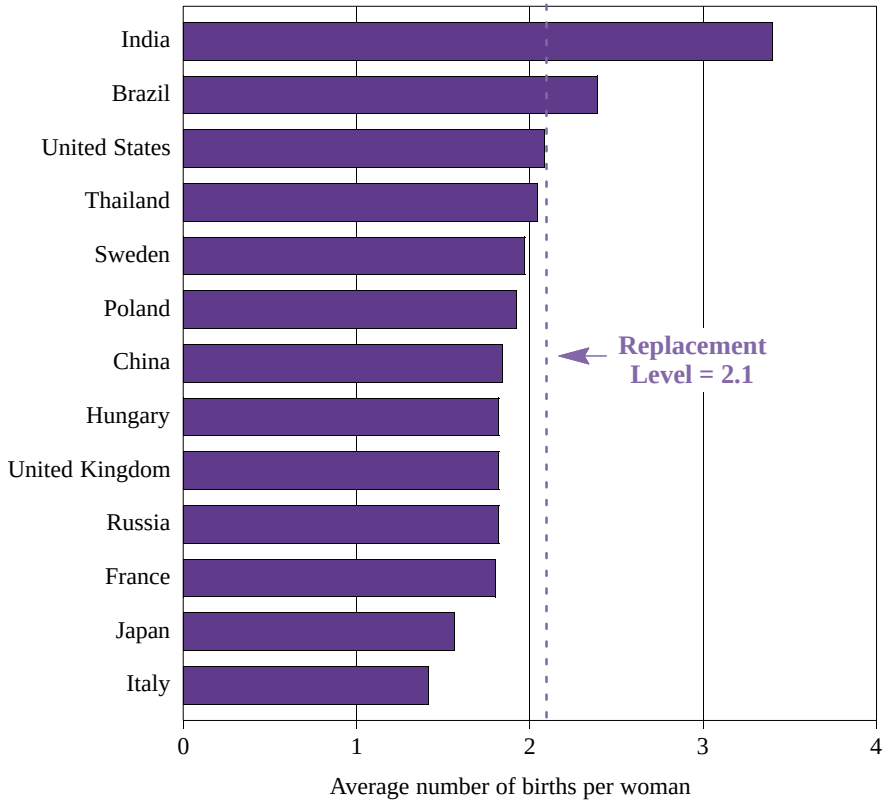
Source: Japan Ministry of Health and Welfare, 1983; UNDESIPA, 1994; U.S. Bureau of the Census, International Programs Center, International Data Base; and country sources

Fertility rate below replacement level in most developed countries

Underlying the global increase in percents elderly are changes in fertility and mortality. The most prominent historical factor in population aging has been fertility decline. The generally sustained decrease in total fertility rates (TFRs) in industrialized nations since at least 1900 has resulted in current levels below the population replacement rate of 2.1 live births per woman in most such nations. Persistent low fertility since the late 1970's has led to a decline in the size of successive birth cohorts, and a corresponding increase in the proportion of older relative to younger population.

Fertility change in the developing world has been more recent and more rapid, with most regions having achieved major reductions in fertility rates over the last 30 years. Although the aggregate TFR remains in excess of 4.5 children per woman in the Near East and Africa, overall levels in Asia and Latin America decreased by about 50 percent—from 6 to 3 children per woman—during the period 1965 to 1995. Total fertility in many developing countries—notably China, Thailand, South Korea, and at least a dozen Caribbean nations—is now at or below replacement level.

Figure 1.3
Total Fertility Rate: 1995



Source: U.S. Bureau of the Census, International Programs Center, International Data Base

20th century life expectancy doubled in some countries

Although fertility decline has been the driving force behind changing population age structures, mortality decline becomes increasingly important in societies with low rates of fertility and infant mortality. Countries have made enormous strides in extending life expectancy at birth since the beginnings of the 1900's; in the first half of the century, many Western industrial nations added 20 or more years to their average life expectancies. Spain's life expectancy more than doubled between 1900 and 1990.

Beginning in the 1950's, the sustained increase in life expectancy at birth in developed countries began to take different paths. Female life expectancy continued to rise, while male gains slowed significantly or leveled off. Deterioration of adult health in parts of Eastern Europe and the former Soviet Union resulted in declining male life expectancy at birth in the 1970's and 1980's. The direction of change in developing countries has been more consistent, with practically all nations showing continued improvement for both males and females except where AIDS mortality is a major factor. The most dramatic gains have been seen in East Asia, where life expectancy at birth increased from less than 45 years in 1950 to more than 71 years in 1990 (UNDESIPA, 1993).

Table 1.1
Life Expectancy at Birth for 19 Developed Countries: 1900 to 1995
(In years)

	Circa 1900		Circa 1950		1995	
Country	Male	Female	Male	Female	Male	Female
Australia	53.2	56.8	66.7	71.8	74.7	81.0
Austria	37.8	39.9	62.0	67.0	73.7	80.3
Belgium	45.4	48.9	62.1	67.4	73.9	80.7
Canada	-	-	66.4	70.9	74.9	81.8
Czech Republic	38.9	41.7	60.9	65.5	69.9	77.4
Denmark	51.6	54.8	68.9	71.5	73.2	79.2
France	45.3	48.7	63.7	69.4	74.5	82.4
Germany	43.8	46.6	64.6	68.5	73.5	79.9
Greece	38.1	39.7	63.4	66.7	75.4	80.6
Hungary	36.6	38.2	59.3	63.4	67.9	76.1
Italy	42.9	43.2	63.7	67.2	74.7	81.2
Japan	42.8	44.3	59.6	63.1	76.6	82.4
New Zealand	-	-	67.2	71.3	73.1	80.4
Norway	52.3	55.8	70.3	73.8	74.3	81.2
Poland	-	-	57.2	62.8	69.2	77.3
Spain	33.9	35.7	59.8	64.3	74.7	81.4
Sweden	52.8	55.3	69.9	72.6	75.6	81.4
United Kingdom	46.4	50.1	66.2	71.1	74.2	80.0
United States	48.3	51.1	66.0	71.7	72.8	79.7

Notes: "–" Data not available

Figures for Germany and the Czech Republic prior to 1995 refer to the former Federal Republic of Germany and Czechoslovakia, respectively.

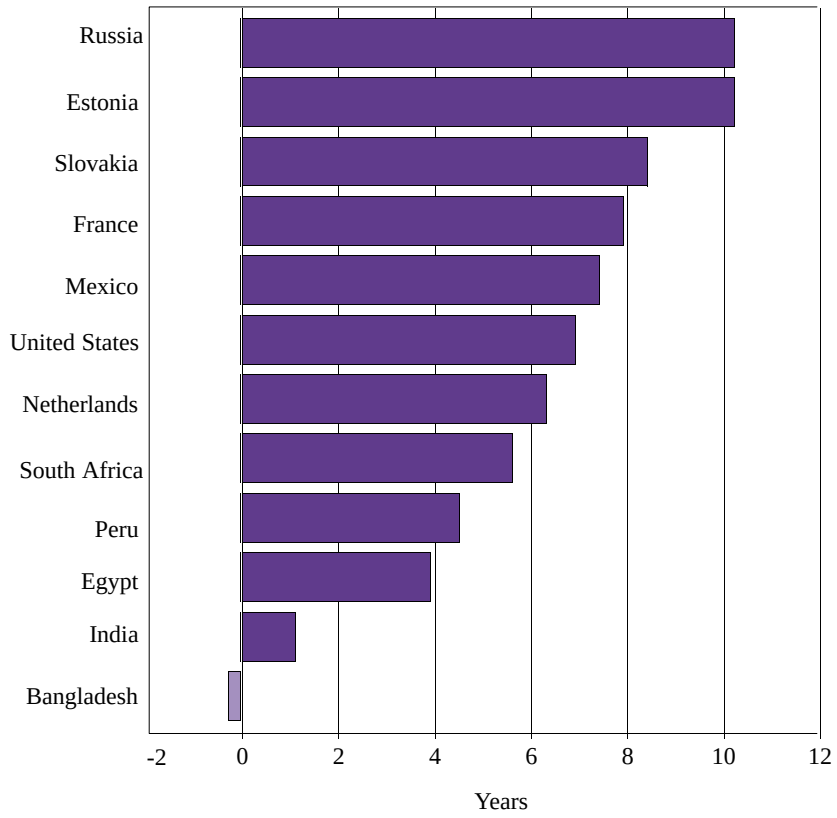
Source: UNDIESA, 1988; Siampos, 1990; U.S. Bureau of the Census, International Programs Center, International Data Base; and country sources

Women enjoy near-universal advantage in longevity

The widening of the female advantage in life expectancy is a prominent feature of mortality trends in the 20th century. In 1900, the European and North American gender gap in life expectancy at birth typically was 2 to 3 years. Currently, women in most developed countries outlive men by 5 to 9 years, with exceptionally large differentials found in Eastern Europe. Women today have lower mortality than men in every age group and for most causes of death. Average female life expectancy now exceeds 80 years in at least 15 countries and is approaching this threshold in many other nations.

The gender differential is usually smaller in developing countries. It even is reversed in a few South/Central Asian countries where cultural factors (low female social status; preference for male rather female offspring) contribute to lower female life expectancy at birth.

Figure 1.4
Female Advantage in Life Expectancy at Birth: 1995



Source: U.S. Bureau of the Census, International Programs Center, International Data Base

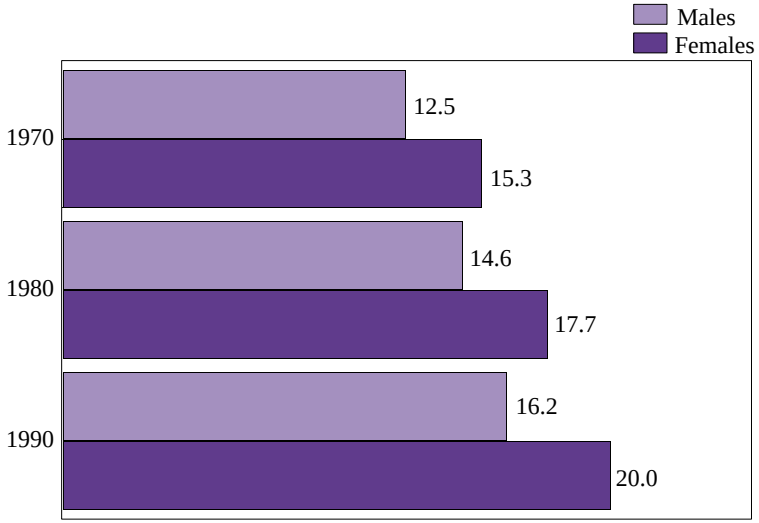
Life expectancy also increasing at older ages

Society-wide improvements in health over time allow greater proportions of successive generations to reach old age, and to reach old age in relatively better health. Not only do more people survive to old age, but those who do may expect to live longer than their predecessors. Subject to 1990 mortality conditions in Japan, the average woman aged 65 years could expect to live an additional 20 years, and the average man more than 16 years. Japanese life expectancy at age 65 for both sexes combined increased 30 percent between 1970 and 1990, compared with an overall increase in life expectancy at birth of less than 10 percent.

Figure 1.5

Life Expectancy at Age 65 for Japan

(Years of life remaining for those who reach age 65)



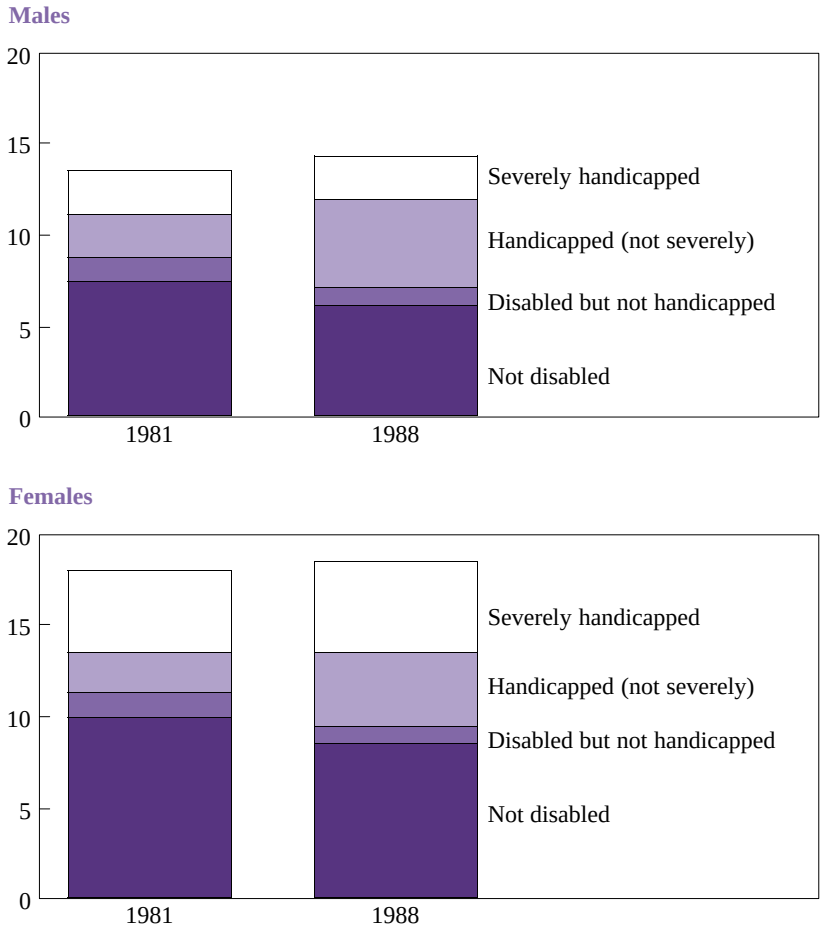
Source: Country sources

Trends in disability uncertain

As life expectancy at birth and at older ages lengthens, the quality of that longer life becomes a major issue. Are we living healthier as well as longer lives, or are we spending an increasing portion of our older years with mental and physical disabilities? In aging societies, the answer to this question will have a profound impact on national health and long-term care systems, and on whether retirement savings and pension schemes are sufficient as currently constituted.

Researchers in many countries (see Robine et al., 1994) are seeking ways to quantify a response to this question, and to date the results are ambiguous. Longitudinal data from the United States, for example, indicate a lowering of disability rates among the elderly during the 1980's (Manton, Stallard and Corder, 1995). On the other hand, data for Australia (Mathers, 1991) suggest that the increase between 1981 and 1988 in elderly years spent with some degree of handicap was greater than the increase in life expectancy at age 65. A clearer picture of the international trend in quality of life at older ages depends upon the development of additional longitudinal data sets as well as advances in comparative crossnational methodology.

Figure 1.6
Years of Life Expectancy at Age 65 in Australia, by Disability Status and Sex: 1981 and 1988



Source: Mathers, 1991. Commonwealth of Australia copyright reproduced by permission.

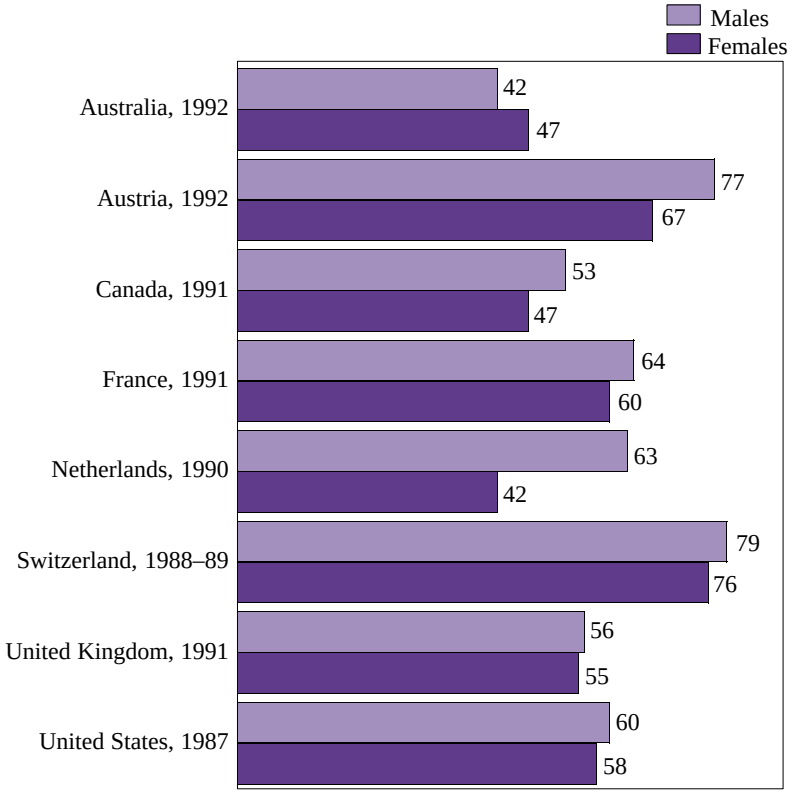
Female advantage in life expectancy partially offset by disability

The concept of healthy life expectancy—also called active life expectancy or disability free life expectancy—is used to refer to the average number of years that persons may expect to be free of limitations of function due to one or more chronic disease conditions. It is difficult to precisely compare measures of healthy life expectancy among nations due to computational and conceptual differences. One commonality that has emerged from various studies, however, is that women who reach age 65 can expect to spend a greater portion of their remaining years with one or more functional disabilities than their male counterparts (except in Australia).

Figure 1.7

Disability-Free Portion of Life Expectancy at Age 65

(Percent of remaining years lived without disability)



Source: World Health Organization, 1995

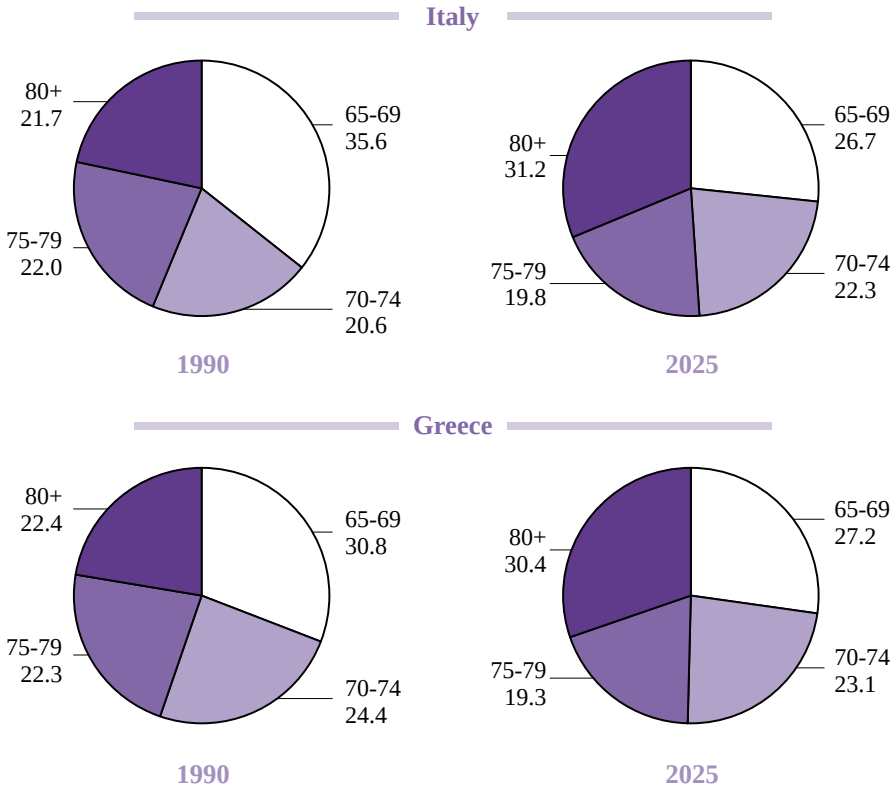
Elderly populations themselves are aging

As seen in figure 1.1, the oldest old (aged 80 and over) are the fastest-growing segment of many national populations worldwide. This group constitutes as much as 4 percent of the total population in Scandinavia, France and Switzerland, and more than 20 percent of the elderly population in industrialized nations as a whole. An increasingly important feature of societal aging is the progressive aging of the elderly population itself. As the average individual survives to ever-greater age, the share of persons aged 80 and over within the elderly aggregate assumes greater weight. The numerical growth and increasing socioeconomic heterogeneity of the oldest old challenge social planners to seek further knowledge about this group, since the oldest old consume disproportionate amounts of health and long-term care services (Suzman, Willis, and Manton, 1992).

Figure 1.8

The Aging of the Elderly in Italy and Greece: 1990 and 2025

(Percent of all elderly in each age group)



Source: U.S. Bureau of the Census, International Programs Center, International Data Base

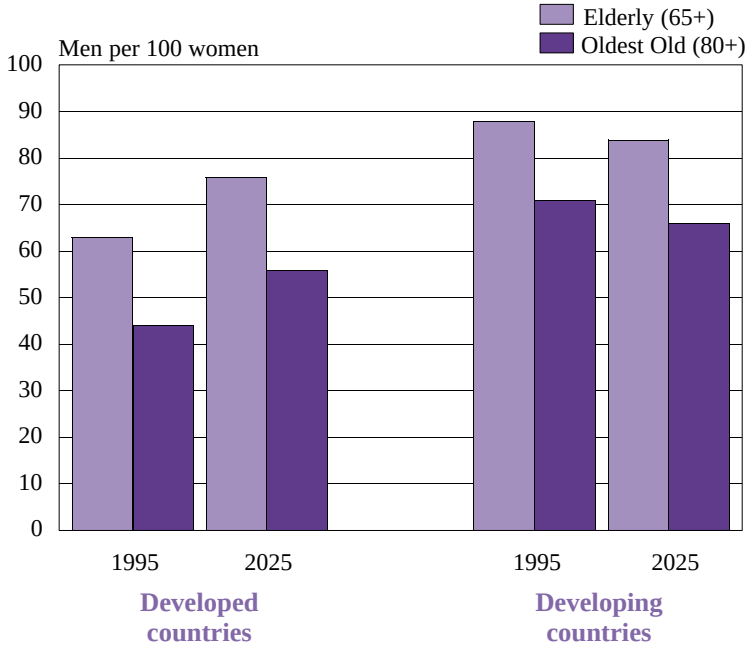
Female share of older population rises with age

Gender differences in longevity in developed countries translate into a preponderance of women at older ages. Among all elderly in developed countries in 1995, the sex ratio was 63 (i.e., there were 63 men aged 65 and over per every 100 women aged 65 and over). Because women have lower mortality rates than men even at older ages, the proportion female in most populations rises with age. Among the oldest old (80 and over) in developed countries, the 1995 sex ratio was only 44. Demographers expect that life expectancy will increase somewhat faster for men than for women; as a result, these sex ratios are projected to rise considerably by the year 2025.

Current sex ratios in developing nations are much higher than in the developed world: 88 among persons aged 65 and over, and 71 among the oldest old. If the trend in developing-country mortality approximates what has been observed in industrialized nations, the future gap between male and female life expectancy might be expected to widen somewhat. One likely result would be a decline in sex ratios at older ages over the next 3 decades.

A shifting gender balance among the elderly has many implications for social support and government expenditure, especially in countries where most old women are widowed, without formal labor force experience, and without access to significant public assistance. Governments need to assess changes in sex ratios in light of other changes in marriage/ widowhood rates, family living arrangements, and labor force participation, all of which interact to heighten or lessen potential public support requirements in a given nation.

Figure 1.9
Sex Ratios for the Elderly and Oldest Old: 1995 and 2025



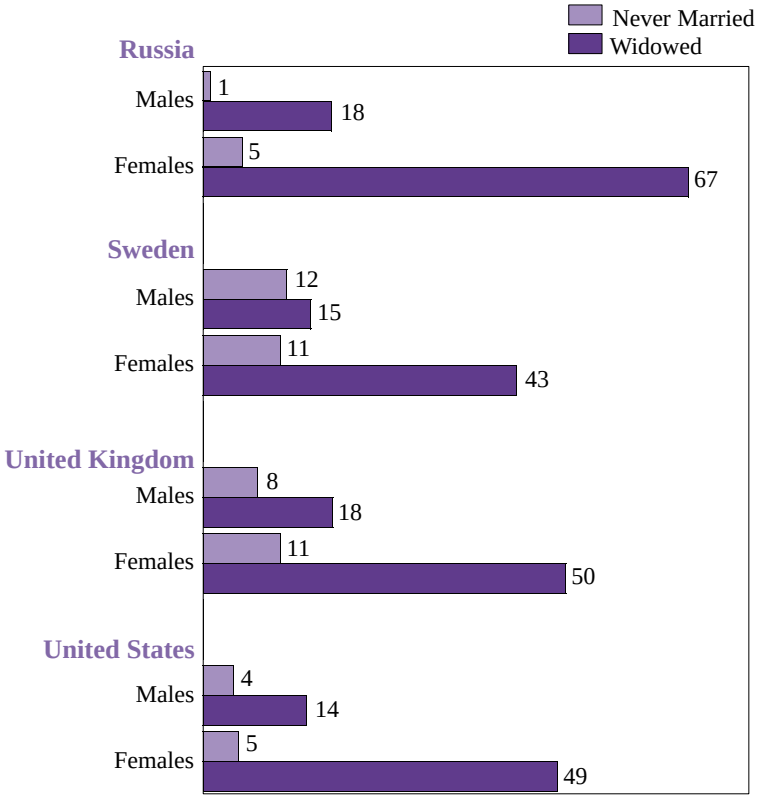
Source: U.S. Bureau of the Census, International Programs Center, International Data Base

Numbers of widows on the rise worldwide

Trends in marital status at older ages are likely to have an increasing impact on retirement from the labor market, on government provision of pensions, and on general social support. While most elderly men are married, elderly women tend to be widows; one study (Kinsella and Taeuber, 1993) found that, in 31 of 47 countries, more than half of all elderly women were widowed. In numerous European nations, data from the 1980's showed that 10 to 20 percent of elderly women had never married; percentages never married were almost always lower for elderly men. While proportions widowed and never-married among elderly populations generally are declining in industrialized countries, absolute numbers of widowed and never-married older persons are on the rise. Numbers and percentages of older population divorced and separated also are growing (Myers, 1992).

Such developed-country figures, when taken in the context of low fertility, suggest that many older women have few if any immediate family and rely on the state for economic support. In the developing world, where proportions widowed and divorced among the elderly often are on the rise, the specter of large numbers of poor elderly women (and men) without a spouse has prompted renewed emphasis on filial piety and formal programs for strengthening the family institution.

Figure 1.10
Percent Never Married and Widowed Among the Elderly: Circa 1990



Source: U.S. Bureau of the Census, International Programs Center, International Data Base

The usefulness of support ratios

Planning for the allocation of social resources should be informed by changes in the balance of numbers and proportions of persons in broad age groups. Shifts in age structure generally result in new service demands and economic requirements. With a progressively older age structure come changes in the relative numbers of people who can provide various forms of support to those who need it.

