

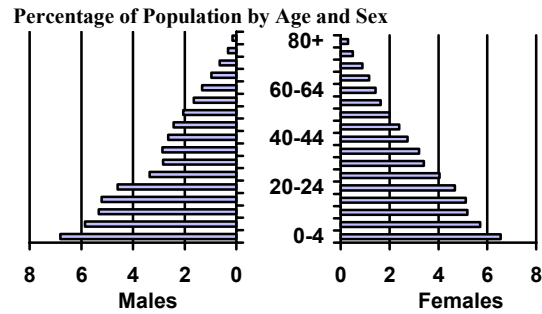
## JAPAN

Japan's population has aged rapidly over the past 50 years. The figures at right show the percentage of Japan's total population by five year age groups separately for males and females in 1950, 2000 and 2030. In 1950, the structure of Japan's population formed a classic pyramid, where each successively younger age cohort represents a larger portion of the total population.

By 2000, Japan's population structure diverged from the classic pyramid shape and was replaced by a formation more representing a pillar, where the percentage of the population in each age cohort is more evenly distributed. The rapid change in Japan's population structure was caused by a combination of a drop in fertility rates between 1950 and 2000 from 2.75 to 1.33 and an increase in life expectancy at birth by over 16 years and 19 years for males and females, respectively.

Looking to the future, the anticipated mix of low birth rates and improving life expectancy will result in a much older society where the population structure more closely depicts an inverted pyramid. Most notable is the spike in the percentage of women over 80 years old in the society. By 2030, the average age in Japan will be 49, up from 41 in 2000.

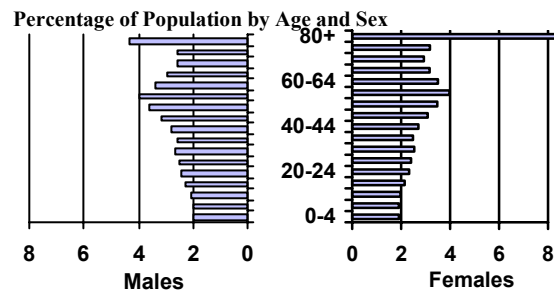
### Japan's Population Structure in 1950



### Japan's Population Structure in 2000



### Japan's Population Structure in 2030



Source: UN Population Division, World Population Prospects (The 2000 Revision).