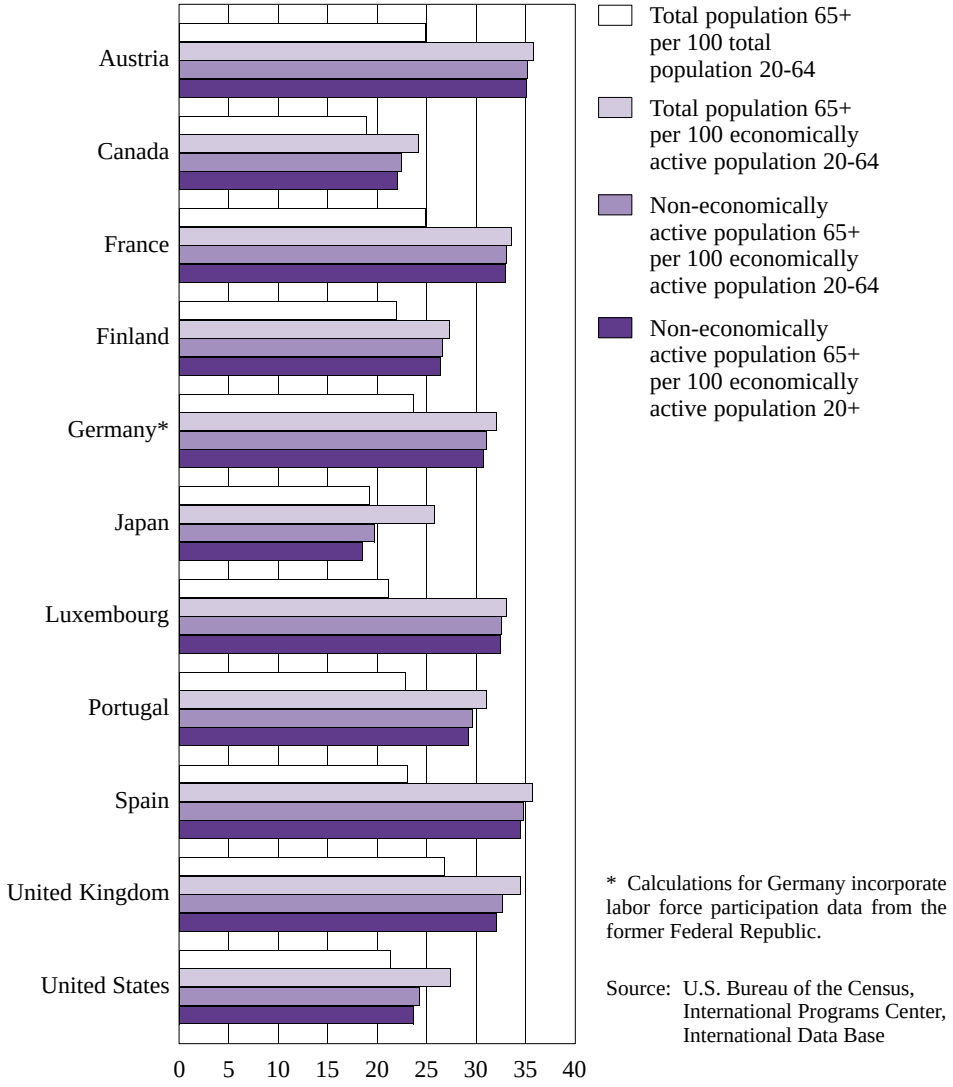
A commonly used measure of potential social support needs is the elderly support ratio (sometimes called the elderly dependency ratio), usually defined as the ratio of persons aged 65 and over per 100 persons aged 20 to 64 in a given population. Implicit in this ratio is the notion that all persons over age 64 are in some sense dependent on the population in the working ages 20 to 64; the latter provide indirect support to the elderly through taxes and contributions to social welfare programs. We know, of course, that elderly populations are extremely diverse in terms of resources, needs, and abilities, and that many elderly are not dependent in either a financial or a physical (health) sense. Likewise, substantial portions of the working-age population may not be financial earners, for reasons of unemployment, inability to work, pursuit of education, choosing to be out of the labor force, and so forth. In fact, a growing body of evidence (Blieszner and Hilkevitch Bedford, 1995) suggests that the elderly in many societies provide a great deal of support to their adult children and grandchildren. Such support by the elderly in developed countries often takes the form of direct financial assistance, sharing of housing, and child care; while in developing countries, many elderly are integrally involved in joint home maintenance and child rearing. In both settings, the activities of the elderly help free younger adult women for employment (Apt, 1992; Hashimoto, 1991).

While it is empirically difficult to include factors such as intrafamily financial assistance and child care activities into an aggregate social support measure, it is feasible to take account of employment characteristics in both the working-age and elderly populations. In figure 1.11, the solid white bar for each country represents the standard elderly support ratio as defined above. The second bar includes only the economically active population ages 20 to 64 in the denominator, thereby excluding persons who choose not to work, unpaid household workers, non-working students, and perhaps those individuals whose health status keeps them out of the labor force. The third bar represents a calculation similar to the second bar, but removes economically active persons aged 65 and over from the numerator on the assumption that they are not economically dependent. The fourth bar builds on the third bar by adding these economically active elderly to the

ratio denominator of other economically active individuals, on the assumption that these working elderly continue to contribute tax revenue to national coffers.

The alternative ratios in each country are higher than the standard elderly support ratio, except for the final alternative ratio for Japan (where the elderly have a relatively high rate of labor force participation; see figure 2.2). To the extent that policy and program agencies use support ratio calculations, the impact of including versus excluding labor force participation rates appears considerable in most countries. Data permitting, other adjustments also might be made to these ratios to account for: workers under age 20; trends in unemployment; average retirement ages (see Chapter 3); and perhaps weighted factors corresponding to levels of pension receipt and institutionalization among the elderly, or the prevalence of high-cost disabilities.

Figure 1.11
Standard and Alternative Elderly Support Ratios: 1990



* Calculations for Germany incorporate labor force participation data from the former Federal Republic.

Source: U.S. Bureau of the Census, International Programs Center, International Data Base

Older Workers

The impact of population aging on a society and economy is, in part, a result of changes in the age structure of the labor force. From a global perspective, three trends in labor force participation rates generally have accompanied declining population growth rates and subsequent population aging: 1) a decrease in the proportion of economically active youths; 2) an increase in the share of women in the labor force; and 3) a decline in the proportion of older persons, especially men, in the labor force. All three trends are influenced by government policies, ranging from subsidized schooling and day care programs to disability programs and retirement schemes (Clark, 1993).

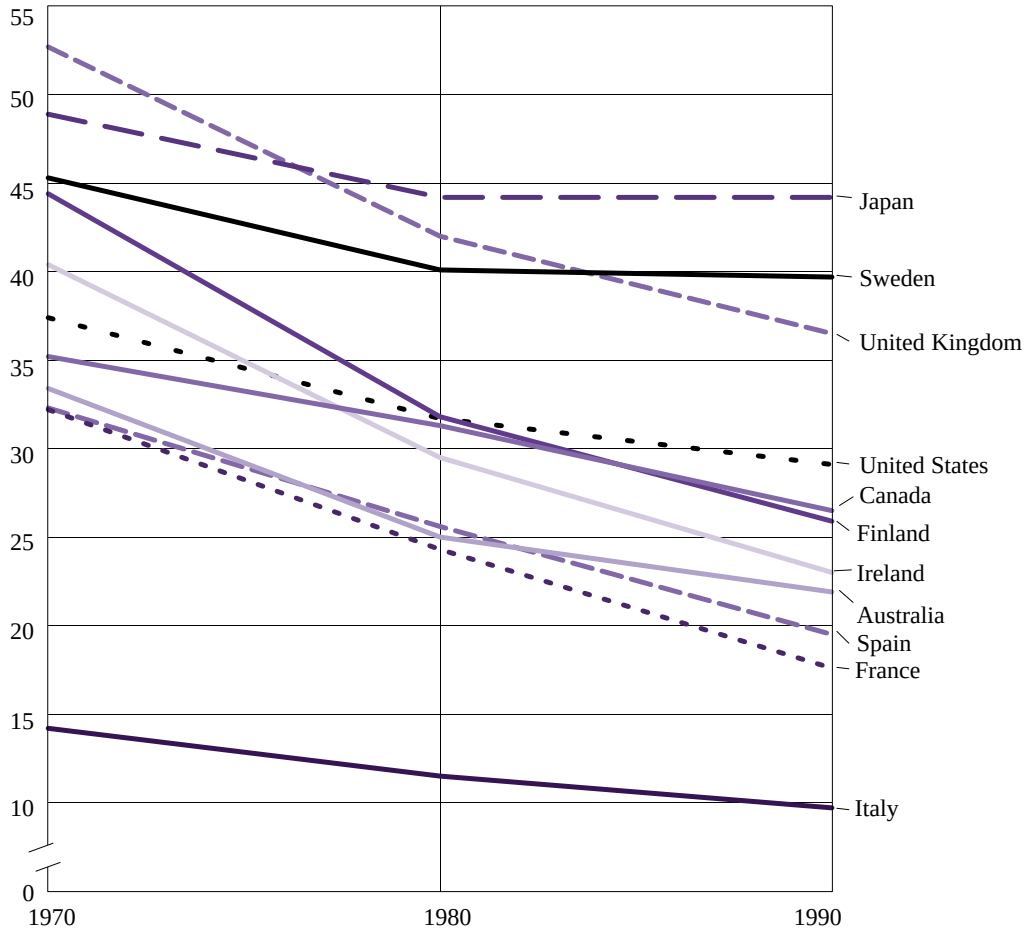
The older worker in the mid-1990's is very different from his/her counterpart in the mid-1960's. Older workers are increasingly well educated, healthier, and more likely to be female. Their choices of retirement plans, pensions and savings schemes have multiplied. On average, men have started working later in life and retired earlier, and hence have spent a considerably smaller portion of their lives in employment relative to earlier generations. The interplay of such factors as increased education, lower fertility, delayed marriage and childbearing, and changing social norms regarding gender roles and child care has enabled many women to enter and/or return to the labor market.

Labor force participation rates of older workers declined in recent decades

The aggregate labor force participation rate of older persons (aged 55 and over) has fallen in developed countries since the late 1960's. Declines over time are spread throughout subgroups of older workers as well, with the most notable decreases usually seen among workers aged 60 to 64. Since the mid-1980's, however, the overall decline has stopped in some nations (e.g., Australia, the United States and Japan), and data from the early 1990's suggest that the aggregate rate may be inching upward in several nations.

An analysis of labor force participation rates in 150 countries (Clark and Anker, 1990) suggested that high national income corresponds to low participation rates at older ages. The study identified several factors associated with reduced labor force participation at older ages, including: greater social welfare expenditures; declining percentages of persons engaged in agriculture; increases in the concentration of population in urban areas; and more-established social security programs. These associations tended to be stronger for older men than for older women.

Figure 2.1
Labor Force Participation Rates for Persons Aged 55 and Over in 11 Developed Nations: Circa 1970, 1980, and 1990
(Percent economically active)



Note: Lines indicate general trends based on data for three points in time, and do not reflect annual changes between the three dates.

Source: OECD, *Employment Outlook 1992*

Fewer than half of persons 55-64 work in some developed nations

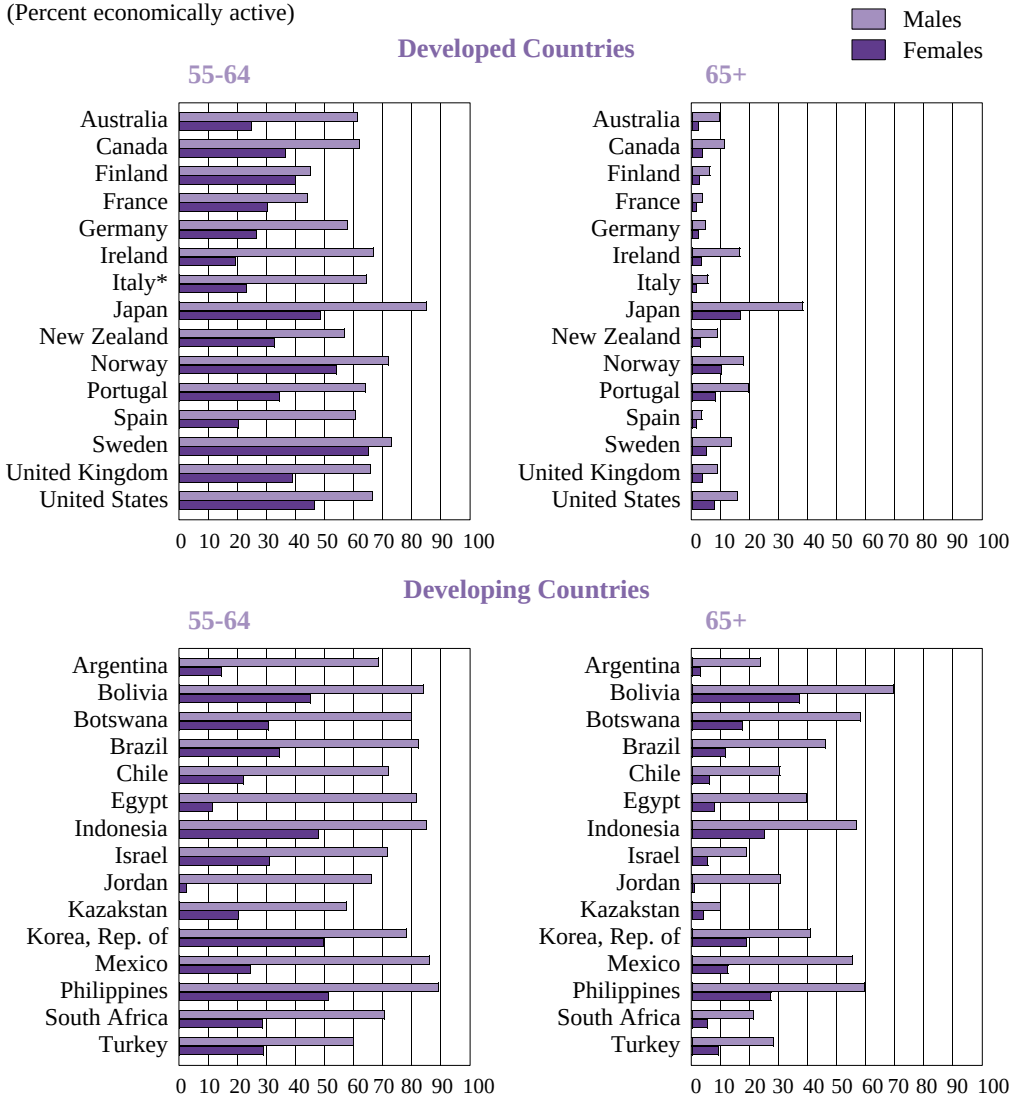
Labor force participation rates at ages 55-64 are less than 50 percent for men and women in Finland, France and the Netherlands. Recent data for 16 OECD countries show that Japan has the highest aggregate labor force participation rate among persons aged 55 and over. Eighty-five percent of men aged 55 to 64 are economically active, and more than one-third of all elderly (65 and over) men continue to work. Economic activity among older Japanese women also is relatively common; the levels for both genders reflect, in part, a high prevalence of part-time work (often after formal retirement) that serves as a transition from full employment to full retirement.

Male labor force participation rates at older ages in developing countries tend to be higher than in industrialized nations, and typically do not decline steeply among the elderly. In countries where retirement coverage is limited to certain categories of workers and/or geographic areas, work is a lifelong constant for many adults. Reported labor force participation rates for older women in developing countries sometimes appear lower than in industrialized societies. However, such rates often are understated insofar as many nations do not include women's work in subsistence and informal sectors in their official statistics on economic activity.

Figure 2.2

Labor Force Participation Rates at Older Ages: Circa 1992

(Percent economically active)



* Data for Italy refer to ages 50-64.

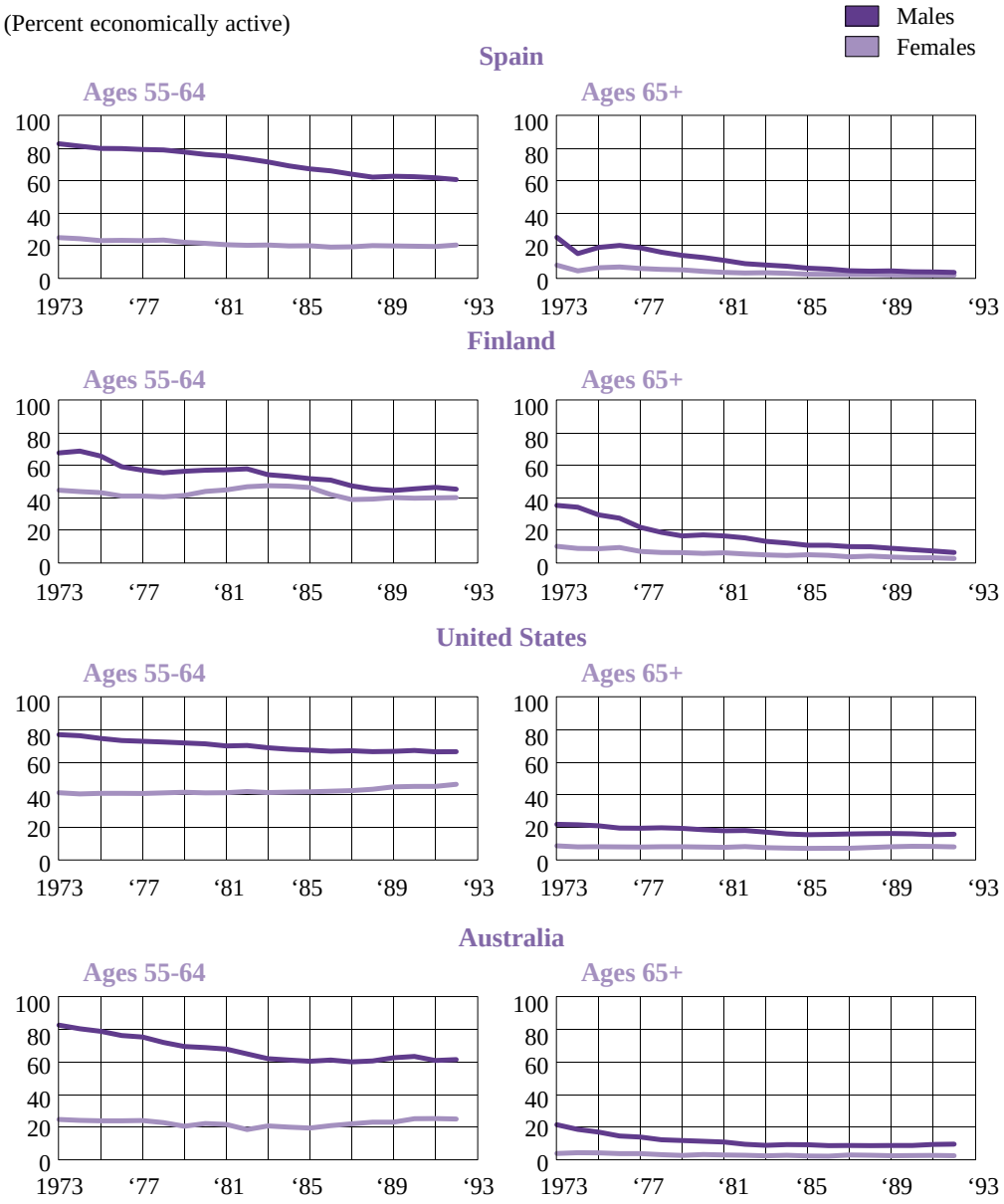
Source: OECD, 1993; ILO, various issues of the *Year Book of Labour Statistics*

Different gender paths for propensity to work at older age

Changes in labor force participation at older ages are driven by several factors. The most important, at least in the industrialized world, seems to be changes in national policies regarding retirement age and early retirement; the average retirement age has declined in many nations over the last several decades (see figure 3.9). Early retirement schemes themselves may be the result of broad economic trends: in some European countries in the 1970's and 1980's, economic downturns created high unemployment which prompted the development of early retirement options.

Another factor is cohort work experience at younger ages. As proportionally greater numbers of younger women enter the labor force, increases in female labor force participation rates (LFPRs) at younger ages "carry over" into older ages, and may partially offset declining male LFPRs at older ages. In fact, declines in the aggregate LFPR of persons aged 55 and over since the late 1960's (figure 2.1) mask two distinct trends. LFPRs of older men declined everywhere, whereas the LFPR of older women often held steady and in some nations increased. But because older men work in much greater numbers than do older women, increases in female participation are more than offset by falling male participation.

Figure 2.3
Labor Force Participation Rates at Older Ages: 1973 to 1992
(Percent economically active)



Source: OECD, 1993

Female share of older labor force increasing

The disparate trends in male and female labor force participation at older ages affect the gender composition of the older labor force. The proportion of women among older workers generally has been rising in most developed countries since at least 1970, and a similar trend has emerged in many developing countries as well. One notable national exception is Hungary, where declining female labor force participation at older ages since 1970 has been exacerbated by recent economic reforms that have put women in low-skilled jobs at a relative disadvantage (OECD, 1994).

The changing gender balance among older workers has potential implications for social support systems. The crossculturally important role of older women as primary caregivers to needy elderly parents obviously is affected by labor force participation. And although women's pension coverage eventually will grow with expanded labor force participation, women tend to receive lower wages and spend fewer years in the labor force relative to men. Hence their public and private pensions (as well as personal savings) are likely to be lower. For elderly married women, personal pension benefits may be a welcome supplement to a spouse's benefits; for elderly widows and never-married women, pensions may be meager.

Figure 2.4

Women's Share of Older Labor Force: Circa 1970 and 1991

(Percent female among workers aged 55+)

Source: OECD, 1993; ILO, various issues of the *Year Book of Labour Statistics*; and country sources

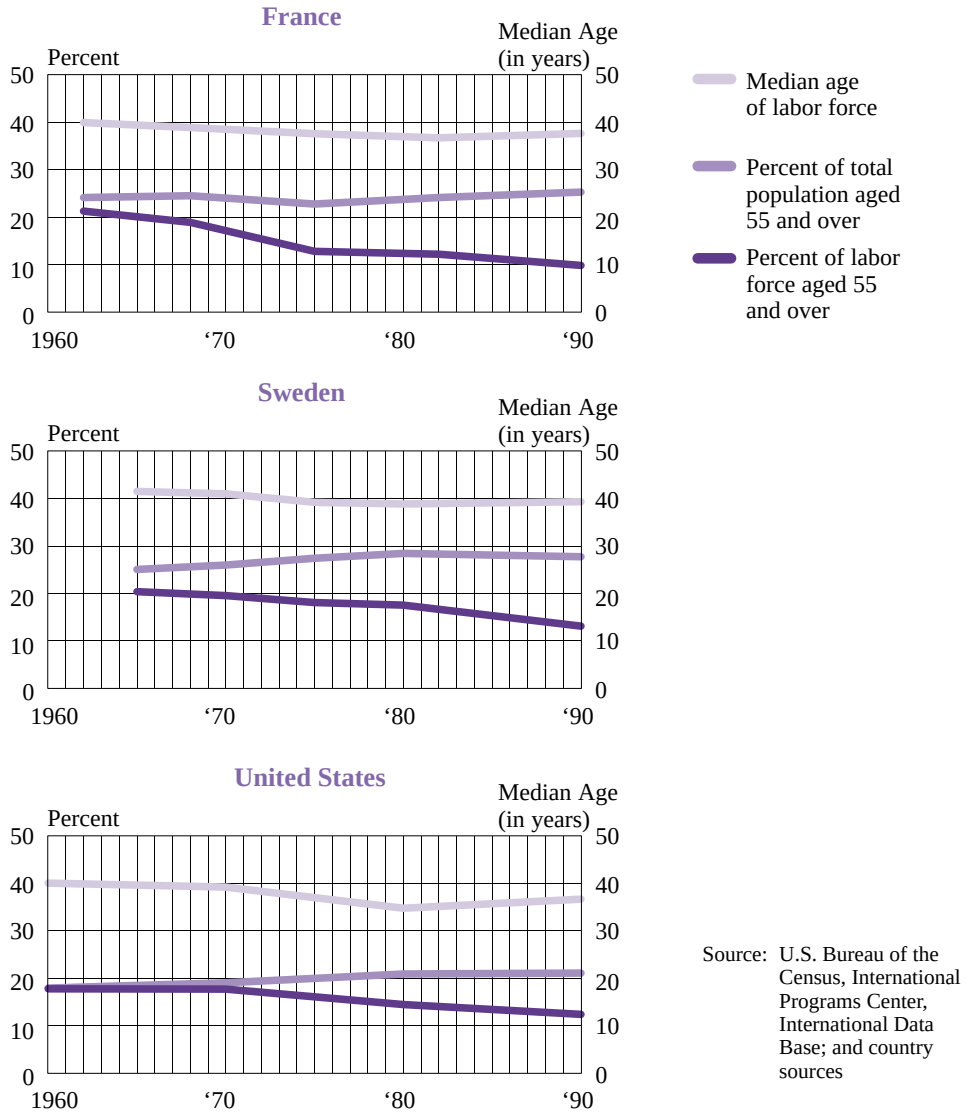
Population aging not synonymous with aging of the labor force

As populations age, we might expect to see a corresponding aging of the labor force. In countries where fertility has been low for decades, the size of labor force entry cohorts can be small relative to older cohorts, and therefore the labor force will be aging. In Canada, for instance, where workers aged 45 and over constituted 27 percent of the labor force in 1988, one projection (Tindale, 1991) suggests that this figure will rise to 33 percent by the turn of the century and further to 39 percent by the year 2010.

From the early 1960's to 1990, however, predictions of aging labor forces were not necessarily borne out in all developed countries. A trend toward retirement at younger ages (see Chapter 3) served as a counterweight to shrinking entry cohorts. In France, for example, the proportion of the population aged 55 and over was 24.1 percent in 1962, remained essentially stable through 1975, and then increased gradually to 25.2 percent in 1990. Over the same period, the proportion of the labor force aged 55 and over declined from 21.2 percent in 1962 to 9.8 percent in 1990. As a result, the median age of the labor force decreased from 40.0 years in 1962 to 37.3 years in 1990. Similar trends were observed in Sweden and the United States, although the median age of the U.S. labor force rose slightly between 1980 and 1990.

Figure 2.5

Percent of Total Population and Labor Force Aged 55 and Over, and Median Age of Labor Force: 1960's to 1990

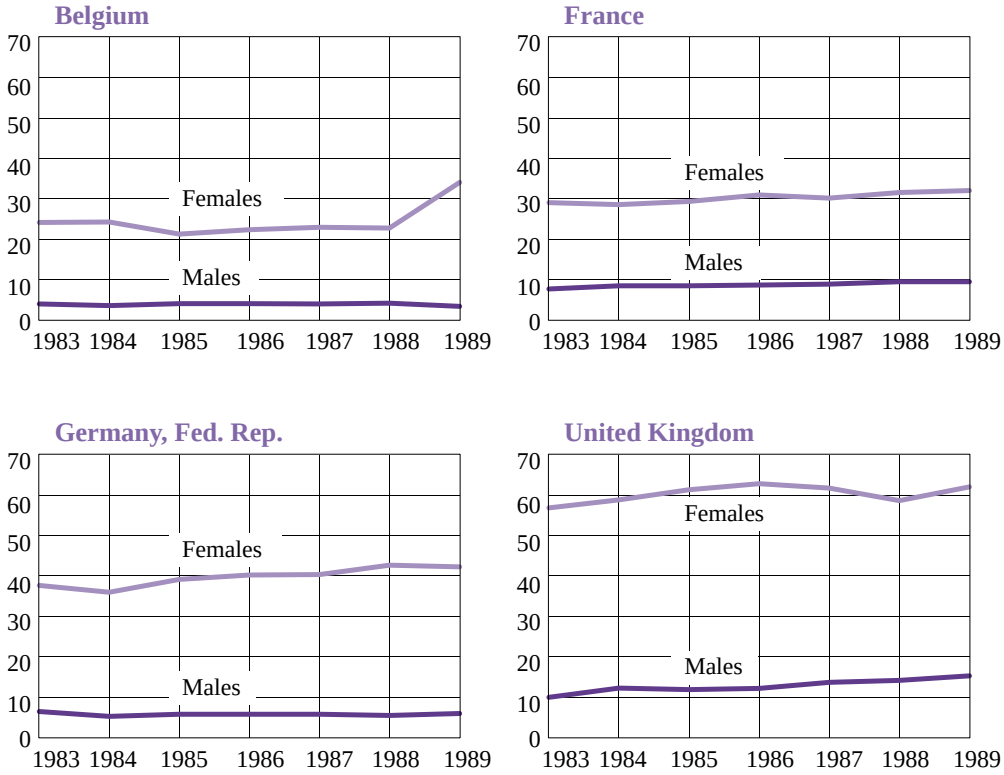


Source: U.S. Bureau of the Census, International Programs Center, International Data Base; and country sources

Older employed women often work part-time

Part-time work is common among older workers in some developed countries, as noted earlier in the case of Japan. In general, part-time work is much more frequent among older women than men. In 1989, part-time work accounted for three-quarters of total employment for older (aged 55 and over) women in the Netherlands, and more than half in the United Kingdom and Denmark. On the other hand, 90 percent of men aged 60 to 64 in European Union nations were still working full-time in 1991.

Figure 2.6
Percent of Workers Aged 55 and Over Who Work Part Time: 1983 to 1989



Source: OECD, *Employment Outlook 1992*

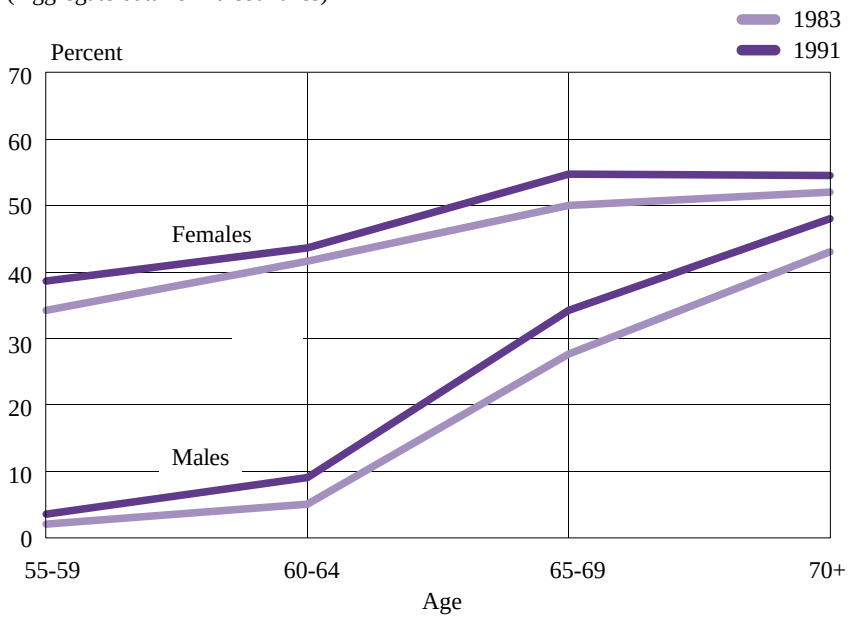
A trend toward part-time work?

In industrialized nations, an increasing proportion of older workers apparently are making the transition from full-time work to retirement via a period of part-time work. Part-time work as a proportion of total employment among older workers generally held stable for men during the 1970's and early 1980's, but increased for women. In the later 1980's and early 1990's, the relative importance of part-time work increased for both men and women, and conversely, the share of full-time workers declined. Aggregate European Union data for 10 countries suggest that the incidence of part-time work rises with age among older workers.

Figure 2.7

Percent of Older Workers Employed Part Time, by Age, in the European Union: 1983 and 1991

(Aggregate data for 10 countries)



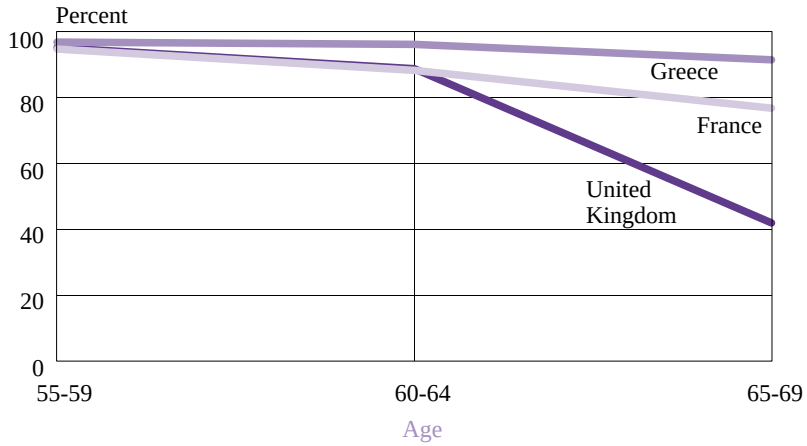
Source: Eurostat, 1993c

Average hours worked decline with age for men, but not necessarily for women

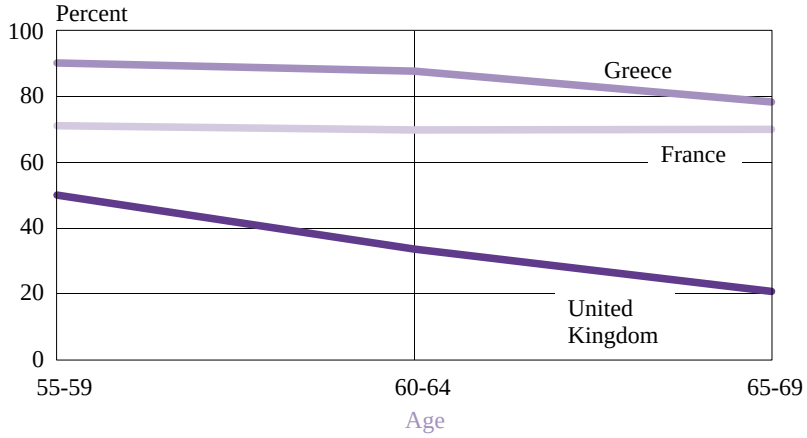
Information on the prevalence of part-time work typically derives from self-descriptions of survey respondents. A different gauge considers data on numbers of hours actually worked in a reference period. Available data on weekly hours worked in 1990 in developed countries show that a large majority (90 percent or more) of men aged 55 to 64 work more than 30 hours per week. In 7 of 8 countries, the average number of weekly hours worked declines after age 64, the exception being Portugal. Among older female workers, proportions working 30 or more hours per week are lower than for men in all countries at all ages. However, in 5 of the 8 countries there is a very slight or no decline after age 64. The most pronounced drops with age occurred in Denmark and the United Kingdom.

Figure 2.8
Percent of Older Workers Working 30 or More Weekly Hours: 1990

Males



Females



Source: OECD, *Employment Outlook 1992*

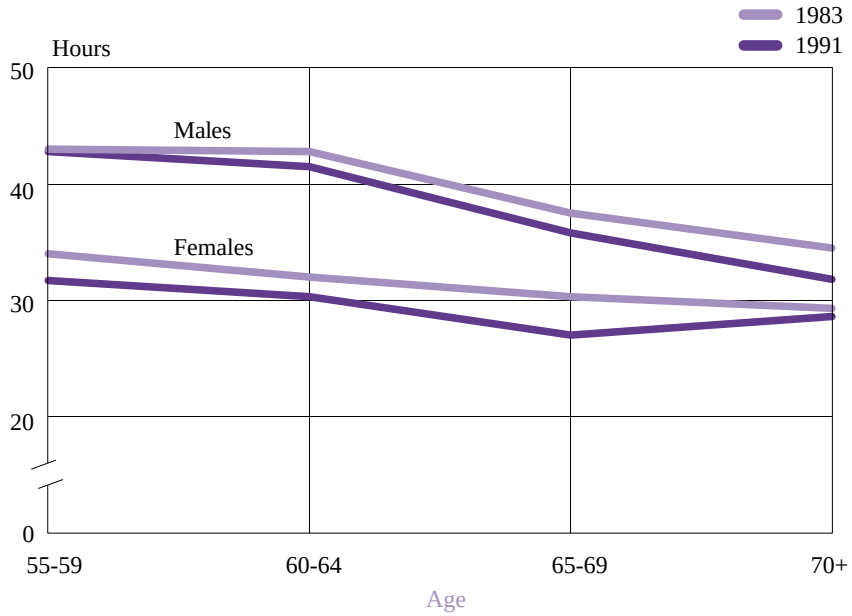
Length of work week has been shortening in Europe

An aggregation of labor force survey data for 10 European Union countries for the period 1983-91 indicates a decline in the average number of weekly hours worked at older ages. The decline is attributed (Eurostat, 1993) both to changes in normal working time as well as to an increase in the proportion of part-time employment during the period. Proportional reductions in average weekly hours worked were greater for older women than for older men, except at the oldest ages (70 and over).

Figure 2.9

Average Hours Worked per Week, by Age, in the European Union: 1983 and 1991

(Aggregate data for 10 countries)



Source: Estimated from Eurostat, 1993c

Older workers disproportionately employers, self-employed and family workers

Labor force surveys in European Union countries reveal major differences among older and younger workers in terms of employment status and type of work. Among workers under age 60, 82 percent of men and 87 percent of women are employees; 17 percent of men and 9 percent of women are either employers or self-employed; and the remaining small fractions are family workers (with or without direct compensation). Among the labor force aged 60 and over, however, only 53 percent of men and 57 percent of women are employees. Large percentages of male (44%) and female (30%) older workers are employers or self-employed, and proportions of family workers are three times as high as among workers aged 14 to 59.

Figure 2.10

Percent Distribution of Younger and Older Workers, by Occupational Status, in the European Union: 1991

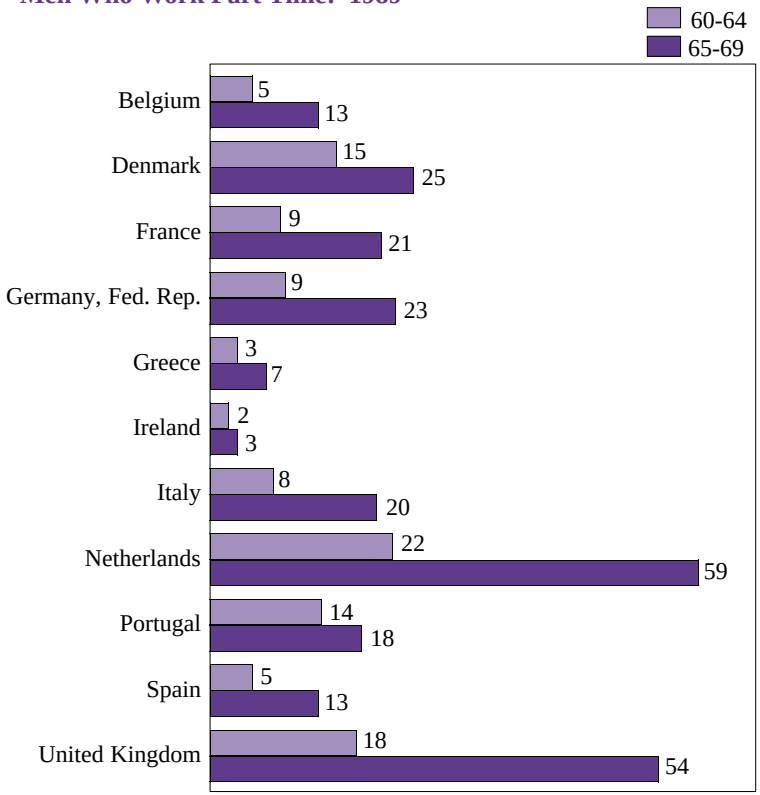
(Aggregate data for 12 countries)

Source: Eurostat, 1993b

Part-time work rises with age among older self-employed men

As seen in figure 2.10, older workers are more likely than younger workers to be employers or self-employed. Within the older worker category, there is a notable jump in the proportion of self-employed elderly men vis-a-vis self-employed men aged 60 to 64. Self-employed workers have an advantage relative to most employees in terms of shifting from full-time to part-time work with age as desired. On the other hand, public pension coverage for the self-employed is often less favorable than for employees, which may induce or compel self-employed workers to remain in employment longer (OECD, 1992).

Figure 2.11
Percent of Older Self-Employed Men Who Work Part Time: 1989



Source: Eurostat data cited in OECD, *Employment Outlook 1992*

Older workers in developed countries now concentrated in services

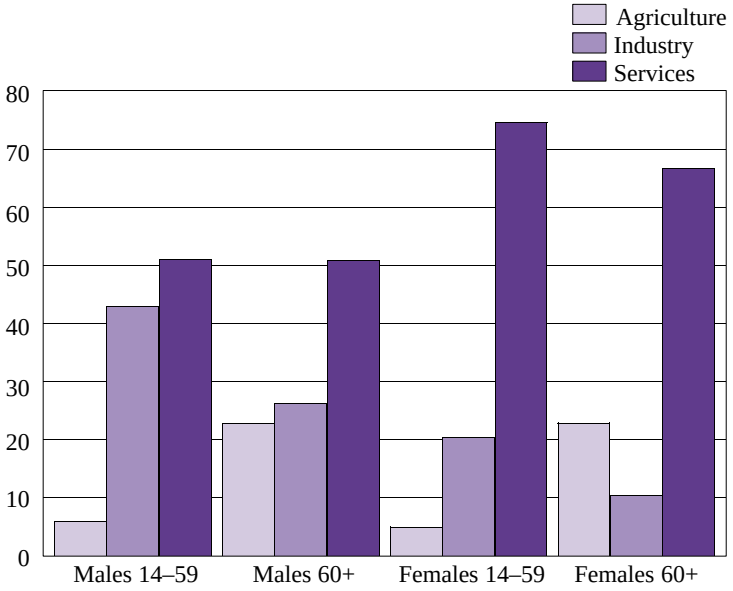
Despite a worldwide trend away from employment in agriculture, jobs in this sector remained paramount for older workers in the 1970's and 1980's, even in a majority of developed countries. By 1991, service jobs had attained primacy in the European Union among both younger and older workers. The agricultural sector continues to employ a disproportionate number of older workers relative to workers under age 60, and slightly more so for women than for men.

Older workers in most developing countries remain highly likely to be employed in the agricultural sector, because the predominantly rural character of many economies affords few alternative opportunities for employment.

Figure 2.12

Percent Distribution of Younger and Older Workers, by Occupational Sector, in the European Union: 1991

(Aggregate data for 12 countries)



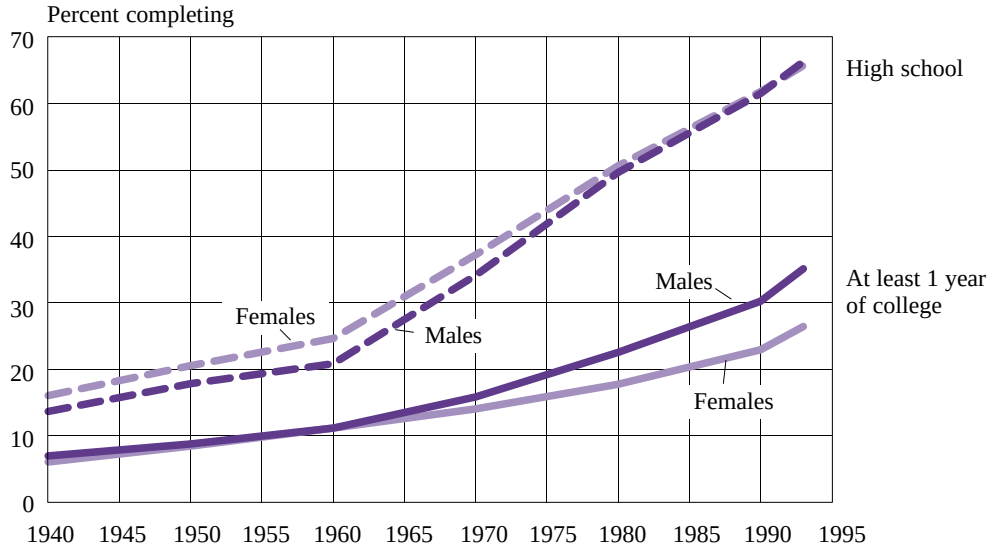
Source: Eurostat, 1993b

Educational attainment of older workers increasing

Post-World War II investments in education are reflected in the educational experience of today's older-working-age population versus that of earlier cohorts. In the United States, for example, the proportion of women aged 55 and over with a complete high school education increased from 25 percent in 1960 to 66 percent in 1993; the percentage for men more than tripled during the same period.

Increases in educational attainment are thought to reduce potential levels of individual and societal dependence. Higher educational attainment allows individuals to prepare for the economics of old age by enhancing their ability to accumulate resources. On a macroeconomic level, educational attainment enhances labor market flexibility, improves the ability of a society to adapt to changing cultural and technological demands, and facilitates structural adjustments.

Figure 2.13
Educational Attainment at Ages 55 and Over in the United States: 1940 to 1993



Source: Kominski and Adams, 1994

The Transition to Retirement

Just as the propensity to work at older ages varies considerably from country to country, so too do patterns of retirement and the concept of retirement itself. In predominantly rural and agricultural societies, many elderly persons work of necessity; retirement may be a luxury largely reserved for urban elites. During periods of economic contraction in highly industrialized nations, on the other hand, governments may actively encourage older workers to cease active employment at relatively young ages.

Many countries have witnessed major changes in the work and retirement patterns of their older citizens during the last 3 decades (Jacobs, Kohli and Rein, 1991). Until the 1950's in developed countries, retirement from the workforce was an event that occurred almost exclusively at a regulated age, with little possibility of receiving a pension prior to that age (Tracy, 1979). Since then, countries have adopted a wide range of approaches to providing old age security, and different potential routes have emerged for persons making the transition from labor force participation to retirement. Changes regarding part-time work, unemployment, disability pensions, and early retirement have hastened withdrawal from the labor force, and increased the average number of years an individual spends outside of formal economic activity (Torrey, 1982). More recently, policy planners and legislators have begun to question the wisdom of many of these changes, and have begun to nudge the pendulum in the other direction. Concurrently, there is growing interest among researchers and gerontologists (Johnson and Falkingham, 1992; Gustman, Mitchell and Steinmeier, 1994; Marshall, 1995) in the timing and dynamics of retirement decisions, the nature and meaning of work itself, and the importance of work experience within a life course perspective.

Chapter 3

Unemployment rates for older workers higher in 1990 than in 1980

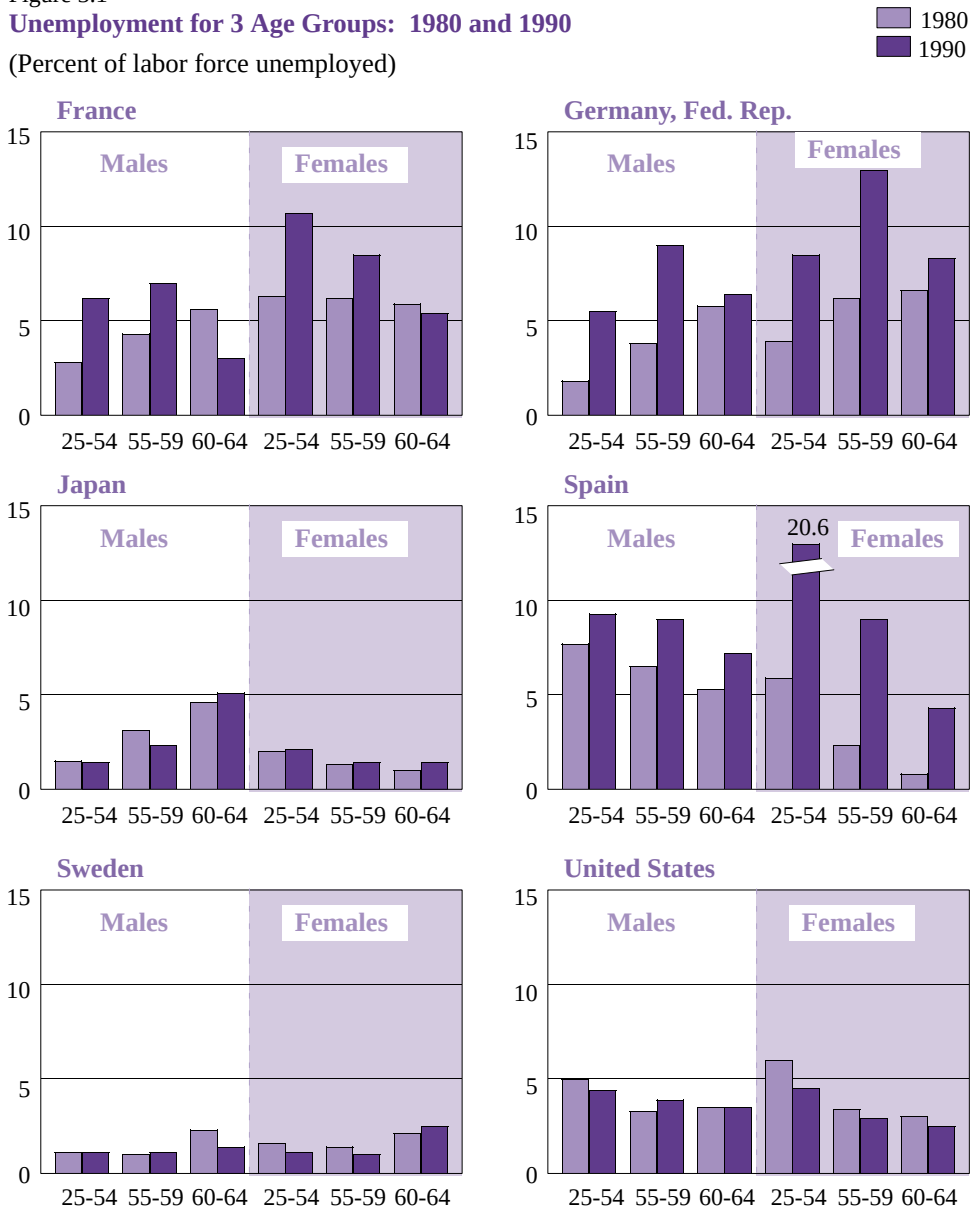
Establishing a clear time trend in unemployment rates of older persons is hampered by several factors, including data availability, the nature of the business cycle, and differences in definition across countries. One comparison of 16 industrialized countries (OECD, 1992) showed that, with the exception of Japan, unemployment rates for men aged 55 to 59 were higher in 1990 than in 1980. Rates for women aged 55 to 59 also tended to be higher. Differences among workers aged 60 to 64 generally were smaller and less consistent.

In a majority of the 16 nations, unemployment rates at ages 55 to 59 were higher than at ages 60 to 64 in 1990, for both sexes. Except in Spain, Sweden and the United States, unemployment among men 55 to 59 was higher than among prime-age (25 to 54) workers; the opposite was true for women in a majority of countries.

Figure 3.1

Unemployment for 3 Age Groups: 1980 and 1990

(Percent of labor force unemployed)



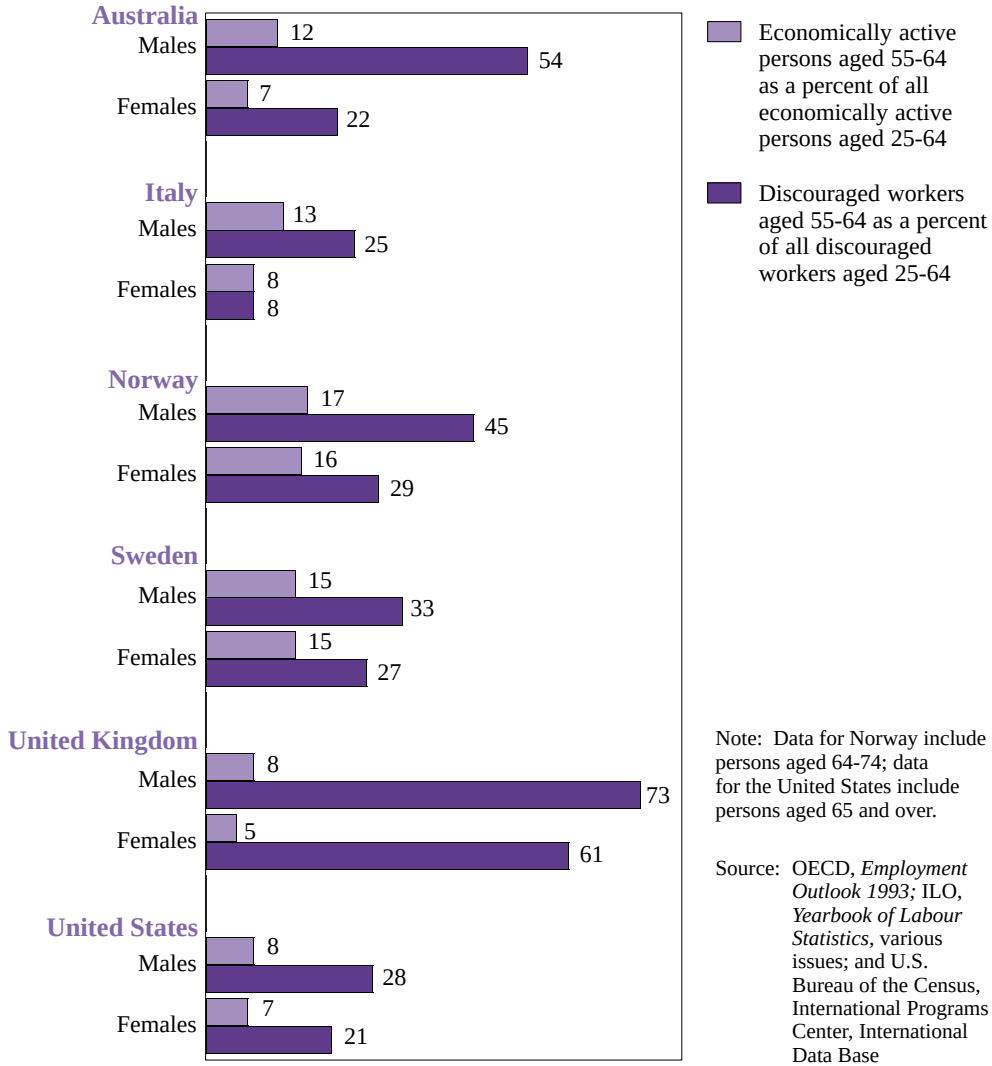
Source: OECD, *Employment Outlook 1992*

Discouragement reduces the ranks of older workers

Unemployment figures do not account for former and potential workers who have become discouraged from actively seeking work. Although the definition of discouraged workers differs from country to country, the basic concept refers to those persons who are not looking for employment because they either believe no work is available or do not know where to look. Such discouragement in industrialized nations often is attributed to changing occupational structures and the need for specialized education which favors younger over older workers.

Available data for 6 nations indicate that discouragement is more pervasive among older (55-64) workers than among younger (25-54) workers, particularly in the United Kingdom. For countries with data over time, there were proportionally more older workers in discouragement in 1991 than in 1983 (OECD, 1993). Furthermore, discouragement tends to be of a more permanent nature for older workers, who are much less likely to return to the labor force than discouraged workers of younger age (OECD, 1992).

Figure 3.2
Older Share of Economically Active Population and Discouraged Worker Population: 1991
(In percent)



Note: Data for Norway include persons aged 64-74; data for the United States include persons aged 65 and over.

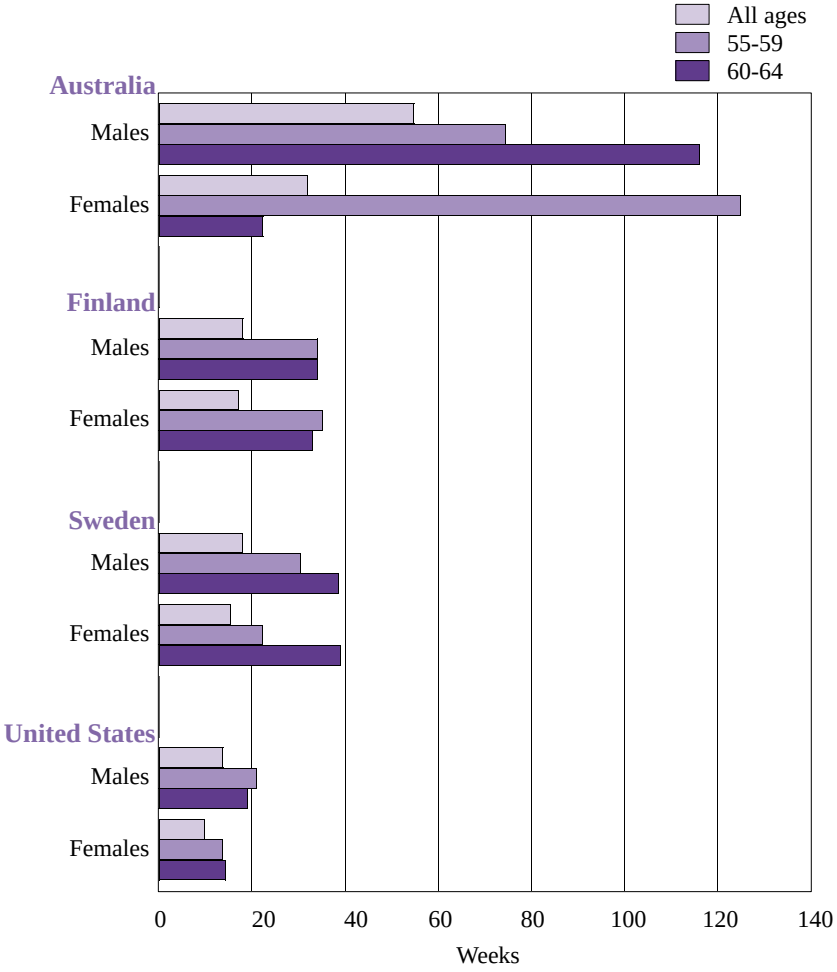
Source: OECD, *Employment Outlook 1993;* ILO, *Yearbook of Labour Statistics*, various issues; and U.S. Bureau of the Census, International Programs Center, International Data Base

Duration of unemployment higher at older ages

The formidable barriers that older persons sometimes face in finding work are reflected in data on duration of unemployment, which typically is longer for older than for younger workers. Available data from developed countries suggest that the average duration of unemployment in most nations is greater for older men than for older women.

When comparing data on unemployment crossnationally, it bears repeating that the meaning of unemployment of older workers may vary. Some European countries do not require older workers to register as unemployed in order to receive unemployment benefits. Some countries make full unemployment benefits available for older workers for long periods of time; for example, two and one-half years for older men in Germany, and five years for older men in France. In such cases, unemployment reasonably may be viewed as a socially-sanctioned step in the transition to retirement, and as a pathway to early retirement (Jacobs and Rein, 1994).

Figure 3.3
Average Duration of Unemployment for All Workers and for Older Workers: 1989



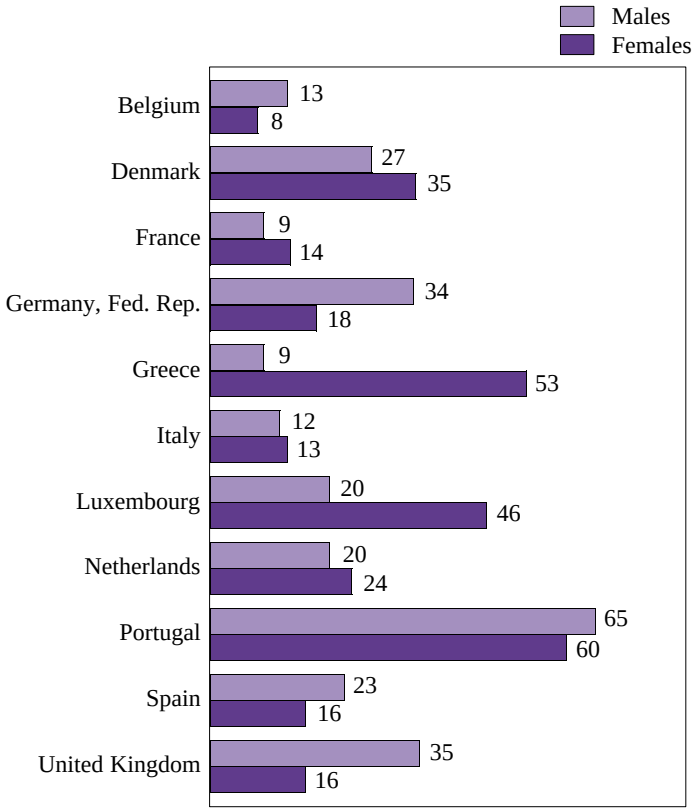
Source: OECD, *Employment Outlook 1992*

Illness and disability important precursors of retirement

The existence of public and private pensions allows most older workers to move directly into retirement at a predetermined age. During the last 25 years, however, the "normal" path to retirement branched in several directions. Especially in Europe, periods of recession and high overall unemployment led some governments to encourage retirement via public measures such as long-term sickness benefits, disability schemes, and early retirement plans. Among recently inactive older workers in 1990, proportions who report that they left work due to illness exceeded 25 percent in several countries.

Figure 3.4

Percent of Recently Inactive Older Workers Who Left Last Job Due to Illness: 1990



Note: Data refer to persons aged 55-64 who had worked during the period 1987-1990.

Source: OECD, *Employment Outlook 1992*

Disability transfers to workers rise steeply with age

The extent to which the data in the preceding figure represent actual poor health as opposed to broad operational definitions of "illness" is a subject of current research. Because the likelihood of ill health increases with age, one might expect disability payments to workers to likewise rise with age, as shown here for 4 countries.

Research suggests, however, that health-related changes are unlikely to explain either the magnitude of difference in disability transfer rates among countries or the changes within countries over time (Levine and Mitchell, 1993). Some studies argue that policy changes in the definition and compensation of disability have led persons to exaggerate health problems. Such inferences imply that government policies aimed at ameliorating income loss associated with poor health may have unintended effects on labor force participation (Quinn and Burkhauser, 1994).

Table 3.1
Disability Transfer Recipients per 1,000 Active Labor Force Members in 3 Age Groups: 1970-1989

Age and Country	1970	1975	1980	1985	1989[1]
15-44					
Netherlands	14	28	49	50	53
United States	11	17	16	20	23
Sweden	18	20	19	20	21
Germany[2]	7	6	7	8	5
45-59					
Netherlands	102	164	269	279	317
United States	33	68	83	71	72
Sweden	66	95	99	108	116
Germany[2]	75	64	84	103	75
60-64					
Netherlands	274	410	989	1,249	1,932
United States	154	265	285	254	250
Sweden	229	382	382	512	577
Germany[2]	419	688	1,348	1,291	1,109

[1]Data for the Netherlands refer to 1990.
[2]Data for Germany refer to the former Federal Republic.

Source: Aarts, Burkhauser and de Jong, 1992, cited in Quinn and Burkhauser, 1994

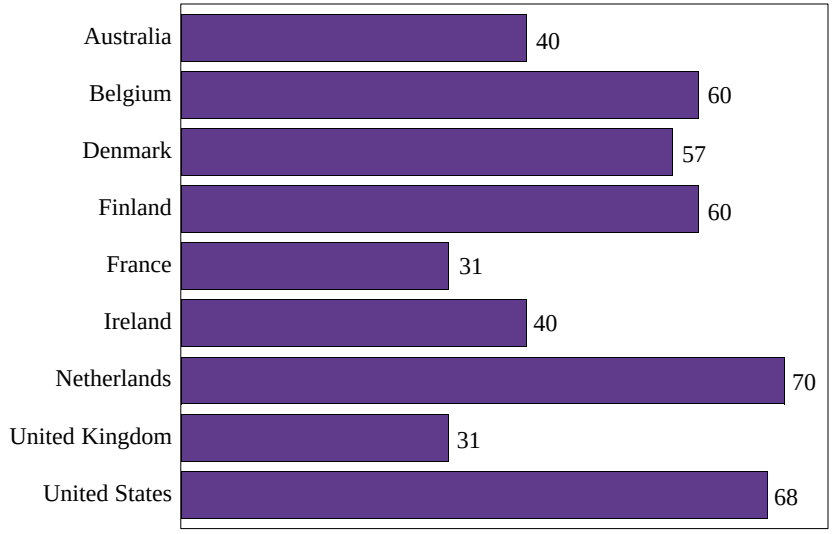
Many OECD nations have liberal invalidity benefits

Disability pension programs expanded in the 1970's and 1980's in numerous developed countries, in terms of benefit amounts as well as the ability to qualify for programs as a result of relaxed definitions. In Hungary, the number of new disability pensions each year jumped from around 45 per 10,000 workers in the early 1970's to 145 in a little over two decades. The number of beneficiaries also rose in most OECD countries during the two decades, with increases more likely among older men than older women (OECD, 1992). Income provision under such programs is relatively high in the Netherlands and the United States, replacing about 70 percent of the gross and average earnings, respectively, of a production worker in the manufacturing sector.

Figure 3.5

Income Replacement Rates Under Invalidity Benefits: 1990

(Percent of gross earnings replaced)



Note: Based on gross earnings of production workers in manufacturing, except for the U.S. where average earnings are used. Figure for the U.K. assumes no complementary pension. See source for additional details.

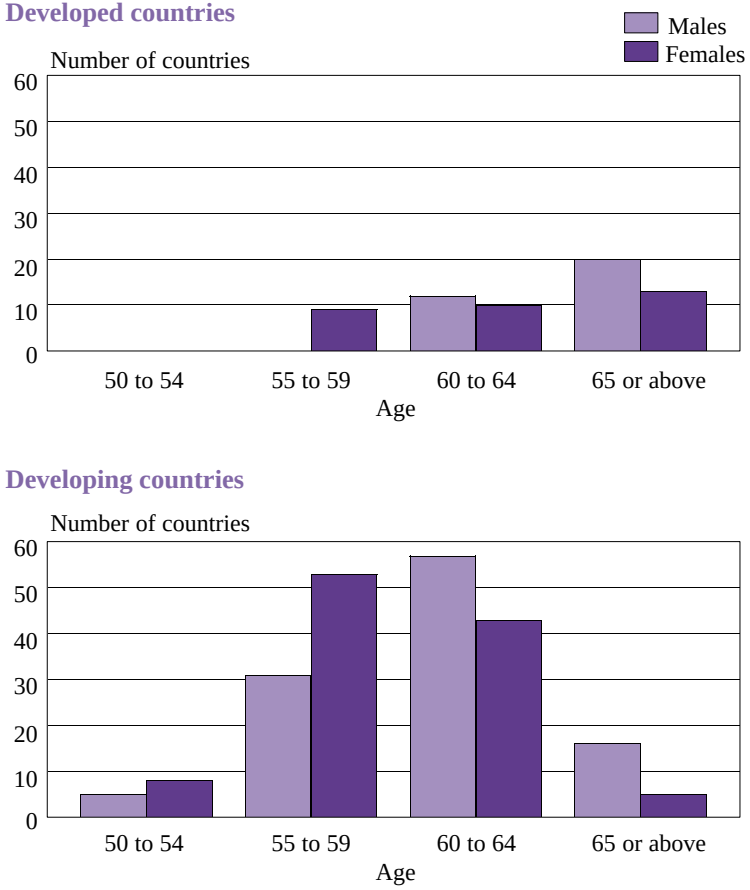
Source: OECD, *Employment Outlook 1992*

Standard retirement age lower in developing than in developed countries

Information for 32 developed countries indicates that men become eligible for full social security benefits prior to age 65 (usually age 60) in 12 nations, at age 65 in 16, and at age 66 or 67 in another 4. While age 65 also is the most common standard retirement point for women in these countries, several nations allow women to retire earlier than men in spite of the female advantage in average life expectancy. In 19 countries, the standard female retirement age is between 55 and 62.

Standard retirement age in developing countries often is lower than in the more industrialized world, most commonly at age 60 for men and age 55 for women. One reason for the regional difference may be average life expectancy, which has usually been lower in developing countries. Another reason may involve large numbers of young persons in need of jobs. And in many developing countries, formal retirement with pension benefits is an option limited to certain classes of workers (often higher-income workers), as opposed to being a society-wide program. Hence, political influence may have played a role in the setting (and maintaining) of relatively low retirement ages in some countries (World Bank, 1994).

Figure 3.6
Age of Eligibility for National Old-Age Pension: Circa 1993



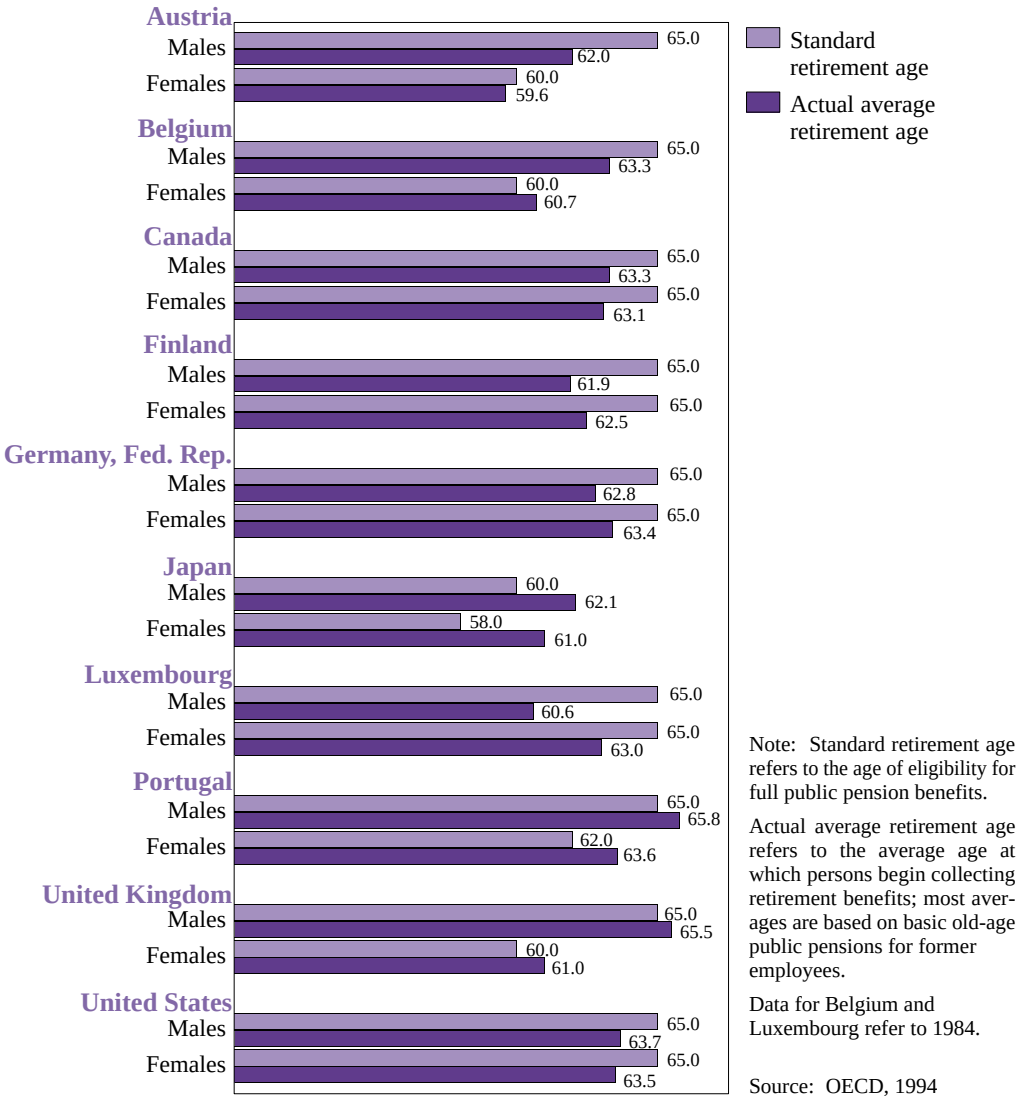
Source: USSSA, 1994

Actual retirement age often lower than standard retirement age

At some point in preceding decades, many industrialized nations lowered the standard age at which persons become fully entitled to public pension benefits. These reductions were propelled by a combination of factors including general economic conditions, changes in welfare philosophy, and private-pension trends.

One important issue for policymakers is the relationship between standard retirement age and "actual" retirement age, the average age at which retirement benefits are awarded. In spite of the lowering of standard retirement ages in developed countries, the actual average age of retirement (as calculated by the OECD, 1994) tends to be lower than the standard age. The proliferation of early retirement schemes has increased the number and usually the proportion of older workers who avail themselves of such programs (Tracy and Adams, 1989).

Figure 3.7
Standard and Actual Average Retirement Age: Circa 1990



Note: Standard retirement age refers to the age of eligibility for full public pension benefits.

Actual average retirement age refers to the average age at which persons begin collecting retirement benefits; most averages are based on basic old-age public pensions for former employees.

Data for Belgium and Luxembourg refer to 1984.

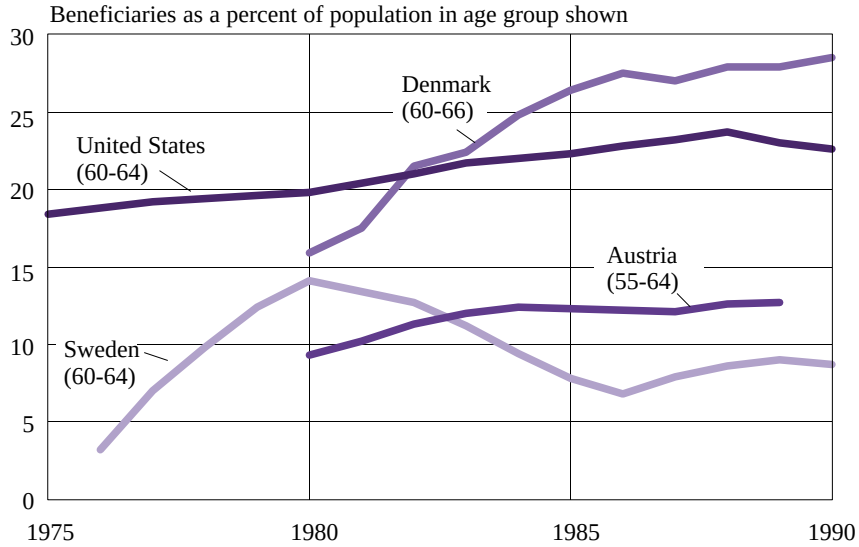
Source: OECD, 1994

Early retirement gained prominence in the 1970's and 1980's

The downward shift in the standard age at retirement during the 1970's and 1980's was accompanied by an increase in the number of public early retirement programs and a corresponding increase in the number of retirees leaving the labor force prior to the standard age. Available OECD data show that the incidence of early retirement (i.e., numbers of retirees as a percentage of population in pre-retirement age groups) also tended to rise during the 1980's, although declines are seen in certain national programs in the latter part of the decade. Some countries promoted early retirement as a means of offsetting persistently high levels of unemployment. In Denmark, for example, a voluntary early retirement scheme was constructed to encourage older workers to leave the labor market (Petersen, 1991).

Mandatory retirement practices and worsening health of older workers were two factors said to have increased early retirement. More recent research, however, discounts the importance of these factors (Levine and Mitchell, 1993; Mitchell, 1994) and points instead to changes in social security/private pension provisions as well as to improved economic status of older workers and increases in wealth overall. As Ruggles (1992) has noted in the context of the United States, comparisons of today's elderly with the elderly in previous decades suggest great increases in economic status—the reasons are that persons entering the ranks of the elderly have higher educational attainment, higher-paid employment histories, and higher average income than did earlier cohorts of elderly.

Figure 3.8
Participation in Selected Early Retirement Pension Schemes



Pension schemes:
Austria—long-service pension
Denmark—early retirement pay
Sweden—part-time pension
United States—Social Security early retirement

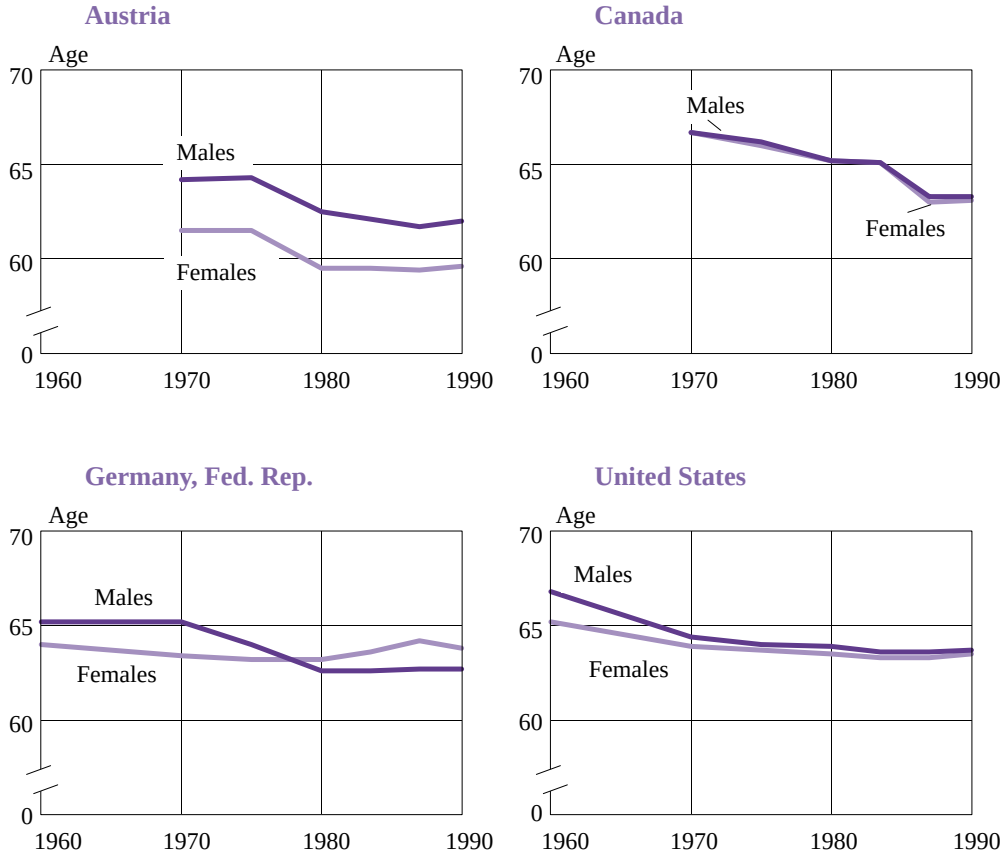
Source: OECD, *Employment Outlook 1992*

Decline in average retirement age may be reversing

Declines over time in labor force participation at older ages have corresponded to declines in average retirement age, at least through the mid-1980's. As pension systems mature over time, more workers become eligible for benefits (i.e., have worked for a sufficient number of years) at the minimum or standard retirement age (OECD, 1992). And as noted earlier, the liberalization of disability and early retirement schemes (which perhaps reflect general social preferences) have contributed to older workers' exits from the labor force.

For 9 OECD countries with data on average retirement age spanning more than a decade, the trend has been downward in all except the United Kingdom, where the average retirement age for Category A pensions was practically the same in 1988 as in 1975 for both men and women. The steepest declines have been recorded in Portugal, where the average retirement age for male employees dropped 3.3 years (69.1 to 65.8) from 1975 to 1990, with an even steeper drop of 6.9 years (70.5 to 63.6) for female employees. The overall decline may be abating, however; more often than not, there was no change or even a slight increase in average retirement age during the 1984-1990 period. This development would be consistent with a stagnation or slight increase in labor force participation rates at older ages.

Figure 3.9
Average Retirement Age for Employees Covered by Public Pension Schemes

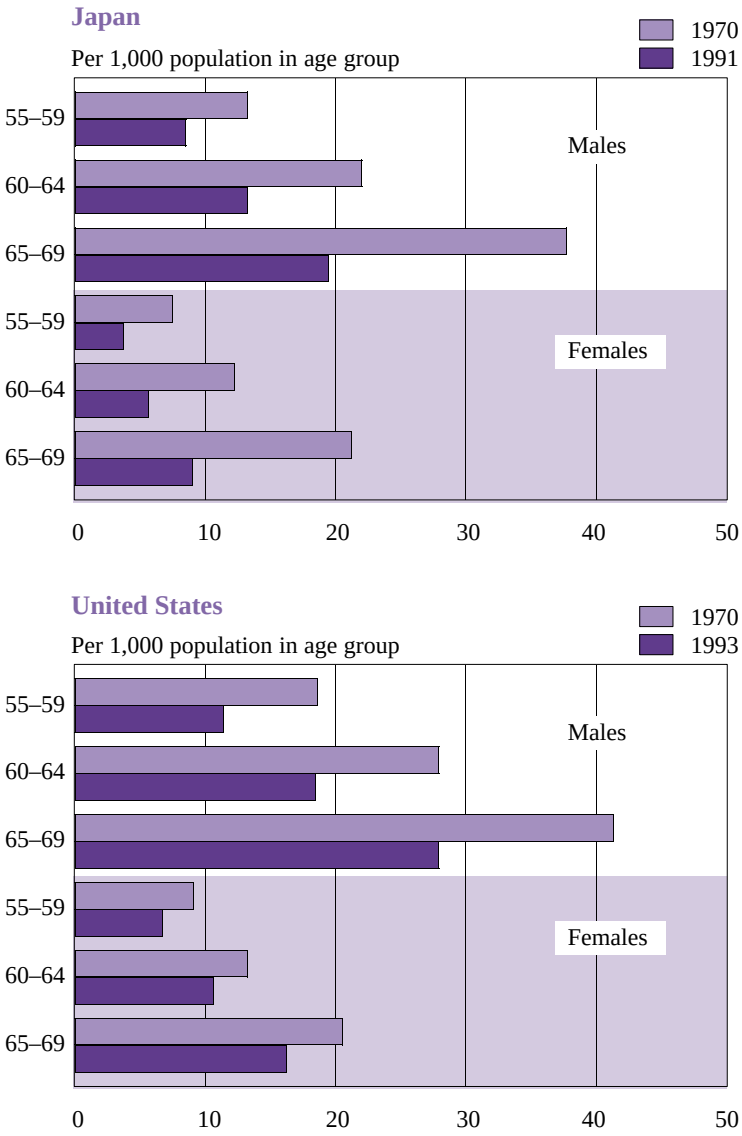


Source: OECD, 1994

Declining mortality rates accompany declining retirement ages

Age-specific adult mortality rates have been falling in most developed countries since the mid-1970's. This is reflected in increased life expectancy both at birth and at older ages, as described in Chapter 1. Proportionally greater percentages of successive cohorts are living to and beyond retirement age, and the decline in mortality at older ages shows no sign of abating. Improvements in survival have been verified even at the oldest ages (i.e., between 80 and 100), such that the number of centenarians in developed countries has doubled each decade since 1950 (Vaupel and Jeune, 1994).

Figure 3.10
Mortality Rates at/around Retirement Age in Japan and the United States: 1970 and Early 1990's

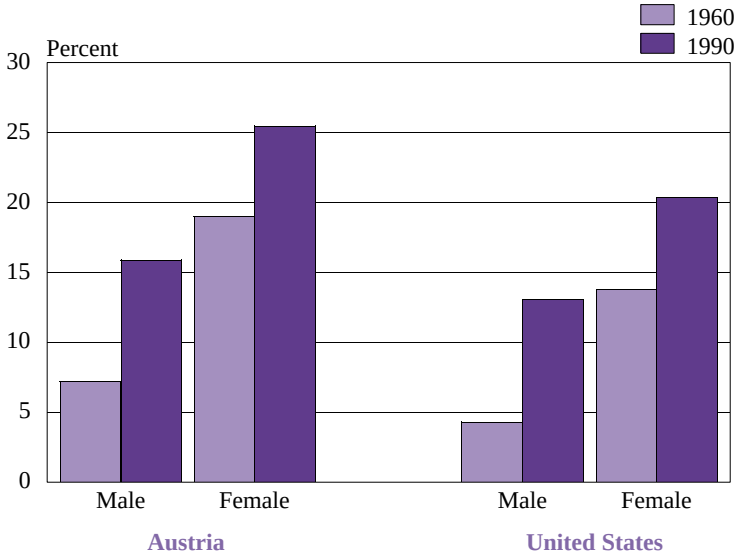


Source: Country sources

Adults now spend a greater portion of their lives in retirement

Gains in life expectancy during the 20th century have intersected with declining retirement ages to produce an increase in the proportion of an individual's life spent in retirement. Figure 3.11 is based on life expectancy at age 20 and average retirement age at two points in time. In the United States, for example, life expectancy for males at age 20 increased from 49.8 years in 1960 to 53.3 years in 1990, while the average age at retirement dropped from 66.8 to 63.7 years. Assuming men began their work life at age 20, the average years in employment declined from 46.8 to 43.7, while years spent in retirement (relative to life expectancy at age 20) increased from 3 years to 9.6 years.

Figure 3.11
Percent of Adult Life Spent in Retirement in Austria and the United States: 1960 and 1990

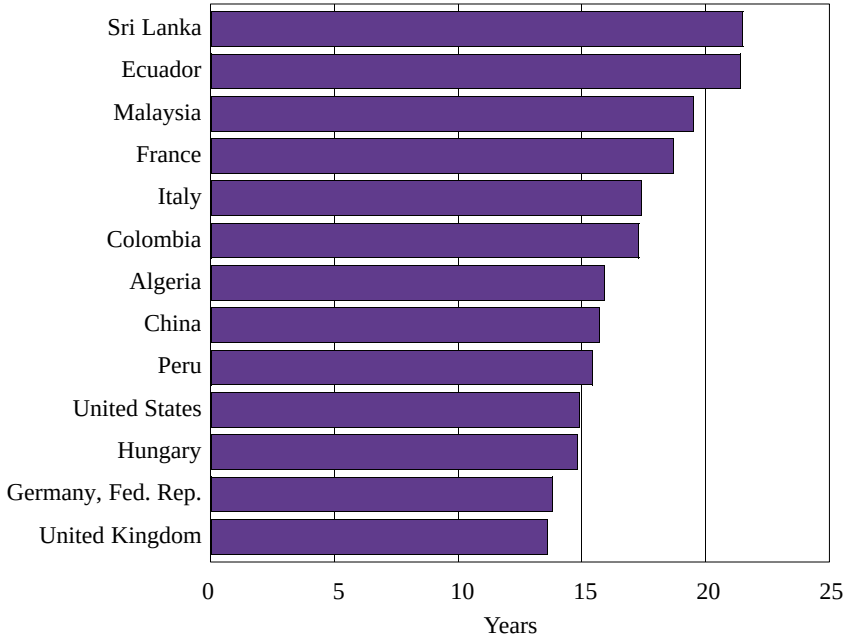


Source: OECD, 1994; and U.S. Bureau of the Census, International Programs Center, International Data Base

Longer retirements in some developing than developed countries

Data on actual retirement ages and changes thereof in developing countries generally are unavailable. However, the World Bank (1994) has published an interesting observation regarding the duration of retirement in developed versus developing countries. In part because of differences in standard retirement ages shown in figure 3.6, persons who reach the standard age of retirement in some developing countries can expect to live longer in retirement than retirees in developed countries. The difference in average length of retirement between male retirees in Sri Lanka and Ecuador on the one hand, and male retirees in Germany and the United Kingdom on the other, is on the order of 8 years. Of course, the proportion of the population eligible for formal retirement with pension benefits in Sri Lanka and Ecuador is much lower than in the European countries.

Figure 3.12
Expected Duration of Retirement for Men at Standard Retirement Age: 1980's



Note: Data refer to average male life expectancy at the standard retirement age for receipt of full public pension benefits.

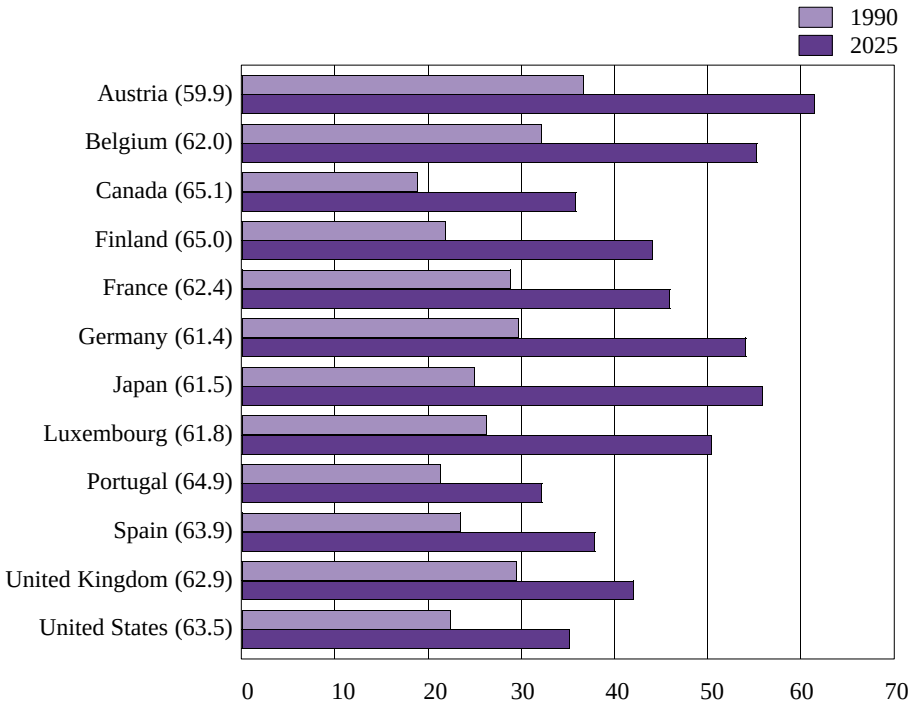
Source: World Bank, 1994

Demographic change alone may double the ratio of retirement-age population to working-age population

The potential effect of demographic change on future retired population/worker ratios, holding other factors constant, may be approximated in various ways. As noted in Chapter 1, the most commonly-used indicator is an elderly support ratio which contrasts one population segment (persons 65 and over) to another (persons aged 20 to 64). One variation on this theme, shown in figure 3.13 for 12 developed countries, allows for national differences in average retirement age. This example is based on average ages of retirement for employees in 1984 as reported by the OECD (1988b), weighted for gender differences in retirement age and labor force participation, and population age/sex structures for 1990 and 2025 as estimated and projected by the U.S. Bureau of the Census.

The ratio numerator comprises all persons at or over the average age of retirement in each country, and the denominator all persons between the age of 20 and the average retirement age. The dark bar for each country represents this ratio in 1990, and the lighter bar indicates the projected ratio for 2025 assuming that there is no change in the average age of retirement between 1990 and 2025. The ratio increases notably in all cases, and more than doubles in Finland and Japan.

Figure 3.13
Ratio of Retirement-Age to Working-Age Population: 1990 and 2025



Note: Ratios represent the number of persons at or above average retirement age per 100 persons between the ages of 20 and average retirement age in 1984. Each national average retirement age is shown in parentheses after the country name.

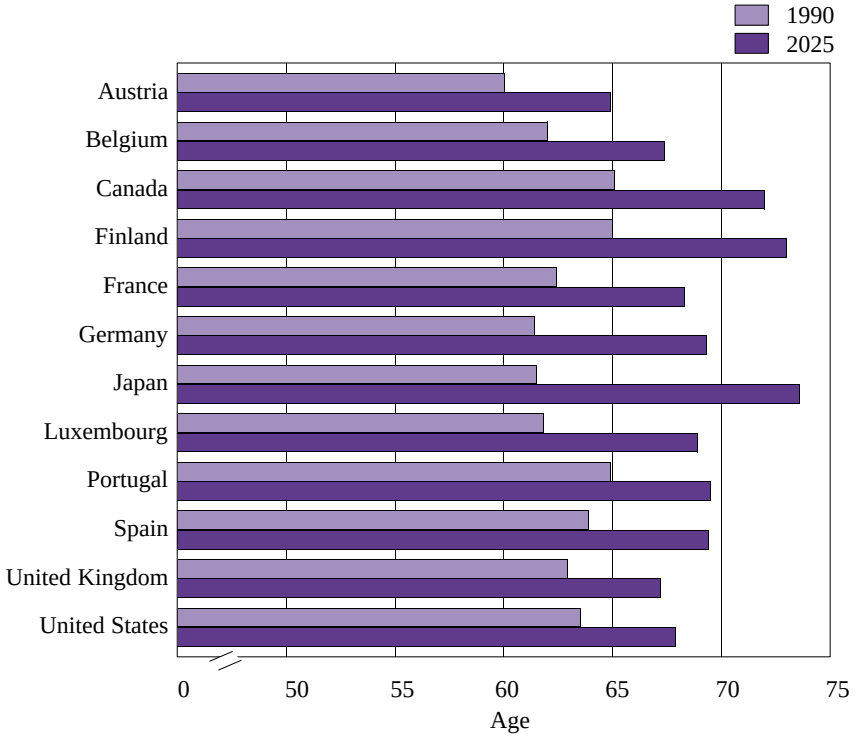
Source: OECD, 1988c; and U.S. Bureau of the Census, International Programs Center, International Data Base

Demography may alter standard retirement ages

Another way to consider the change suggested by figure 3.13 is to ask "How would average retirement ages have to change in the future in order to maintain the 1990 ratio of retirement-age population to working age-population?" Based on projected age/sex distributions for the year 2025, figure 3.14 indicates the level of retirement age in 2025 necessary to keep the same population ratio as calculated for 1990. The steepest change would be required in Japan, which reflects the especially-rapid aging of the Japanese population.

Retirement-age increases of the magnitude suggested by these data seem unlikely from a practical political point of view. Nevertheless, several nations—Australia, Japan, France, New Zealand, the United Kingdom, and the United States—have considered or implemented increases in standard retirement age as a response to changing demographic and fiscal realities (Moore, Tilson and Whitting, 1994). In the United States, for example, the Social Security system was revised in 1983 to establish higher normal retirement ages for persons born after 1937 (i.e., who reach age 65 after the year 2002). An individual's normal retirement age is linked to her/his year of birth; beginning in the year 2003, the "normal" retirement age of 65 will edge higher in small increments until reaching 67 in 2025 (Robertson, 1992). Germany's 1992 Pension Act also provides for a progressive increase in pensionable age beginning at the turn of the century.

Figure 3.14
Retirement Age in 2025 Needed to Maintain 1990 Retirement Ratio



Note: Based on actual average retirement age in 1984 and ratios in figure 3.13.

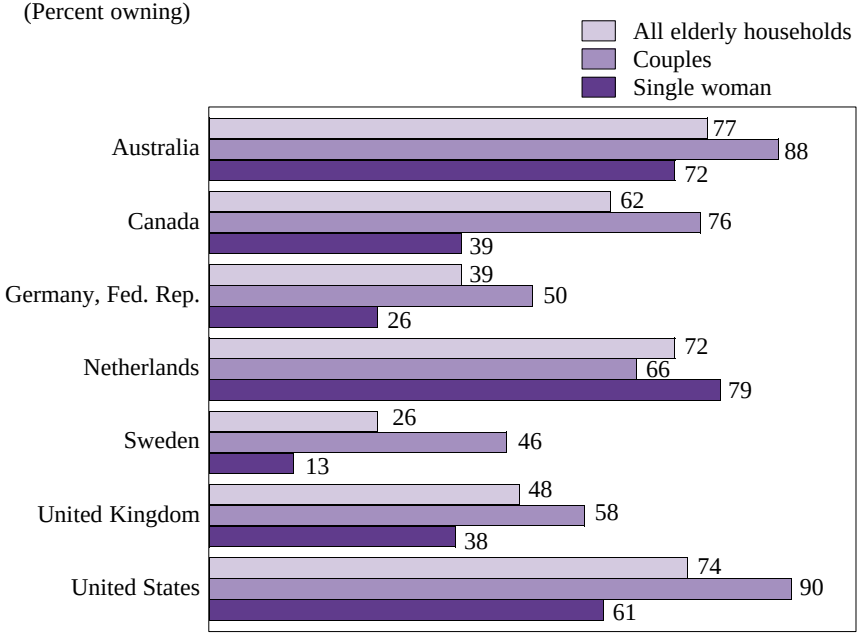
Source: OECD, 1988c; and U.S. Bureau of the Census, International Programs Center, International Data Base

Role of wealth in retirement decisions difficult to gauge

Wealth accumulated over a lifetime certainly has a bearing on retirement decisions, although the effects are difficult to quantify. Burkhauser and Quinn (1989; cited in Levine and Mitchell 1993) assert that, in the United States at least, post-World War II economic growth has allowed workers to earn more (in real terms) and accumulate more assets than their parents' cohorts, thereby permitting workers to reach retirement age with greater financial resources than in the past.

There are few international comparisons of wealth among older populations, due mainly to difficulties in collecting such data and to definitions that differ among countries. One aspect of wealth is home ownership. On the basis of comparable data for 7 nations from the Luxembourg Income Study, Quinn and Smeeding (1993) report a wide range of ownership rates for elderly households (defined as households in which the household head is aged 65 or over). Three-fourths or more of elderly households owned their dwelling in Australia and the United States, compared with only one-fourth in Sweden. The relatively low ownership rates in Sweden, West Germany and the United Kingdom likely are related to high rates of subsidy for rental housing for the elderly in general and for special housing for the frail elderly. As might be expected, elderly-couple households are much more likely to be owner-occupied than are households headed by a single elderly woman (except in the Netherlands).

Figure 3.15
Home Ownership for Elderly Households: Mid-1980's
(Percent owning)



Note: An elderly household is one in which the household head is aged 65 or above.

Source: Quinn and Smeeding, 1993

Public Pensions

Public pensions are the financial lifeline of the elderly in many societies. While some European public pension schemes date back to the end of the 19th century, current systems are the result of changes instituted largely after World War II. The most obvious and, to governments, most worrisome consequence of projected population aging will be an increase in budgetary outlays in the form of old age pension payments, especially in those countries in which public pensions are predominately financed on a pay-as-you-go basis. Increases in migration also are prompting governmental concern about the "exporting" of cash benefits to retirees in other countries (Bolderson and Gains, 1994).

Most pay-as-you-go systems in industrialized countries initially promised generous benefits. These pension programs, at their inception, were based on a small number of pensioners relative to a large number of contributors (workers). As systems matured, ratios of pensioners to contributors grew and in some countries became unsustainable, particularly during periods of economic stagnation. One result of such changes was the development of private pension systems to complement public pension systems (Fox, 1994); such complementary arrangements are discussed in Chapter 5. Other measures taken or considered have included increasing worker contribution rates, restructuring or reducing benefits, and raising the standard age of retirement (ISSA, 1993).

Public pension systems in the developing world generally cover a smaller proportion of the labor force than in industrialized societies. Even in economically vibrant societies such as Hong Kong and Thailand, there currently is no publicly-supported, comprehensive retirement pension scheme (Bartlett and Phillips, forthcoming; Domingo, 1995). Informal (usually family) systems provide the bulk of social support for older individuals in many countries, particularly in Africa and South Asia. As economies expand and nations urbanize, informal support systems such as extended family care and mutual aid societies have tended to weaken. A major challenge for governments in developing nations is to effect the expansion of formal-system coverage (especially in rural areas) while maintaining support for extant informal mechanisms.

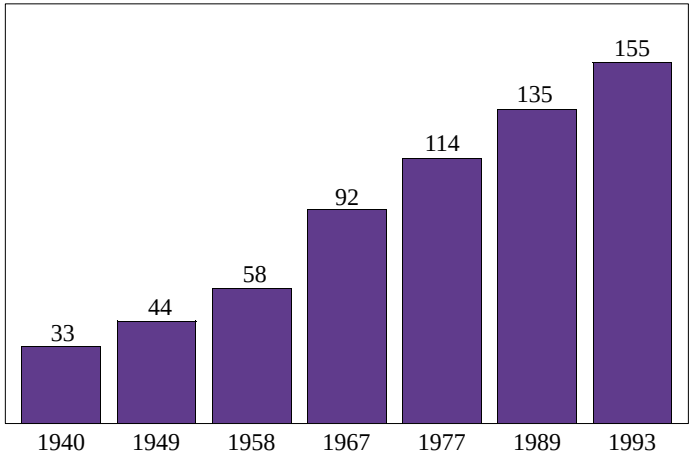
Chapter 4

The spread of public old-age security systems

Old-age pension schemes have become social institutions in many if not most countries throughout the world. The goal of most public old-age pension schemes is to provide all qualifying individuals with an income stream during their retirement years, income which is: 1) continuous; 2) adequate; 3) constant, in terms of purchasing power; and 4) capable of maintaining the socioeconomic position of the retired in relation to that of the active population (Nektarios, 1982).

Since the Second World War, public pension plans have played an increasingly important role in providing retirement income to older people in most societies. The major impetus for development of public pension systems, particularly in industrialized countries, was the inability of private intergenerational transfers to provide adequate retirement income for older citizens. The number of countries with an old age/disability/survivors program has increased from 33 in 1940 to 155 in 1993 (USSSA, 1994). The World Bank (1994) estimates that formal public programs provide coverage for approximately 30 percent of the world's older (aged 60 and over) population, with some 40 percent of the world's working-age population making contributions toward that support.

Figure 4.1
Number of Countries With Public Old-Age/ Disability/Survivors Program: 1940 to 1993



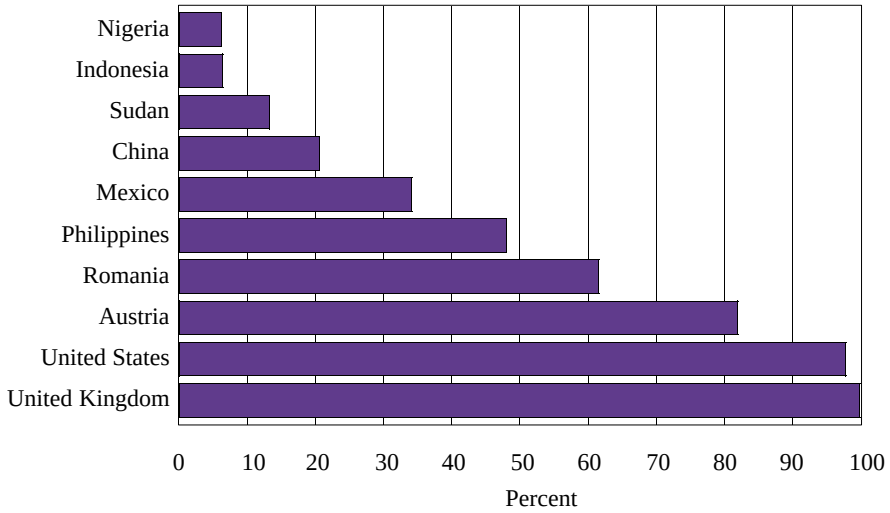
Source: USSSA, 1994

Labor force pension coverage varies from universal to nil

Mandatory old-age pension plans now cover more than 90 percent of the labor force in most developed countries. Governments are responsible for mandating, financing, managing and insuring public pensions. Public pension plans usually offer defined benefits which are not tied to individual contributions, but rather, are financed by payroll taxes. This arrangement is commonly referred to as a "pay-as-you-go" system insofar as current revenues (taxes on working adults) are used to finance the pension payments of persons who are retired from the labor force (Mortensen, 1992).

In developing countries, public pension systems typically cover a much smaller fraction of workers than in industrialized nations. In many cases, coverage is restricted to certain categories of workers such as civil servants, military personnel, and employees in the formal economic sector. Rural, predominantly agricultural workers have little or no pension coverage in much of the developing world.

Figure 4.2
Percent of Labor Force Covered by Public Old-Age Pension Program: 1991



Source: ILO, 1994

Pension financing has evolved in myriad ways

The structure of public pension financing has taken many forms throughout the industrialized world, often as the result of policy choices made after World War II. Countries use different means to achieve national pension objectives, with resulting differences in the mix between public and private (occupational) provision, in the roles of various tiers of pension coverage (basic protection, supplementary benefits, etc.), in institutional/administrative arrangements, and in sources of pension funding (ILO, 1989).

Most European countries finance their social insurance schemes primarily through employer and employee contributions. The latter tend to be proportionally greater in Western than in Northern and Southern Europe. Prior to their recent move toward market economies, many Central and Eastern European countries relied heavily on state funding of pensions from general revenues, although employers made major contributions in Hungary and especially Romania.

Figure 4.3
Public Pension System Funding in Europe, by Source: 1983

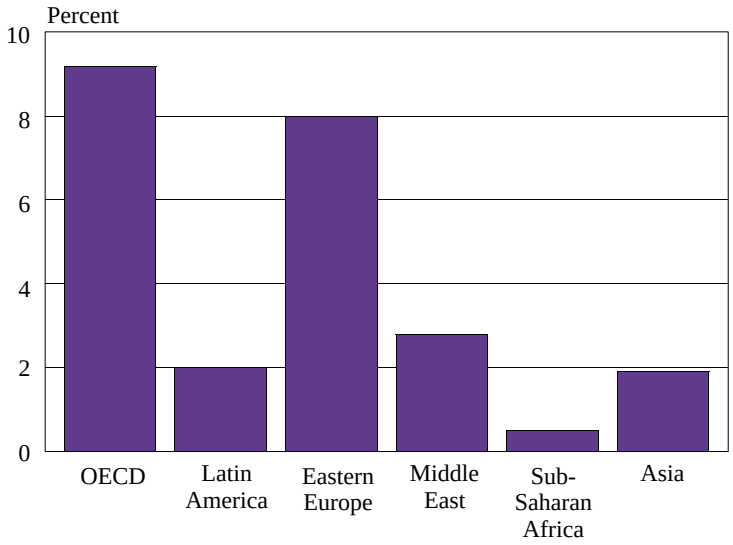
Source: ILO, 1989

Public pensions absorb nearly one-tenth of gross domestic product in developed countries

The cost of public pensions is greatest among industrial nations, most of which have pay-as-you-go systems. Pension expenditure has, on average, come to exceed 9 percent of gross domestic product (GDP) in OECD nations, and represented 8 percent of GDP in Eastern Europe around 1990. Since 1960, one-quarter of the increase in total public expenditure in OECD countries has been growth in pension expenditure. On average, the growth of pension expenditure has been twice as fast as that of GDP.

Expenditure levels usually are much lower in developing countries, where relatively younger populations and smaller pension programs do not yet place large demands on GDP. This generalization masks great diversity, however. In numerous developing countries, public social security systems are endangered because of low payroll-tax collection rates as well as high income-replacement rates that may exceed 100 percent of income at retirement (Goodman and Ferrara, 1988). Endemic economic problems throughout much of Latin America in the 1970's and 1980's resulted in large pension deficits in some countries. Hence, many Latin nations have revamped or are restructuring their pension programs (see page 74). China saw its pension-expenditure share of GDP nearly double from 1.4 percent to 2.7 percent during the period 1978-88. Faced with a rapidly aging population, reform and expansion of pension programs has become an urgently discussed issue in the world's most populous nation.

Figure 4.4
Public Pension Expenditure as a Percent of GDP: Circa 1990



Note: Unweighted averages of national data in each region.

Source: World Bank, 1994

Rising share of GDP devoted to pensions in developed countries

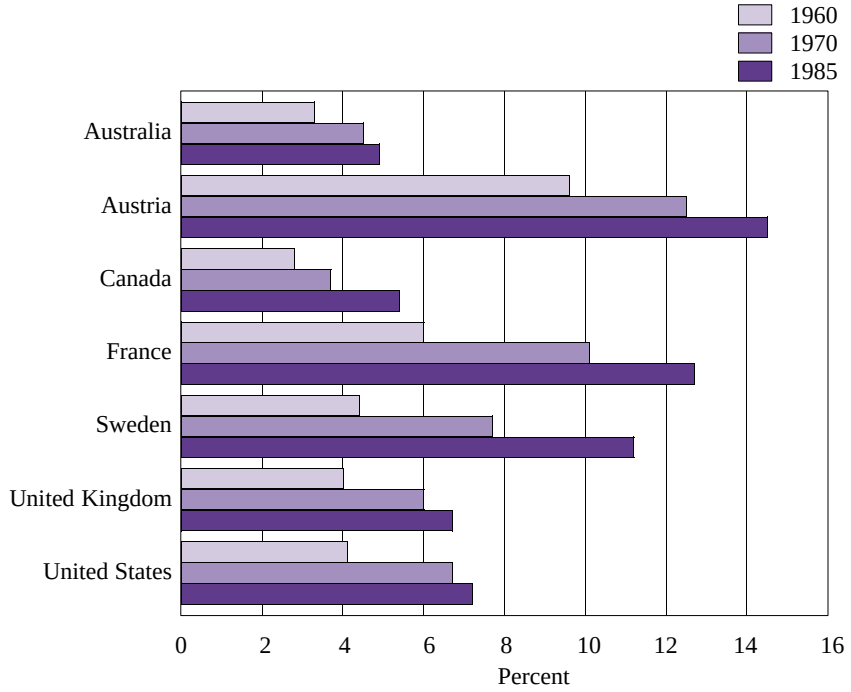
The proportion of gross domestic product spent on public pensions increased in virtually all developed countries during the period 1960-1985. An unweighted average of data for 21 OECD countries showed that public pension expenditures accounted for 8.9 percent of GDP in 1985, compared with 4.3 percent in 1960 (OECD, 1988c). Public pension expenditure has become the largest single item in the public budget in most industrialized countries (ILO, 1995).

Rising pension outlays are a result of 4 major trends in most countries:

- population aging and an increasing number of long-lived pension recipients;
- coverage of population groups once excluded from schemes (such as women and the self-employed);
- legislated increases in the real level of payments per beneficiary; and
- the proliferation of early retirement schemes

During the mid-1970's, several developed countries began to encounter problems with their pension programs as a result of these trends. The financing of pay-as-you-go systems is closely tied to the growth of workers' earnings and general economic growth. During periods of economic downturn, governments may experience balance-sheet problems as a result of lowered revenues and increased public pension liabilities. Resultant deficits have, in the past, been reduced only by increasing the rates of worker contributions and taxes (OECD, 1988b).

Figure 4.5
Public Pension Expenditure as a Percent of GDP: 1960 to 1985



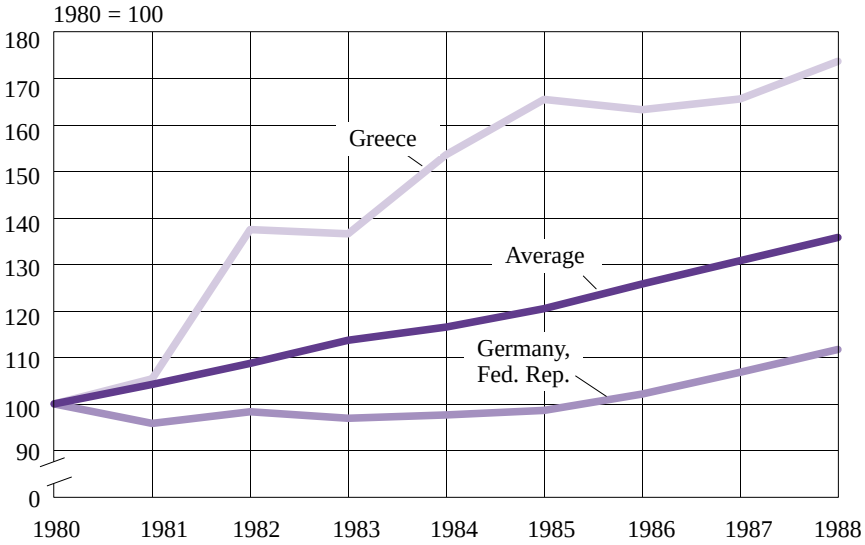
Source: OECD, 1988c

European old-age benefit expenditures jumped more than one-third in the 1980's

Countries of Europe and North America have been models of public pension systems for decades. Over time, there is upward pressure on a national level of pension payment because the average recipient at any given moment has a longer history of contributing to the system. In other words, more recipients qualify more completely for full benefits. This "maturing" of pension schemes tends to exacerbate the trend in rising pension outlays.

A study of 12 European Union nations in the 1980's (Eurostat, 1992) confirmed the longer-term OECD finding (figure 4.5) that old-age benefit expenditure has increased faster than GDP. Aggregate European Union old-age benefit expenditures (at constant 1985 prices) increased 35 percent during the period 1980-88. The greatest increase was seen in Greece while the lowest was recorded in the former Federal Republic of Germany.

Figure 4.6
Trend in Old-Age Benefit Expenditures in the European Union: 1980 to 1988



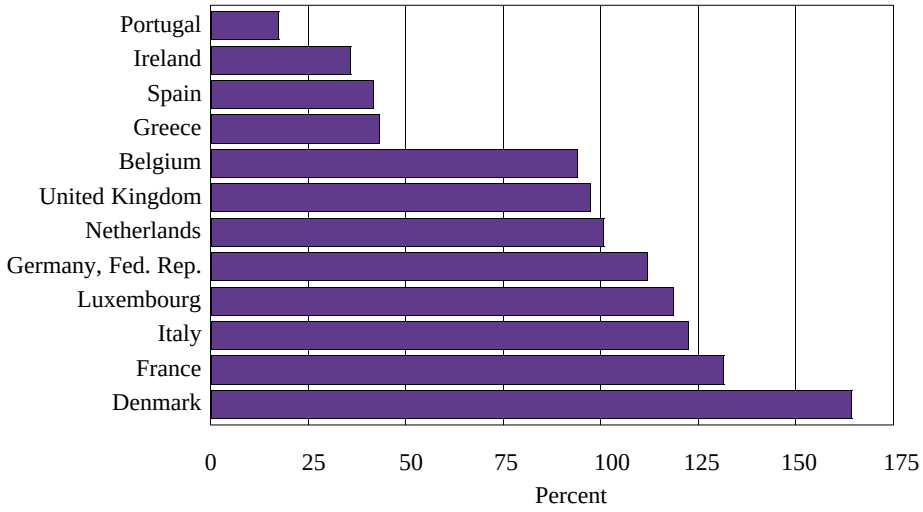
Note: Refers to basic social security plus supplementary compulsory schemes. Based on 1985 prices.

Source: Eurostat, 1992

Per capita old-age benefits relatively high in Denmark

Countries in the European Community spent an average of ECU 1,073 (approximately $US 1,270) per person in the total population on old-age benefits (cash and in kind) in 1988. By multiplying GDP per head by the percentage of GDP spent on old-age social protection, the Statistical Office of the European Union (Eurostat, 1992) has compared each of its 12 member nations to the average. In general, countries with the highest GDP per capita also spend the greatest share of GDP on social protection.

Figure 4.7
National Per Capita Old-Age Benefit Expenditure as a Percent of the European Union Average: 1988



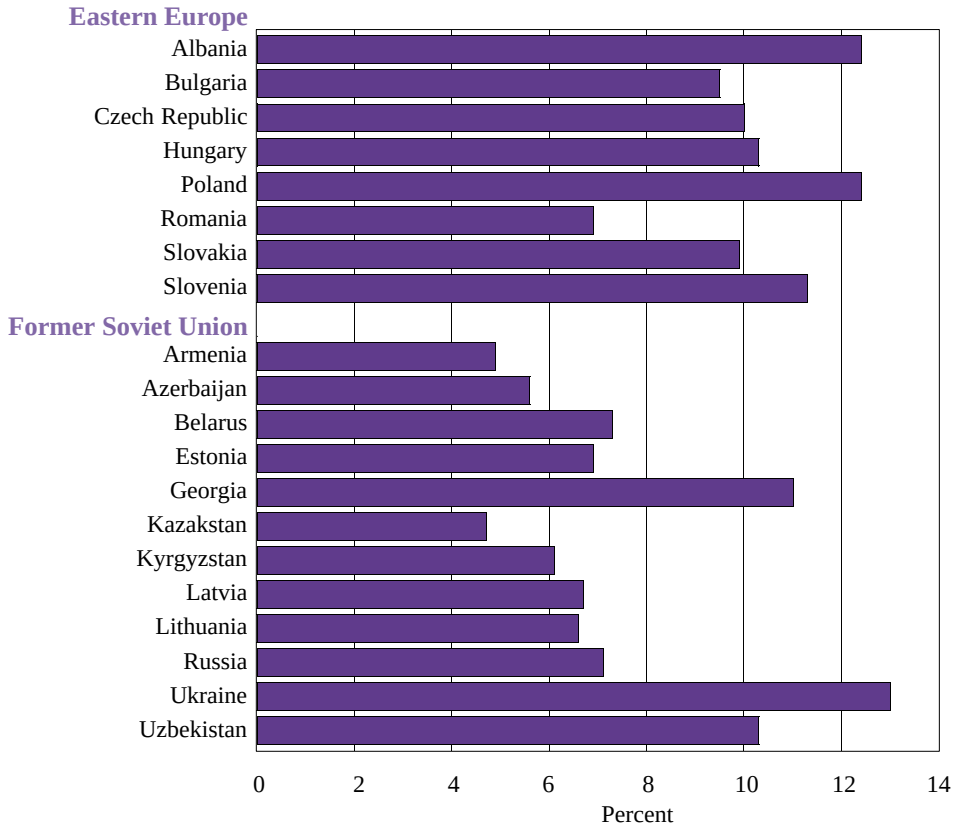
Source: Eurostat, 1992

Steep payroll taxes needed to meet pension obligations in Eastern Europe

As countries of Eastern Europe and the former Soviet Union make the transition from socialist to capitalist economies, economic support of retirees has emerged as a major financial burden. Countries of this region have aging populations; they contain 8 percent of the world's total population but 12 percent of the world's elderly (65 and over) population. To provide the benefits for the elderly set by prior regimes, governments have imposed payroll taxes ranging from 35 to 50 percent (Fox, 1994). This onerous level prompts many workers and employers toward tax evasion and/or the underground economy.

Even though the gross domestic product of many Eastern European nations was falling in the late 1980's and early 1990's, the share of government spending on the elderly was increasing (World Bank, 1994). Pension outlays constitute the largest single expenditure in many Eastern European government budgets, accounting for 10 to 13 percent of GDP in many nations as of the early 1990's. Among the factors contributing to high pension expenditure are relatively high statutory replacement rates—on average, about 80 percent of wages—and early retirement ages—around 57 for men and 53 for women.

Figure 4.8
Public Pension Expenditure as a Percent of GDP in Eastern Europe and the Former Soviet Union: Circa 1990

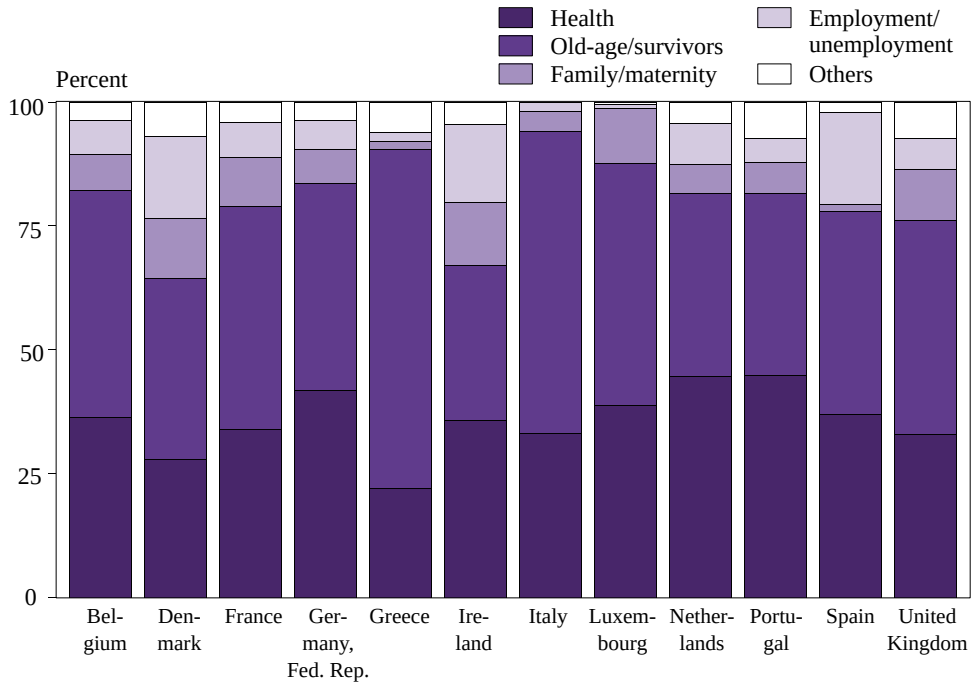


Source: World Bank, 1994

Pension outlays often the main component of social security expenditure

Another gauge of pension expenditure is its relation to total social benefit expenditure. Comparable data for 12 European countries indicate that this proportion ranges from just under one-third in Ireland to more than 60 percent in Greece and Italy. For most countries, these figures understate the actual pension share insofar as pensions for invalidity, disability, and occupational accidents/diseases are included in the "health" component of figure 4.9.

Figure 4.9
Social Protection Benefit Distribution in Nations of the European Union: 1991



Source: Eurostat, 1994

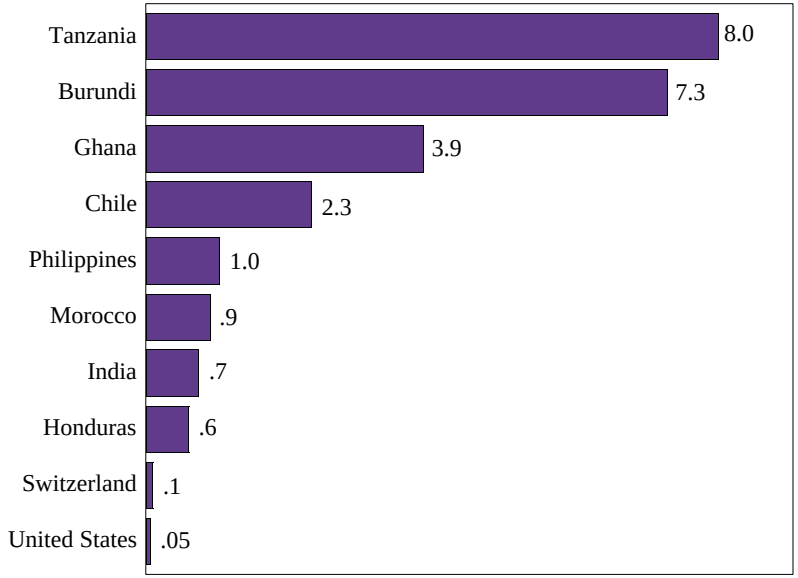
Developing countries often face high administrative costs

The costs of administering a public pension scheme are an important factor in the scheme's overall efficacy. Administrative costs as a percent of total old-age benefits are high in many developing countries (e.g., 10-15 percent in Brazil and Turkey) relative to the developed world. In most OECD countries, administrative costs as a percent of old-age benefits are less than 2 percent. Since the early 1970's, the cost/benefit ratio has been declining in most developed countries (Estrin, 1988), as a result of:

- government austerity programs that helped contain administrative costs;
- increases in total benefit expenditures, reflecting not only the maturation and/or expansion of programs but also the impact of inflation; and
- greater use of computers for the processing of benefits, with corresponding gains in efficiency.

The World Bank (1994) has compiled information on administrative costs per participant in publicly managed pension plans as a percent of per capita income. The data demonstrate that these costs are much higher in lower-income countries, illustrating the importance of educated labor, communications infrastructure, and other advanced technological input to the pension production function.

Figure 4.10
Administrative Costs of Public Pension Schemes: Circa 1990
(Costs per participant as percent of national per capita income)

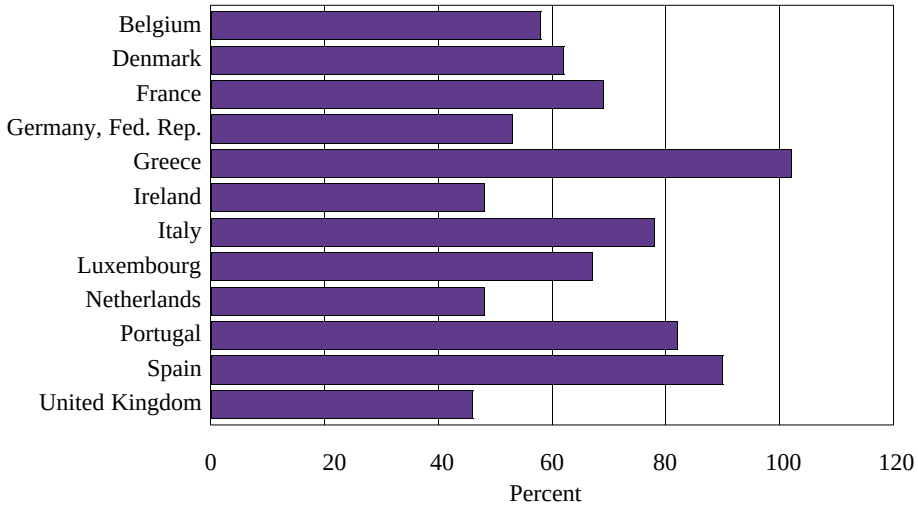


Source: World Bank, 1994

Income replacement rates in developed countries range from 46 to 102 percent

The income replacement rate in old age generally refers to the amount of a retirement pension as a percent of a retiree's last earned income. Income replacement rates vary widely among countries, and may differ within countries according to gender, marital status, length of workforce service, and unemployment experience. A Eurostat comparison of gross income replacement of social security and other compulsory retirement pension programs in 12 European nations (IBIS, 1993) revealed that replacement rates range from 46 percent to 102 percent, based on average annual pay for a manufacturing worker with dependent spouse. In countries with relatively high income replacement ratios (except Italy), pension payments are based on absolute earning levels; most countries with lower replacement levels (e.g., Ireland, the Netherlands and the United Kingdom) have statutory flat-rate amounts that are not tied to the level of earnings on which contributions are paid.

Figure 4.11
Gross Income Replacement Rates of Full Public Pensions: 1990



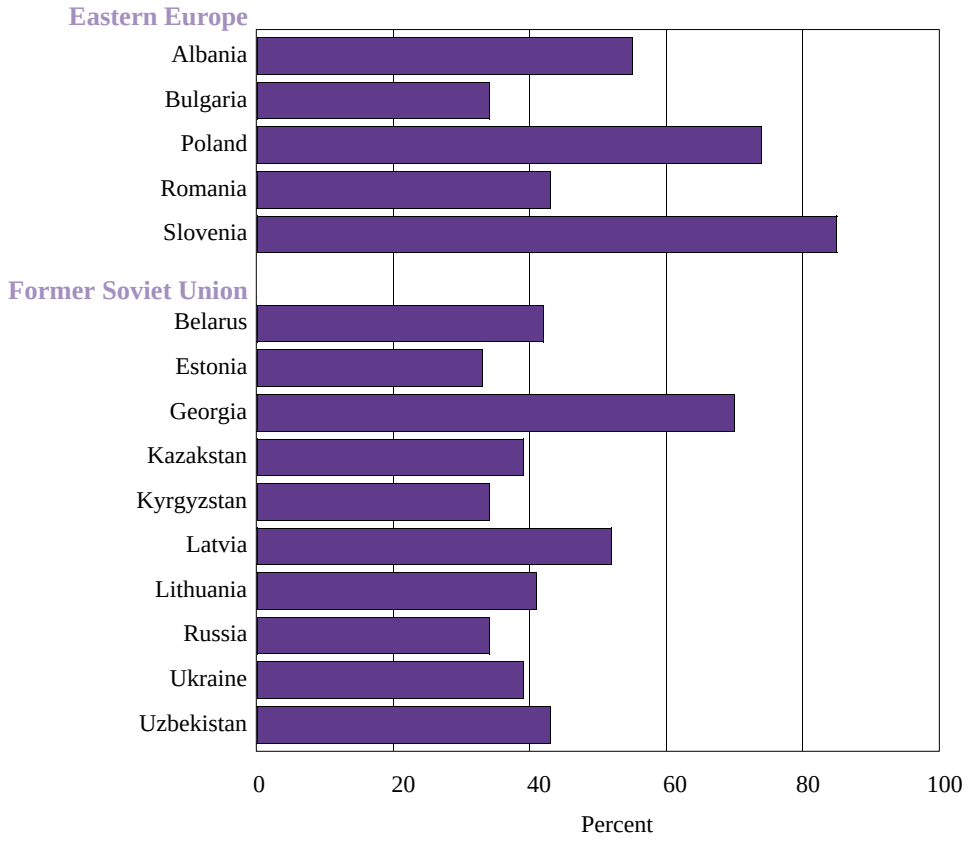
Note: Percent of average gross annual pay for manufacturing worker with dependent spouse.

Source: Eurostat, 1993a; IBIS, 1993

Real replacement rates have declined in Eastern Europe

Pension systems in Central and Eastern Europe face special challenges as countries move away from command economies (Liu, 1993). Prior to economic reforms, open inflation was minimal and pension payments typically were close to the statutory replacement rates which were as high as 80 percent in many nations. More recently, however, inflation has severely eroded pension amounts, and many pensions have declined to the minimum level. In Russia, half of all pensioners receive the minimum amount, while in Romania, average pensions fell from about 65 percent of wages in the 1980's to 40 percent in the early 1990's. Poland and Slovenia have been notably successful in maintaining or raising the pension/wage ratio since 1989 (Fox, 1994).

Figure 4.12
Average Pension as a Percent of Average Wage in Eastern Europe and the Former Soviet Union: 1992



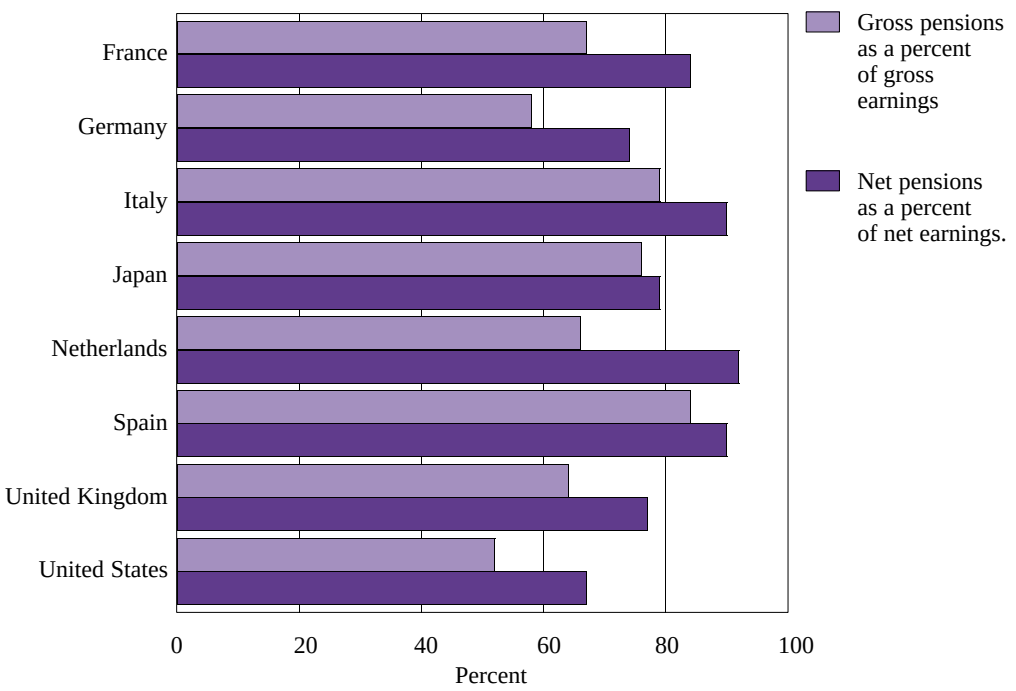
Source: Fox, 1994

Net income replacement higher than gross income replacement

Comparisons among national replacement rates usually are made in terms of gross retirement income and gross earned income. When data are available, a more useful comparison considers net income replacement, that is, income replacement after taxes. Net income replacement usually will be higher than gross income replacement because taxes on retirement income often are proportionally lower than on earned income, and because pensioners in some countries are given other preferential tax treatment (Eurostat, 1991).

An eight-country study (Noble Lowndes & Partners Limited, 1992) compared retirees receiving one and one-half times the national average of pension earnings (public and private combined). In each country, the retirees' situation looked better when net income was considered. In Italy, the Netherlands and Spain, the net replacement level was 90 percent or more of pre-retirement net earnings. The net rate in the United States, 67 percent, was the lowest of the eight nations.

Figure 4.13
Gross Versus Net Income Replacement Rates: 1992
(Total pension income)



Note: Data are for retirees who receive 1.5 times the national average of pension income from all sources (public and private).

Source: Noble Lowndes & Partners, Ltd., 1992

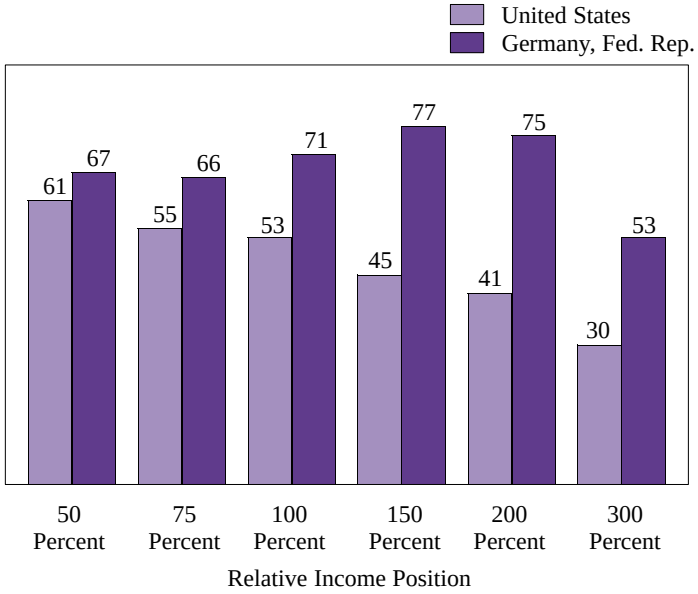
Income replacement levels may have a philosophical basis

Crossnational differences in income replacement rates arise in part from differences in philosophy regarding the aim of social security. Both Germany and the United States have pay-as-you-go public pension systems that provide coverage for a broad segment of the labor force. In the United States, the primary goal of the Social Security system is to prevent poverty among the elderly by providing a minimum standard of living. In Germany, public pensions are designed to provide a greater correlation between lifetime earnings and retirement income. As a result, German public pensions provide for higher net replacement (about one-third higher on average) than do U.S. pensions, especially for persons with higher income levels (Borsch-Supan, 1994).

Other important crossnational differences in retirement are exemplified in a Germany-U.S. comparison. Roughly one-fourth of German workers are subject to mandatory retirement, usually at age 65; in the United States mandatory retirement is considered to be "age discrimination" and is illegal. The incentive to retire early is more powerful in Germany than in the United States, not only because of more attractive income replacement rates but because of lower benefit reductions for early exit. And, occupational (private) pension plans are much more prevalent in the United States, where about half of Americans aged 60 and over receive occupational-plan benefits, sometimes in addition to public benefits. The corresponding figure for West Germany in the late 1980's was 16 percent, and private pension income typically is in the form of life insurance annuities.

Figure 4.14

Net Income Replacement Ratios of Public Pensions in the United States and the Federal Republic of Germany, by Income Level: Late 1980's



Note: Relative income position refers to percentage of an average manufacturing worker's wages. Data in figure 4.14 refer to the percent of wages replaced by public pensions, based on after-tax incomes of workers with 40 years of service.

Source: Borsch-Supan, 1994

Private and Other Pensions

In most if not all countries with public old-age security systems, additional old-age security schemes have been developed to complement (and in some cases replace) those in the public sphere. Complementary systems typically are related to specific industrial sectors and/or private companies, and are referred to as "occupational pensions," "supplementary pensions," or "private pensions." While these terms are sometimes used interchangeably, they have different meanings and definitions in different cultures (see apRoberts, 1993, for a discussion of terminology regarding complementary retirement pensions).

Occupational pension plans existed prior to public social security in most industrialized nations, but covered only a small fraction of the labor force. Over time, the importance of occupational pensions has increased: employers have used such plans as incentives to attract and retain employees, while workers have sought an enhancement of old-age security beyond that promised by public support mechanisms. Occupational pension schemes are sponsored by employers, usually voluntarily or through collective bargaining. Unlike public pay-as-you-go plans, employer-sponsored plans generally are or strive to be "fully funded," meaning that a plan is designed to accumulate enough assets to cover the present value of future liabilities owed to plan members.

There are many types and variants of private pension plans; one estimate for the United Kingdom suggests the existence of 128,000 different private-sector schemes in 1991 (Daykin, 1994). Plans may be managed by special public bodies or, more commonly, by private firms and insurance companies. A wide variety of funding arrangements exists, as does the extent to which governments regulate and tax private plans. Given the structural variety of occupational pension plans, it is not surprising that benefits also differ greatly from one employer to the next, and that plans are nontransferable from one employment to another (World Bank, 1994).

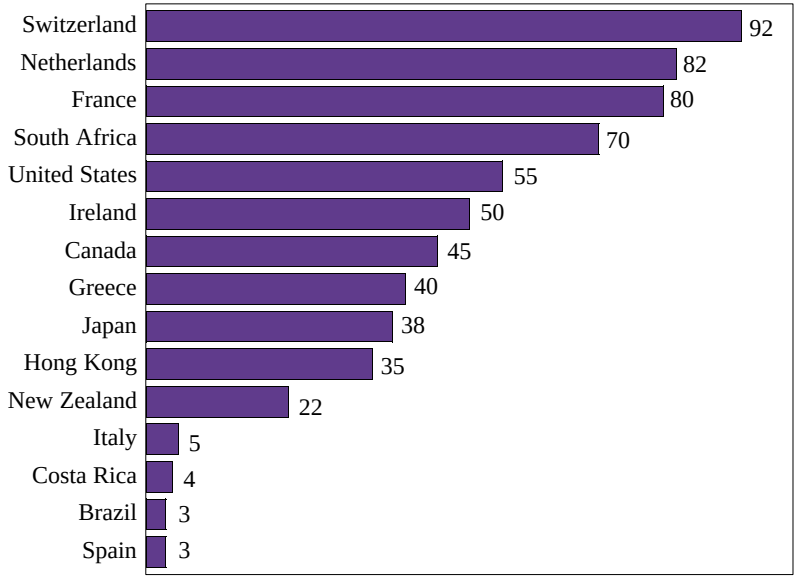
Because government involvement in occupational pension schemes differs greatly across countries, the distinction between public versus private regimes often becomes blurred. Further, the complexity of occupational pensions precludes a precise comparison among countries. Even within a country, it is virtually impossible to calculate a single replacement rate for occupational pensions when in fact the level varies from one sector to another, from one income category to another, and also according to personal characteristics of retirees. International organizations do not regularly collect statistics on complementary pensions, due in large part to such international differences. Because of the difficulty in obtaining crossnational statistics on private and other pensions, this section focuses primarily on a small set of industrialized nations for which reasonably comparative data have been compiled. Given the preceding caveats, the reader is advised that strict comparisons among national statistics may be unwarranted.

Occupational pensions cover roughly one-third of workers in developed countries

Occupational pension plans cover about one-third of the labor force in OECD countries but far less in most developing countries and transitional economies, where employer-sponsored schemes tend to cover only public-sector workers. Most occupational plans are employer-specific, but in some nations (e.g., Denmark, the Netherlands) plans are organized on an industry-wide basis, with compulsory participation a result of collective bargaining. Switzerland requires all employers to provide pension benefits for employees.

Company-based pension programs in the developing world are found most frequently in former British colonies and in countries with large multinational subsidiaries. Most such programs are subject to less regulation and lower funding requirements than their counterparts in industrialized countries, although both Indonesia and South Africa have developed comprehensive and well-regulated private pension systems. Coverage of private sector workers is increasing in a number of other large developing nations such as Brazil, India, and Mexico (World Bank, 1994).

Figure 5.1
Percent of Labor Force Covered by Occupational Pension: Circa Late 1980's



Note: Coverage in Switzerland, the Netherlands and France is compulsory for many workers; coverage in other nations shown is voluntary.

Source: World Bank, 1994

Occupational pension coverage related to national social security policy

Chapter 4 mentioned ways in which public retirement scheme features may vary according to national income security goals. The prevalence and regulation of private retirement schemes also is related to national policy, because private benefits often complement public benefits. In nations where public pensions are directly linked to lifetime earnings (e.g., in Belgium, Canada, Germany, and the United States), occupational pension schemes are voluntary. In countries where public retirement benefits are mainly in the form of lump-sum payments (e.g., in Denmark, France and Switzerland), governments tend to make occupational pensions mandatory and to link benefits to employees' earnings (OECD, 1988c). Private benefits usually represent a smaller portion of the total compensation mix in countries that provide relatively generous state benefits (Knight, 1992).

Private pension plans in most countries are largely or fully funded, with employer and employee contributions set aside. Some nations use a combination of funded and pay-as-you-go features, depending on the occupations involved. Private pension distributions are subject to income tax in all developed countries except New Zealand, although effective tax rates are usually low relative to those of workers.

Table 5.1
Occupational Pension Scheme Features in 19 Developed Countries: Early 1990's

Country	Nature	Normal Benefit Type	Primary Financing Type
Belgium	Voluntary	Linked to salary	Funded
Canada	Voluntary	Mixed[1]	Funded
Denmark	Compulsory	Lump sum	Funded
Finland	Compulsory	Linked to salary	Mixed[2]
France	Compulsory	Linked to salary	Mixed[2]
Germany	Voluntary	Mixed[1]	Book reserve
Greece	Voluntary	Linked to salary	P-A-Y-G
Ireland	Voluntary	Linked to salary	Mixed[2]
Italy	Voluntary	Linked to salary	Mixed[2]
Luxembourg	Voluntary	Linked to salary	Book reserve
Netherlands	Voluntary	Linked to salary	Funded
New Zealand	Voluntary	Mixed[1]	Funded
Norway	Voluntary	Linked to salary	Funded
Portugal	Voluntary	Linked to salary	Funded
Spain	Voluntary	Mixed[1]	Funded
Sweden	Voluntary	Linked to salary	Funded
Switzerland	Compulsory	Linked to salary	Funded
United Kingdom	Voluntary	Linked to salary	Funded
United States	Voluntary	Linked to salary	Funded

Note:
[1]Mixture of lump-sum and salary-linked provisions.
[2]Mixture of fully-funded and pay-as-you-go features.

Source: Aarts, Burkhauser and de Jong, 1992, cited in Quinn and Burkhauser, 1994

Number of contributors to private pension plans generally on the rise

Table 5.2 shows the increase in private pension plan contributors (active participants) that has occurred in most developed countries. More than 42 million workers in the United States alone were involved in some form of private pension plan in 1988. While the number of active private plan participants in the U.S. is much higher than in other countries, coverage relative to its private-sector workforce is lower than in Switzerland and France, which have mandatory plans for some industries. The U.S. private pension system is acknowledged to be the most regulated voluntary system in the world. Despite efforts to strengthen and expand its coverage, the share of participating private-sector workers rose only modestly between 1970 and 1988 (Dailey and Turner, 1992). The percentage of full-time private workers in U.S. company pension plans reached a high of 50 percent in 1979, and then fluctuated between 46 percent and 50 percent during the period 1980 to 1993 (U.S. National Research Council, 1995).

Table 5.2

Active Participants in Private Pension Plans and as a Percentage of Private-Sector Labor Force: 1970-89

Numbers of participants in thousands

Year	Australia	Canada	France	Japan	Nether-lands	Swit-zerland	United Kingdom	United States
1970	-	1,552	10,583	5,905	1,592	1,102	7,125	26,100
1975	-	2,046	15,183	9,424	1,729	1,207	6,000	30,738
1980	-	2,505	16,502	11,200	2,109	1,311	6,025	35,939
1981	-	-	16,494	11,810	2,106	1,365	-	36,912
1982	-	2,682	16,414	12,440	2,063	1,434	-	37,481
1983	-	-	16,407	12,830	2,059	1,518	5,800	38,971
1984	-	2,536	15,823	13,430	2,083	1,543	-	39,713
1985	1,014	-	15,509	14,030	2,137	-	-	40,444
1986	1,160	2,582	15,324	14,620	2,205	-	-	41,209
1987	1,261	-	15,429	15,150	2,232	2,331	5,800	41,784
1988	1,572	2,673	15,730	15,850	2,292	-	-	42,300
1989	1,742	2,754	16,000	16,720	2,423	-	-	-

Participants as a percentage of private-sector labor force

Year	Australia	Canada	France	Japan	Nether-lands	Swit-zerland	United Kingdom	United States
1970	-	26	80	20	50	46	38	42
1975	-	28	100	29	49	51	32	44
1980	-	29	100	31	59	56	31	45
1981	-	-	100	32	58	57	-	45
1982	-	30	100	33	56	61	-	45
1983	-	-	100	33	56	65	30	45
1984	-	28	100	34	57	66	-	46
1985	20	-	100	35	59	-	-	46
1986	22	27	100	36	59	-	-	46
1987	23	-	100	37	61	92	29	46
1988	28	28	100	38	62	-	-	46
1989	30	29	100	39	66	-	-	-

Notes: "–" Data not available

Some figures are as interpolated in the source.

Private-sector labor force includes wage-earners and salaried employees plus the unemployed. Part-time employees are included to the extent they appear in national labor force statistics. Self-employed persons, unpaid workers, and all government (and related agency) workers are excluded.

Information for Japan is for funded pension plans only. See source for additional country-specific details.

Source: Dailey and Turner, 1992

Number of beneficiaries growing faster than contributors

Although numbers of private pension beneficiaries are much smaller than corresponding numbers of contributors, the former have been growing at a faster rate since 1970 in many developed countries. The ratio of private pension beneficiaries to all persons aged 65 and over is roughly 1 to 3 in most countries in table 5.3, with a notably high level in France and a relatively low level in Japan. Australia's level is especially low given that its private system is a recent creation with as yet few beneficiaries.

Table 5.3

Persons Receiving a Retirement Pension From a Private Plan and as a Percentage of All Persons Aged 65 and Over: 1970-89

Persons receiving a private pension, in thousands

Year	Australia	Canada	France	Japan	Nether-lands	Swit-zerland	United Kingdom	United States
1970	-	-	-	-	292	127	1,025	3,230
1975	-	-	2,324	-	364	167	1,100	4,600
1980	-	-	3,455	551	449	208	1,350	6,030
1981	-	610	3,569	616	467	218	-	6,370
1982	-	640	3,660	687	483	225	-	6,750
1983	-	671	3,741	766	497	237	1,800	7,160
1984	-	700	3,932	850	515	244	-	7,600
1985	25	752	4,242	943	535	-	-	8,000
1986	22	828	4,575	1,031	559	-	-	8,500
1987	-	904	4,764	1,142	581	274	-	-
1988	-	981	4,953	1,239	578	-	-	-
1989	-	-	5,047	1,342	590	-	-	9,000

Private pension recipients as a percent of all persons aged 65+

Year	Australia	Canada	France	Japan	Nether-lands	Swit-zerland	United Kingdom	United States
1970	-	-	-	-	22	18	14	16
1975	-	-	33	-	25	21	14	20
1980	-	-	46	5	28	24	16	23
1981	-	26	49	6	28	25	-	24
1982	-	26	51	6	29	25	-	25
1983	-	27	53	7	30	27	21	27
1984	-	27	57	7	30	27	-	27
1985	2	28	63	8	31	-	-	28
1986	1	30	67	8	32	-	-	29
1987	-	32	69	9	32	30	27	-
1988	-	33	70	9	31	-	-	-
1989	-	-	71	9	32	-	-	29

Notes: "–" Data not available

Data for Canada include government-worker retirees.

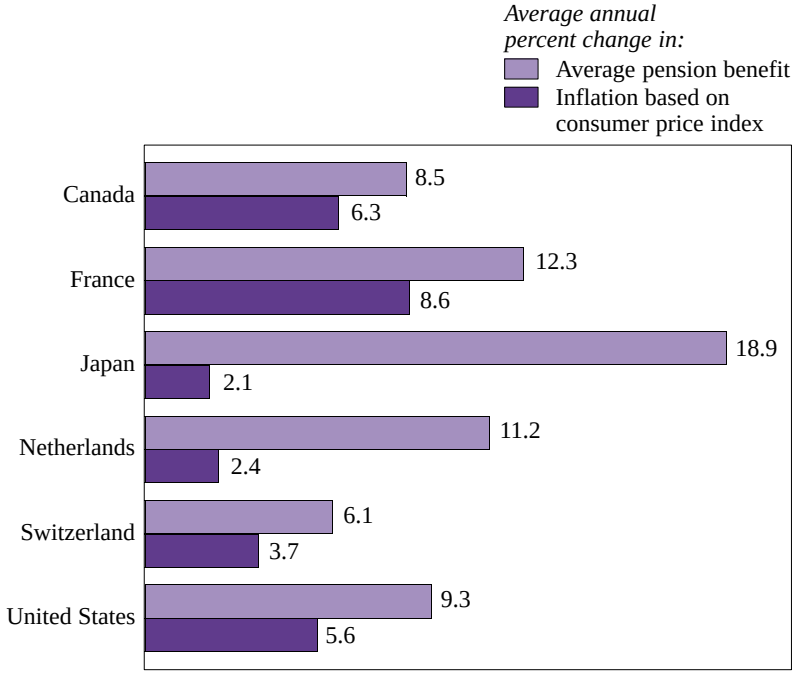
Source: Dailey and Turner, 1992

Growth of private pension benefits outpaced inflation in the 1980's

Accurate estimates of average annual private pension benefits are difficult to obtain. The data in figure 5.2, compiled by Dailey and Turner (1992), are based for the most part on national statistics on total benefit amounts paid to all retirees divided by the total number of retired beneficiaries, excluding survivors and disability pensioners. For each of the six countries, the increase in average pension benefits was significantly greater than the change in the national consumer price index during the 1980's.

Figure 5.2

Change in Private Pension Benefits vs. Inflation: 1980 to 1989



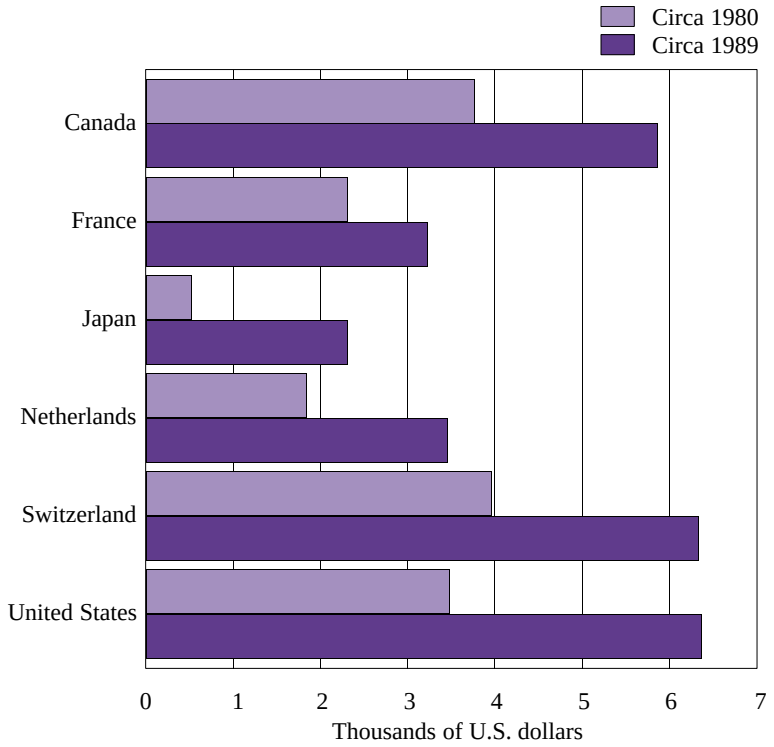
Note: Change in pension benefits based on national currency per year. Time period for Canada covers 1981-88; for Switzerland 1980-87.

Source: Dailey and Turner, 1992; World Bank, 1992

U.S. and Swiss private pension benefits comparatively high

The U.S. Department of Labor has developed time series of average annual retirement pension payments in several developed countries (Dailey and Turner, 1992). The most recent comparative data show average private pension retirement benefits in the United States to be about US$ 6,400 in 1989, and in Switzerland about US$ 6,300 in 1987. Canadian data shown here include former government employees, and thus are somewhat overstated relative to other national figures. The Japanese data, on the other hand, are understated because they exclude lump-sum retirement benefits.

Figure 5.3
Average Annual Private Retirement Pension: Circa 1980 and 1989



Note: Data for Canada include pension plans for government employees.

Amounts are based on national currencies converted to U.S. dollars using average exchange rates for the earlier and later years. Change during the period will, in part, reflect change in exchange rates.

Source: Dailey and Turner, 1992

Employers make majority of private pension fund contributions

Annual contributions to private pension plans may fluctuate from year to year, but the overall trend during the 1980's was one of steady increase. Employees make less than half of all contributions to private pension plans in the 9 countries in figure 5.4. Employer contribution shares range from 58 percent in Switzerland to virtually 100 percent in Japan. However, in the 4 countries for which there are time series data (Canada, the Netherlands, Switzerland, and the United Kingdom), the employee's share of total contributions rose gradually during the 1980's. A similar trend is likely in the United States, given the growing popularity of tax-deferred 401(k) plans that usually require employee participation (Dailey and Turner, 1991).

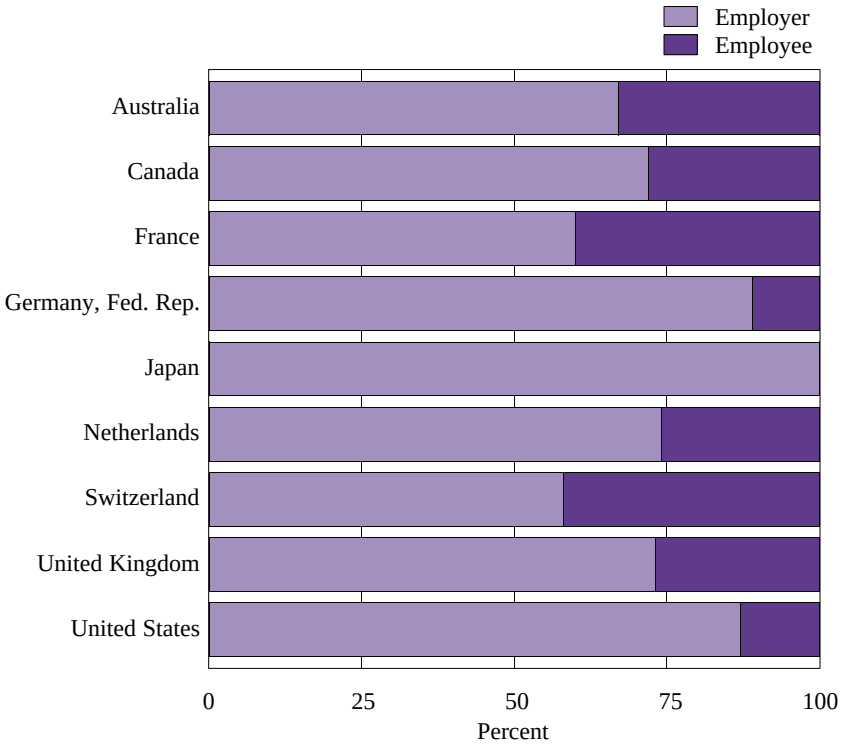
Table 5.4
Total Contributions to Private Pension Plans: 1980 and Circa 1988

(Millions of current U.S. dollars)

Country	1980	Circa 1988
Canada	3,118	3,837
France	12,047	18,018
Germany, Fed. Rep.	2,663	3,747
Japan	N/A	10,741
Netherlands	3,759	3,468
Switzerland	4,074	6,239
United Kingdom	12,580	14,831
United States	66,157	87,900

Source: Dailey and Turner, 1992

Figure 5.4
Employer and Employee Share of Contributions to Private Pension Plans: Circa 1988



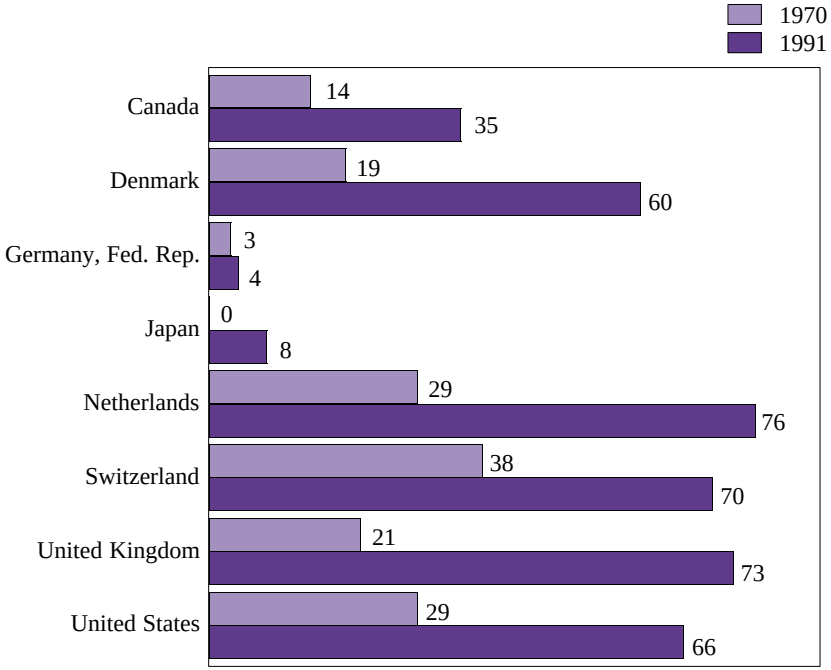
Note: Data for United States refer to 1981.

Source: Dailey and Turner, 1991

Occupational pensions a major source of long-term capital

Data for 8 OECD countries compiled by the World Bank (1994) demonstrate the growth in private pension assets during the 1970's and 1980's. Including estimates of assets managed by insurance firms, total fund assets in 1991 were equivalent to two-thirds or more of national GDP in the United States, the Netherlands, Switzerland, and the United Kingdom. Most occupational-plan funds have been invested in private sector assets, are internationally diversified, and have earned higher returns than publicly-managed funds (Davis, 1992; 1994).

Figure 5.5
Private Pension Fund Assets as a Percent of GDP: 1970 and 1991



Note: Includes estimated assets managed by life insurance firms. Excludes book reserves in Germany and Japan.

Source: World Bank, 1994

Taxes on private pensions

Tax policy vis-a-vis private pensions has become an integral part of macroeconomic planning in countries with extensive occupational pension programs. Private pensions represent a large segment of private sector savings flows, and pension funds are major suppliers of capital to industry (Dilnot, 1994). Governments may manipulate tax rates both for individuals and companies to the extent that they wish to boost savings rates and non-public pension program participation. In 1980, Japan reduced tax incentives for firms to keep large book reserves, and instead encouraged companies to fund worker pensions. As a result, the proportion of Japanese workers covered by private funded schemes rose 7 percent in 8 years.

Table 5.5 is a simplified account of general tax policy regarding private pensions in 18 countries. Given the variety of private pension schemes in these nations, there is a surprising degree of similarity in tax treatment. Most countries levy little or no tax on contributions (under a certain limit), and prefer to collect revenues when pension disbursements are made. The major exceptions to this tendency are Australia and New Zealand. More often than not, income generated by pension contributions goes untaxed until it is taken as a benefit; the Danish system taxes investment income only insofar as it exceeds a given real rate of return (Johnson, 1992).

Table 5.5
Taxation of Private Pensions in Industrialized Countries: Circa 1993

	Tax on:		
Country	Contribution	Fund Income	Benefits
Australia	Mixed	Yes	Mixed
Belgium	Mixed	Yes	Yes
Canada	No	No	Yes
Denmark	No	Mixed	Yes
France	No	n/a	Yes
Germany	Mixed	No	Yes
Greece	No	No	Yes
Ireland	No	No	Yes
Italy	Mixed	No	Yes
Japan	Mixed	Yes	Yes
Luxembourg	Mixed	No	Yes
Netherlands	No	No	Yes
New Zealand	Yes	Yes	No
Portugal	Mixed	No	Yes
Spain	Mixed	No	Yes
Sweden	No	Yes	Yes
United Kingdom	No	No	Yes
United States	Mixed	No	Yes

n/a - not applicable.

Source: Johnson, 1992; Dilnot, 1994

Provident funds paramount in some developing countries

A provident fund is a form of compulsory defined-contribution program wherein regular contributions are withheld from employee wages and invested for later repayment. Payouts typically are in the form of a lump sum upon retirement, but may also be made earlier in times of special need. Except in some Latin American countries, employers match or exceed the employee contribution. Although provident funds can cover private-sector workers, they are managed publicly.

Malaysia, in 1951, was the first nation to establish a wide-scale provident fund. By the mid-1990's more than 20 nations had developed such schemes. None of these countries had a public pay-as-you-go system at the time its provident fund was established (World Bank, 1994). Where provident-fund coverage is extensive, such funds may in effect be the public pension system.

The performance of provident funds globally has been erratic. In some East Asian countries (notably Singapore, which has the world's largest provident fund), funds have earned positive investment returns. In other nations, inflation and poor economic growth have lessened the value of fund contributions; in Sri Lanka, for example, the real annual rate of return for the Provident Fund often has been negative (ILO, 1993). Such performance has led several countries to abandon provident schemes in favor of defined-benefit pension plans.

Table 5.6
Payroll Tax Rates for Provident Fund Schemes: 1991

Country	Employees	Employer
Africa		
The Gambia	5	10
Ghana	5	12.5
Kenya	5	5
Nigeria	6	6
Swaziland	5	5
Tanzania	10	10
Uganda	5	10
Zambia	5	5
Asia		
Fiji	7	7
India	10	10
Indonesia	1	2
Kiribati	5	5
Malaysia	9	11
Nepal	10	10
Singapore	7-30	10
Solomon Islands	5	7.5
Sri Lanka	8	12
Western Samoa	5	5
Latin America		
Argentina (1994)	11	0
Chile	13	0
Colombia (1994)	2.9	8.6
Peru (1993)	13.3	0

Note: New plans began in 1994 in Argentina and Colombia, and in 1993 in Peru.

Source: World Bank, 1994

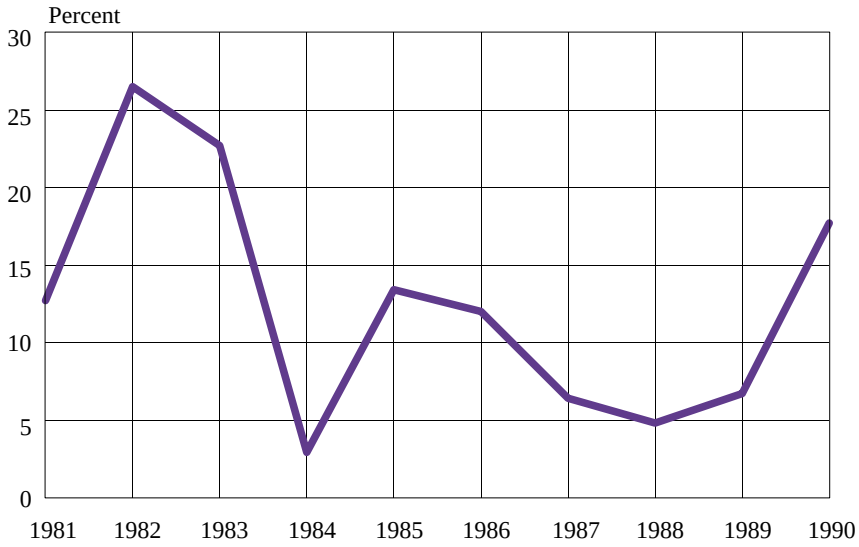
Chile has become the developing-country model for pension privatization

Chile first enacted a public pension scheme in 1911, and expanded its program over time following the European social insurance model financed on a pay-as-you-go basis. Between 1960 and 1980, the ratio of pensioners to contributing workers increased from 9 per 100 to 45 per 100, due to rapidly changing demographics and increasing tax evasion on the part of employees and employers (Williamson, 1992). These changes, occurring in the context of a stagnant economy, resulted in a situation where the pension system was no longer able to meet current obligations. Faced with an increasingly bleak future scenario, the Chilean government in 1980 abandoned its public system in favor of a compulsory savings plan administered by private sector companies.

Since 1981, all wage and salary earners are required to contribute 10 percent of their earnings to a privately-administered retirement fund (additional payroll deductions are made for life insurance and fund expenses). Workers themselves select from many competing investment companies, are free to switch their accounts, and have several options for withdrawal and annuities upon retirement. To reduce mismanagement risks, the government assumes a major supervisory and regulatory role (Schulz, 1993).

By most accounts, the Chilean experiment to date has been a success, with real annual returns on contributions averaging in excess of 12 percent during the 1980's. Observers have pointed out several drawbacks to the new system, such as high administrative costs, workers' loss of freedom vis-a-vis one-tenth of their earnings, and the fact that eventual income replacement rates are not guaranteed, i.e., are reliant on investment earnings that may suffer in times of economic stagnation (Gillion and Bonilla, 1992). Nevertheless, many countries in Latin America (as well as some in Eastern Europe and Africa) have adopted or are seriously considering aspects of the Chilean system (Harteneck and Carey, 1994).

Figure 5.6
Average Real Rate of Return for Private-Sector Pension Funds in Chile: 1981 to 1990



Source: Gillion and Bonilla, 1992

Appendix A -
Statistical Tables

Appendix Table 1.
Number (in thousands) and Percentages of Older Population in Selected Countries, by Age: 1980 to 2025

	1980					1995					2010					2025				
	55-59	60-64	65-69	70-79	80+	55-59	60-64	65-69	70-79	80+	55-59	60-64	65-69	70-79	80+	55-59	60-64	65-69	70-79	80+
Developed																				
Australia	714	602	516	636	246	799	705	697	1,008	456	1,309	1,189	877	1,182	766	1,526	1,448	1,328	2,001	1,079
	4.9	4.1	3.5	4.4	1.7	4.5	3.9	3.9	5.6	2.6	6.4	5.8	4.3	5.8	3.8	6.8	6.5	5.9	9.0	4.8
Canada	1,177	954	832	1,038	439	1,260	1,173	1,084	1,590	809	2,161	1,875	1,389	1,891	1,335	2,202	2,415	2,217	3,213	1,831
	4.8	3.9	3.4	4.2	1.8	4.6	4.2	3.9	5.8	2.9	7.0	6.1	4.5	6.1	4.3	6.6	7.2	6.6	9.6	5.5
Finland	258	209	200	285	88	268	241	233	326	165	384	397	266	379	245	336	348	333	606	331
	5.4	4.4	4.2	6.0	1.8	5.4	4.9	4.7	6.6	3.4	7.7	7.9	5.3	7.6	4.9	6.8	7.1	6.7	12.3	6.7
France	3,076	1,750	2,065	3,798	1,662	2,825	2,907	2,748	3,777	2,554	4,040	3,979	2,600	4,471	3,410	4,080	3,988	3,712	6,396	3,874
	5.7	3.2	3.8	7.0	3.1	5.1	5.2	4.9	6.8	4.6	7.0	6.9	4.5	7.8	5.9	7.0	6.9	6.4	11.0	6.7
Germany	4,424	2,888	3,734	6,313	2,166	5,905	4,434	4,030	5,270	3,364	5,534	4,573	4,764	7,857	4,293	6,665	6,799	5,628	8,010	6,340
	5.6	3.7	4.8	8.1	2.8	7.6	5.7	5.2	6.8	4.3	7.0	5.8	6.1	10.0	5.5	8.8	9.0	7.4	10.6	8.4
Ireland	156	139	134	169	63	148	133	125	198	90	222	200	149	205	129	237	224	210	326	178
	4.6	4.1	3.9	5.0	1.9	4.3	3.8	3.6	5.7	2.6	6.0	5.4	4.0	5.5	3.5	6.1	5.7	5.4	8.3	4.5
Italy	3,413	2,169	2,619	3,562	1,239	3,567	3,294	3,080	4,086	2,298	3,670	3,688	3,021	5,248	3,411	4,653	4,444	3,674	5,791	4,301
	6.0	3.8	4.6	6.3	2.2	6.4	5.9	5.5	7.3	4.1	6.6	6.6	5.4	9.4	6.1	8.8	8.4	7.0	11.0	8.2
Netherlands	717	594	536	768	324	773	698	629	949	494	1,118	1,111	797	1,123	720	1,253	1,235	1,094	1,749	1,001
	5.1	4.2	3.8	5.4	2.3	5.2	4.7	4.2	6.3	3.3	7.2	7.2	5.2	7.3	4.7	8.2	8.1	7.2	11.5	6.6
Norway	242	225	198	284	121	193	178	183	335	179	295	291	218	282	227	332	302	279	458	270
	5.9	5.5	4.8	7.0	3.0	4.6	4.3	4.4	8.1	4.3	7.0	6.9	5.2	6.7	5.4	7.9	7.2	6.7	11.0	6.5
Portugal	498	401	375	511	135	551	535	488	689	317	644	571	479	819	497	835	795	663	958	648
	5.1	4.1	3.8	5.2	1.4	5.4	5.2	4.8	6.7	3.1	6.1	5.4	4.6	7.8	4.7	8.1	7.7	6.4	9.2	6.2
Spain	1,891	1,570	1,439	1,941	630	1,969	2,155	1,926	2,659	1,322	2,386	2,233	1,887	3,169	2,136	3,149	2,958	2,502	3,669	2,625
	5.0	4.2	3.8	5.2	1.7	5.2	5.7	5.1	7.0	3.5	6.2	5.8	4.9	8.2	5.5	8.5	8.0	6.7	9.9	7.1
Sweden	509	470	435	654	265	452	402	401	724	415	574	618	526	664	508	631	594	528	942	642
	6.1	5.7	5.2	7.9	3.2	5.4	4.8	4.8	8.6	4.9	6.6	7.1	6.0	7.6	5.8	7.1	6.7	5.9	10.6	7.2
United Kingdom	3,425	2,858	2,830	4,109	1,553	3,009	2,784	2,642	4,200	2,379	3,572	3,743	2,901	4,266	3,035	4,349	4,316	3,523	5,637	3,751
	6.1	5.1	5.0	7.3	2.8	5.4	5.0	4.7	7.5	4.3	6.3	6.6	5.1	7.5	5.4	7.7	7.7	6.3	10.0	6.7
United States	11,616	10,146	8,813	11,668	5,224	11,050	10,191	10,099	15,533	8,017	18,846	15,707	11,944	16,413	11,748	19,385	21,070	19,608	27,680	14,862
	5.1	4.5	3.9	5.1	2.3	4.3	4.0	3.9	6.1	3.1	6.5	5.4	4.1	5.7	4.1	6.0	6.5	6.1	8.5	4.6

Appendix Table 1.
Number (in thousands) and Percentages of Older Population in Selected Countries, by Age: 1980 to 2025 *(continued)*

	1980					1995					2010					2025				
	55-59	60-64	65-69	70-79	80+	55-59	60-64	65-69	70-79	80+	55-59	60-64	65-69	70-79	80+	55-59	60-64	65-69	70-79	80+
Developing																				
Argentina	1,287	1,065	884	1,098	298	1,441	1,320	1,171	1,557	585	1,943	1,653	1,331	1,892	900	2,198	1,977	1,765	2,561	1,187
	4.6	3.8	3.1	3.9	1.1	4.3	3.9	3.5	4.6	1.7	5.0	4.2	3.4	4.8	2.3	5.1	4.6	4.1	5.9	2.7
Bolivia	134	104	84	87	17	207	169	136	152	35	342	278	208	244	75	545	442	351	440	154
	2.5	1.9	1.6	1.6	0.3	2.6	2.2	1.7	1.9	0.4	3.2	2.6	2.0	2.3	0.7	4.1	3.3	2.6	3.3	1.2
Botswana	16	12	8	9	2	29	23	18	21	7	50	35	26	32	10	95	74	55	59	20
	1.8	1.3	0.9	1.0	0.2	2.1	1.7	1.3	1.5	0.5	2.7	1.9	1.4	1.7	0.5	4.1	3.2	2.4	2.6	0.8
Costa Rica	56	44	33	38	11	90	76	61	74	31	178	136	100	129	63	277	256	214	253	120
	2.5	1.9	1.4	1.7	0.5	2.6	2.2	1.8	2.2	0.9	4.0	3.0	2.2	2.9	1.4	5.1	4.7	3.9	4.6	2.2
Egypt	1,220	949	743	818	193	1,722	1,391	1,011	985	218	2,879	2,201	1,509	1,561	387	4,402	3,467	2,651	2,894	754
	2.8	2.2	1.7	1.9	0.4	2.8	2.2	1.6	1.6	0.4	3.6	2.7	1.9	1.9	0.5	4.5	3.6	2.7	3.0	0.8
Hong Kong	214	181	136	149	40	241	244	210	274	126	429	326	189	357	250	409	498	480	588	310
	4.2	3.6	2.7	3.0	0.8	4.4	4.5	3.9	5.1	2.3	7.8	5.9	3.4	6.5	4.6	7.6	9.3	8.9	10.9	5.8
Indonesia	3,886	2,963	2,309	2,331	407	6,529	5,191	3,447	3,144	650	10,513	6,392	5,289	6,501	1,706	15,523	13,021	10,376	10,774	3,665
	2.6	2.0	1.5	1.5	0.3	3.2	2.6	1.7	1.5	0.3	4.2	2.6	2.1	2.6	0.7	5.4	4.6	3.6	3.8	1.3
Israel	157	121	125	161	48	178	171	163	247	117	325	265	179	266	183	360	317	294	465	233
	4.0	3.1	3.2	4.2	1.2	3.6	3.4	3.2	4.9	2.3	5.4	4.4	3.0	4.4	3.0	5.1	4.5	4.2	6.6	3.3
Jamaica	61	55	50	62	31	67	62	56	81	36	105	77	63	91	51	213	168	122	141	71
	2.9	2.6	2.3	2.9	1.5	2.7	2.4	2.2	3.2	1.4	3.7	2.7	2.2	3.2	1.8	6.5	5.1	3.7	4.3	2.2
Korea, South	1,102	824	637	664	152	1,943	1,476	1,018	1,124	323	2,843	2,170	1,735	2,244	681	4,088	3,750	3,262	3,563	1,484
	2.9	2.2	1.7	1.7	0.4	4.3	3.3	2.2	2.5	0.7	5.6	4.3	3.4	4.4	1.3	7.7	7.0	6.1	6.7	2.8
Malaysia	333	284	199	236	68	586	404	319	339	99	987	765	510	632	194	1,512	1,337	1,039	1,229	417
	2.4	2.1	1.4	1.7	0.5	3.0	2.1	1.6	1.7	0.5	3.7	2.9	1.9	2.4	0.7	4.5	3.9	3.1	3.6	1.2
Mexico	1,514	1,070	870	1,189	470	2,449	1,953	1,477	1,785	767	4,104	3,214	2,504	3,247	1,445	6,968	5,665	4,299	5,689	2,841
	2.3	1.6	1.3	1.8	0.7	2.6	2.1	1.6	1.9	0.8	3.5	2.7	2.1	2.7	1.2	5.0	4.0	3.1	4.0	2.0
Philippines	1,129	829	597	591	150	1,836	1,441	1,078	1,259	345	3,257	2,358	1,770	2,052	607	5,017	4,087	3,272	3,759	1,151
	2.3	1.7	1.2	1.2	0.3	2.5	2.0	1.5	1.7	0.5	3.3	2.4	1.8	2.1	0.6	4.1	3.3	2.7	3.0	0.9

Source: United Nations Department for Economic and Social Information and Policy Analysis, 1994; and U.S. Bureau of the Census, International Programs Center, International Data Base.

Appendix Table 2.

Sex Ratios at Older Ages in Selected Countries: 1995 and 2025

(Males per hundred females)

	1995					2025				
	55-59	60-64	65-69	70-79	80+	55-59	60-64	65-69	70-79	80+
Developed										
Australia	101.8	97.7	93.3	77.8	52.5	100.0	96.7	92.3	83.7	62.7
Canada	97.1	94.7	88.1	73.7	52.5	98.6	93.9	89.6	81.2	59.7
Finland	95.6	89.7	79.2	57.5	37.7	98.8	96.9	93.0	82.9	56.5
France	97.5	91.6	84.5	72.2	45.9	98.5	93.8	88.9	80.9	57.9
Germany	101.5	100.5	96.3	84.5	58.4	101.5	100.5	96.3	84.5	58.4
Ireland	102.1	98.8	88.2	77.1	52.8	101.7	92.3	89.6	83.3	60.6
Italy	93.1	88.5	83.0	69.4	49.6	99.8	96.7	91.9	80.5	55.9
Netherlands	101.6	95.3	86.3	70.4	43.8	100.9	99.5	95.6	86.0	59.6
Norway	98.5	94.6	88.6	74.2	49.7	100.7	98.5	94.6	85.6	59.1
Portugal	85.8	82.6	77.9	70.1	51.1	98.1	93.8	88.9	76.9	51.9
Spain	93.5	90.3	85.0	72.0	51.2	100.3	96.2	91.0	81.4	58.2
Sweden	100.4	94.5	88.8	78.3	53.9	101.9	100.6	96.5	86.0	61.8
United Kingdom	97.6	94.5	88.1	73.0	45.0	100.3	97.1	92.9	82.3	58.3
United States	92.3	88.9	82.6	72.9	47.5	93.5	93.0	90.9	87.6	63.0
Developing										
Argentina	93.2	88.4	82.3	72.0	55.9	95.5	91.5	86.2	75.6	53.7
Bolivia	91.5	89.9	90.1	85.2	69.3	92.3	89.9	86.6	79.0	62.5
Botswana	81.1	80.5	77.5	77.0	67.4	86.0	76.1	61.3	57.4	51.6
Costa Rica	102.0	98.7	94.9	87.4	79.7	101.3	96.3	92.9	87.6	75.8
Egypt	93.6	90.3	87.6	81.1	79.0	100.2	89.2	83.8	73.1	50.6
Hong Kong	118.8	114.5	105.5	88.3	51.0	96.8	92.3	93.8	91.7	72.9
Indonesia	89.5	86.2	83.1	79.0	67.0	95.0	91.7	87.9	79.0	58.4
Israel	88.9	83.2	79.2	78.7	77.6	102.2	99.5	91.7	81.5	62.2
Jamaica	93.2	91.6	88.7	80.0	67.4	99.2	92.2	82.1	77.7	59.7
Korea, South	96.6	84.2	68.4	57.8	35.5	97.1	92.6	86.4	79.4	50.3
Malaysia	97.9	88.5	85.8	75.8	69.5	96.9	89.0	79.7	73.2	54.1
Mexico	91.3	90.5	89.2	83.5	78.0	86.3	81.4	77.6	73.3	61.9
Philippines	92.8	90.2	86.4	86.0	103.1	91.1	86.4	80.4	79.0	86.2

Source: U.S. Bureau of the Census, International Programs Center, International Data Base.

Appendix Table 3.

Median Age of Total and Working-Age (15-64) Population in Selected Countries: 1995 to 2025

	1995		2010		2025	
	Total	15-64	Total	15-64	Total	15-64
Developed						
Australia	32.7	36.5	36.5	39.6	39.1	40.1
Canada	34.0	37.3	37.9	40.7	39.9	40.4
Finland	36.8	39.4	40.3	42.0	41.7	40.9
France	35.2	38.0	38.8	40.8	40.9	40.8
Germany	37.4	39.0	42.7	42.5	44.0	42.7
Ireland	29.8	35.2	34.0	37.3	39.4	40.9
Italy	36.7	37.8	41.5	41.9	45.5	44.0
Netherlands	35.2	37.8	41.0	42.1	43.9	42.4
Norway	35.0	37.5	39.4	40.8	42.8	41.8
Portugal	33.5	35.9	38.5	39.9	43.4	43.1
Spain	34.3	36.0	39.4	40.6	44.9	44.0
Sweden	36.8	39.1	39.1	40.6	39.6	40.0
United Kingdom	34.9	37.7	39.1	41.0	40.7	41.0
United States	33.1	36.7	35.6	39.7	36.4	38.7
Developing						
Argentina	27.6	34.9	29.8	35.3	32.9	37.3
Bolivia	19.9	30.4	23.2	31.9	27.4	34.4
Botswana	17.8	28.6	23.3	30.6	29.2	35.4
Costa Rica	22.7	31.9	26.5	34.2	31.0	36.4
Egypt	21.0	31.0	24.8	32.7	29.2	35.5
Hong Kong	33.8	36.3	40.8	42.8	45.6	43.5
Indonesia	23.3	31.5	28.0	34.5	32.1	37.4
Israel	26.9	34.2	29.4	35.8	32.5	37.0
Jamaica	23.2	30.1	28.4	34.7	34.1	38.3
Korea, South	28.7	33.9	35.3	38.8	40.4	41.7
Malaysia	22.1	32.0	24.5	33.5	27.5	34.8
Mexico	20.8	29.8	25.2	33.0	30.1	36.1
Philippines	20.4	30.4	23.3	32.3	26.7	34.1

Source: U.S. Bureau of the Census, International Programs Center, International Data Base.

Appendix Table 4.

Life Expectancy at Birth and at Age 65 in Selected Countries: 1995

(In years)

	At Birth		At Age 65	
	Male	Female	Male	Female
Developed				
Australia	74.7	81.0	15.7	19.7
Canada	74.9	81.8	16.4	21.1
Finland	72.5	80.1	14.6	18.7
France	74.5	82.4	16.5	21.1
Germany	73.5	79.9	14.8	18.7
Ireland	73.2	79.0	14.1	17.9
Italy	74.7	81.2	15.6	19.7
Netherlands	74.9	81.2	15.2	19.8
Norway	74.3	81.2	15.2	19.7
Portugal	72.1	79.2	14.8	18.4
Spain	74.7	81.4	15.9	19.7
Sweden	75.6	81.4	15.9	19.8
United Kingdom	74.2	80.0	14.9	18.9
United States	72.8	79.7	15.9	19.7
Developing				
Argentina	68.2	75.0	13.9	17.1
Bolivia	61.4	66.4	12.8	14.3
Botswana	60.5	66.7	12.3	14.0
Costa Rica	76.2	80.1	16.9	19.4
Egypt	59.2	63.1	10.2	12.4
Hong Kong	76.8	83.8	17.5	22.6
Indonesia	59.1	63.4	11.9	13.3
Israel	76.0	80.4	16.8	19.1
Jamaica	72.4	77.0	14.8	17.4
Korea, South	67.7	74.3	11.9	16.1
Malaysia	66.6	72.6	12.4	15.0
Mexico	69.7	77.1	16.3	18.8
Philippines	63.2	68.3	14.1	14.3

Source: U.S. Bureau of the Census, International Programs Center, International Data Base.

Appendix Table 5.

Labor Force Participation Rates for Five Age Groups, Selected Countries: Circa 1975 and 1992

(Percent economically active)

		Males					Females				
Country	Year	25-34	45-54	55-59	60-64	65+	25-34	45-54	55-59	60-64	65+
Developed											
Australia	1975	96.8	93.9	87.8	68.6	16.7	48.4	46.3	31.2	15.6	3.9
	1992	93.2	89.0	74.1	48.1	9.3	64.9	64.6	36.8	12.5	2.2
Canada	1975	95.4	92.7	[1]79.4	-	18.5	52.9	46.1	[1]30.8	-	5.0
	1992	91.6	90.0	[1]62.0	-	11.0	75.9	71.2	[1]36.4	-	3.6
Finland	1975	94.0	87.2	75.3	56.1	29.4	79.5	71.8	59.1	27.8	8.5
	1992	92.0	88.1	62.3	27.7	6.2	79.1	87.3	60.5	20.6	2.5
France	1975	96.7	94.9	83.3	56.8	14.0	62.2	53.7	44.2	30.0	5.8
	1992	94.9	93.0	68.7	19.2	3.5	76.9	69.8	45.8	15.2	1.4
Germany, Fed. Rep.	1975	93.6	94.7	85.4	58.4	10.6	55.4	50.8	38.9	15.8	4.6
	1990	88.1	91.7	78.5	34.8	4.6	66.3	59.5	41.9	11.1	2.2
Ireland	1975	97.2	94.0	[1]83.8	-	28.2	30.5	24.6	[1]20.9	-	7.2
	1991	95.3	89.8	[1]66.9	-	16.5	62.0	32.9	[1]19.3	-	3.3
Italy	1975	[2]96.6	[3]96.7	[4]50.6	42.4	7.3	[2]35.5	[3]31.6	[4]23.3	8.5	1.5
	1992	[2]94.0	[3]96.0	[4]77.2	35.6	5.5	[2]63.4	[3]51.0	[4]29.3	9.7	1.4
Netherlands	1975	95.0	91.0	78.9	64.9	8.0	31.3	24.4	17.5	10.8	1.8
	1992	95.0	90.1	62.2	23.8	n/a	68.1	51.4	25.8	6.5	n/a
Norway	1975	91.1	90.5	86.6	76.9	37.6	51.1	56.5	49.6	40.0	12.1
	1992	90.0	90.2	80.5	63.8	17.7	77.5	77.3	63.4	45.5	10.1
Portugal	1975	96.4	93.7	82.4	74.2	36.3	53.4	42.5	36.9	27.6	11.1
	1992	94.0	90.4	71.8	56.2	19.5	78.5	57.6	41.2	27.7	8.0
Spain	1975	96.1	95.4	87.6	71.5	18.8	30.8	27.2	26.2	19.7	6.3
	1992	92.3	90.3	74.5	46.2	3.4	62.8	35.1	24.2	16.3	1.6
Sweden	1975	94.9	94.1	89.7	74.0	19.9	71.3	75.2	60.7	38.3	6.1
	1992	90.7	93.1	84.9	60.9	13.7	85.0	89.7	78.6	51.7	5.1
United Kingdom	1975	94.9	96.2	93.0	82.3	15.6	51.8	66.3	52.4	28.6	4.9
	1992	93.2	91.0	78.0	52.9	8.7	69.4	74.5	54.7	23.4	3.6
United States	1975	94.6	91.2	83.3	64.5	20.7	54.9	54.3	47.5	33.0	7.8
	1992	92.8	90.1	78.2	54.1	15.5	74.0	72.4	56.5	36.2	7.7

Appendix Table 5.

Labor Force Participation Rates for Five Age Groups, Selected Countries: Circa 1975 and 1992 *(continued)*

(Percent economically active)

		Males					Females				
Country	Year	25-34	45-54	55-59	60-64	65+	25-34	45-54	55-59	60-64	65+
Developing											
Argentina	1978	97.5	94.1	79.4	49.5	22.3	36.0	28.6	20.9	14.6	4.4
	1990	96.7	93.0	79.4	56.1	50.9	42.9	29.4	18.4	9.9	2.9
Bolivia	1976	96.2	97.8	94.8	89.7	80.5	24.6	21.7	18.6	16.8	14.1
	1991	[5]84.7	[3]97.1	[4]86.1	[6]52.5	[7]27.9	[5]53.8	[3]61.2	[4]47.0	[6]29.8	[7]19.1
Botswana	1975	[8]96.9	97.9	[1]96.5	-	84.3	[8]81.0	83.5	[1]82.0	-	65.7
	1991	92.6	88.6	83.5	74.5	58.9	58.1	53.7	32.3	27.9	17.5
Costa Rica	1973	97.6	97.2	94.3	86.0	57.1	25.6	15.3	10.7	7.8	3.9
	1992	[5]96.2	[3]95.0	[4]82.5	[6]50.8	[7]25.0	[5]41.4	[3]37.9	[4]22.8	[6]7.7	[7]5.2
Egypt	1976	94.7	97.5	96.0	77.9	40.9	9.5	3.3	2.8	2.2	1.0
	1991	[2]95.9	[3]98.8	[4]97.9	52.0	39.5	[2]30.8	[3]22.3	[4]14.1	5.8	7.7
Jamaica	1975	97.8	97.2	[1]90.9	-	64.7	79.3	76.1	[1]56.6	-	27.0
	1990	95.3	94.9	[1]84.3	-	53.6	84.3	82.0	[1]61.3	-	23.6
Hong Kong	1976	94.7	92.6	80.6	64.2	33.9	46.7	38.8	33.3	28.3	12.2
	1990	98.6	95.2	81.0	54.5	21.2	66.3	44.7	26.9	18.2	5.9
Indonesia	1976	98.9	97.0	92.4	87.5	69.7	51.2	61.5	54.1	48.4	31.2
	1992	95.5	95.8	89.6	79.7	56.8	61.7	59.2	52.5	42.7	25.1
Korea, South	1975	97.2	95.3	85.6	68.3	34.4	38.6	58.6	50.9	33.7	12.0
	1992	94.2	93.3	84.9	71.0	42.3	46.1	60.9	54.1	44.9	19.6
Israel	1976	86.9	92.4	[1]84.6	-	29.5	45.0	38.3	[1]23.7	-	5.3
	1992	82.5	86.9	79.8	62.0	18.7	58.5	57.0	42.3	19.4	5.6
Malaysia	1970	93.5	89.0	76.4	66.1	46.6	39.9	40.3	30.7	25.1	13.7
	1990	96.0	94.7	71.4	61.4	-	50.4	46.2	32.5	26.6	-
Mexico	1975	[8]96.6	95.2	[1]88.1	-	63.5	[8]17.5	16.9	[1]14.7	-	10.1
	1993	96.5	94.3	88.6	79.8	60.1	41.9	36.3	27.0	22.7	15.0
Philippines	1976	92.1	94.7	90.7	84.3	62.6	26.5	24.2	21.7	19.6	13.7
	1992	97.2	97.3	[1]88.1	-	61.8	50.3	59.2	[1]51.7	-	28.3

Notes: " - " data not available.

[1]refers to ages 55 to 64.
[2]refers to ages 25 to 39.
[3]refers to ages 40 to 49.
[4]refers to ages 50 to 59.
[5]refers to ages 20 to 39.
[6]refers to ages 60 to 69.
[7]refers to ages 70 and over.
[8]refers to ages 25 to 44.

Source: International Labour Office, Year Book of Labour Statistics, various issues: and OECD, 1993.

Appendix B - Glossary

(For an extensive glossary of pension terminology, see Mayers and Dailey, 1992).

Age-specific growth rate — the average annual change in the size of a specific age grouping. Such change may be affected by a combination of past and present birth, death, and migration rates.

Age-specific mortality rate — the number of deaths during a year to persons in a particular age group per 1,000 persons in the same age group at midyear.

Age structure — the distribution of a population according to age, usually by 5-year age groups.

Birth rate — the number of births during a year per 1,000 population at midyear. Also known as crude birth rate.

Book reserves — a pension scheme in which an organization guarantees employee retirement benefits, in return for which it sets up provisions on the liability side of the company balance sheet and uses these "assets" at its discretion. Book reserves are often covered by an insurance bond to assure solvency.

Cohort — a group of individuals born in the same calendar year or sequential group of years.

Compulsory occupational pension plans — retirement plans required by law for specific industries or all industries within a country.

Death rate — the number of deaths during a year per 1,000 population at midyear. Also known as crude death rate.

Defined benefit plan — a pension scheme with a prescribed formula (e.g., a percentage of final salary times years of service) for calculating benefit amounts.

Defined contribution plan — a pension scheme in which periodic contributions are prescribed and the benefit is dependent upon an individual's account balance at retirement. The balance depends upon amounts contributed and investment returns (and, in the case of profit sharing plans, amounts that may be allocated due to forfeitures by terminating employees).

Developed countries — All nations in Europe (including the European republics of the former Soviet Union) and North America, plus Japan, Australia, and New Zealand. This category is the same as the "more developed" classification employed by the United Nations.

Developing countries — All countries of the world not included in the "developed country" category above. The "developing country" category is the same as the "less developed" classification employed by the United Nations.

Discouraged worker — usually refers to those persons who were once economically active but currently are not seeking employment either because they believe no work is available or do not know where to look.

Early retirement age — an age defined by terms of a pension plan, less than the normal or standard retirement age, at which a participant may begin to receive pension payments (possibly reduced relative to those payable at the standard retirement age).

Earnings test — used to determine a potential recipient's eligibility for a benefit (e.g., certain benefits are paid only if a recipient's income falls below a specified level).

Economically active — participating as a member of the labor force. Refers to both employed and unemployed persons, including those seeking work for the first time. The concept and definition of economic activity may vary widely among nations, especially with regard to the daily activities of women.

Elderly — persons aged 65 years or older.

Elderly support ratio (also called the elderly dependency ratio) — the ratio of persons aged 65 or older to those aged 20 to 64 in a population.

European Union — a 12-nation (Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and the United Kingdom) association working toward economic integration and closer political unity. Formerly called the European Community.

Eurostat — the statistical office of the European Union, headquartered in Luxembourg.

Family worker — a member of the labor force working a specified number of hours with or without pay, usually as part of a family enterprise.

Fully funded — refers to pension schemes with accumulated reserves totalling 100 percent of the present value of all liabilities owed to current members.

Funded pension plans — schemes in which pension commitments (liabilities) to members are covered by real or financial assets.

Gross domestic product (GDP) — The value of all final goods and services produced within a nation in a given year.

Healthy life expectancy (also called active life expectancy or disability-free life expectancy) — the average number of years that a person may expect to live without limitation of function due to one or more chronic disease conditions.

ILO — International Labour Office, a United Nations agency headquartered in Geneva, Switzerland.

Income replacement rate (ratio) — the value of a pension as a proportion of a worker's wage during some base period, typically the last year or two prior to retirement.

Industrialized nations — see "developed countries."

Labor force participation rate (LFPR) — the number of economically active persons in a particular age group as a percent of total population in the same group.

Life expectancy at birth — the average number of years a group of people born in the same year can be expected to live if mortality at each age remains constant in the future.

Longitudinal data — sets of information collected from the same respondents (or proxies) at multiple points in time.

Lump sum payment — payment within one taxable year of the entire balance from a trust which forms part of a pension or employee annuity plan.

Means-tested benefit — see "earnings test."

Median age — the age which divides a population into two equal-size groups, one of which is younger and the other older than the median.

Net migration rate — the difference between the number of migrants entering and those leaving a country in a year, per 1,000 midyear population. A positive rate denotes net immigration and a negative rate denotes net emigration.

OECD — Organization for Economic Cooperation and Development, an organization of 24 developed countries plus Mexico headquartered in Paris, France.

Oldest old — persons aged 80 years or older.

Pay-as-you-go pension plan — a method of financing whereby current pension benefit outlays are paid with current revenues from an earmarked tax, often a payroll tax.

Population aging — most commonly defined as an increase in the proportion of total population at older ages (e.g., 65 and over). May also be measured as an increase in median population age.

Population growth rate — the average annual change in a national population, resulting from a surplus (or deficit) of births over deaths and the balance of migrants entering and leaving the country.

Provident fund — a defined contribution scheme wherein regular contributions are withheld from employee wages and managed/invested by the public sector for later payment.

Replacement-level fertility — the average number of children each woman would have to bear for a population to remain the same size over the long term. Conventionally taken to be an average of 2.1 children per woman.

Sex ratio — the number of males per 100 females in a population or subgroup.

Standard (normal) age at retirement — the age, written into pension statutes of the public retirement system, from which a retirement pension is paid without any reduction or special conditions.

Total fertility rate (TFR) — the average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to the prevailing set of age-specific fertility rates.

Unemployment rate — the number of unemployed economically active persons expressed as a percent of the total (or age-specific) economically active population.

Appendix C - References

(Many of the demographic data in this report are taken or derived from dozens of sources not included in the following reference list. These unnamed sources consist mainly of primary census and survey volumes of individual nations, as well as periodic issues of international compendia such as the United Nations *Demographic Yearbook*. For information on data bases concerning social security generally, the reader is referred to Butare, 1994).

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The Impact of HIV/AIDS on World Population. 1994. Presents the method and results of incorporating HIV/AIDS seroprevalence and mortality into Bureau of the Census population estimates and projections for selected countries of the world.

Data Bases and Microcomputer Applications

International Data Base. Contains statistical tables of demographic and socioeconomic data for all countries of the world, obtained from national censuses, surveys, and administrative records. Microcomputer and Internet versions are available.

HIV/AIDS Surveillance Data Base. Incorporates extant seroprevalence data obtained from scientific literature and from presentations at international conferences. Microcomputer and Internet versions are available.

Integrated Microcomputer Processing System. Contains software packages that perform the major tasks in survey and census data processing.

Population Analysis with Microcomputers/Population Analysis Spreadsheets. Two-volume publication which: 1) explains the concepts behind frequently-used demographic techniques; and 2) includes a microcomputer spreadsheet diskette and documentation for use with Lotus 1-2-3.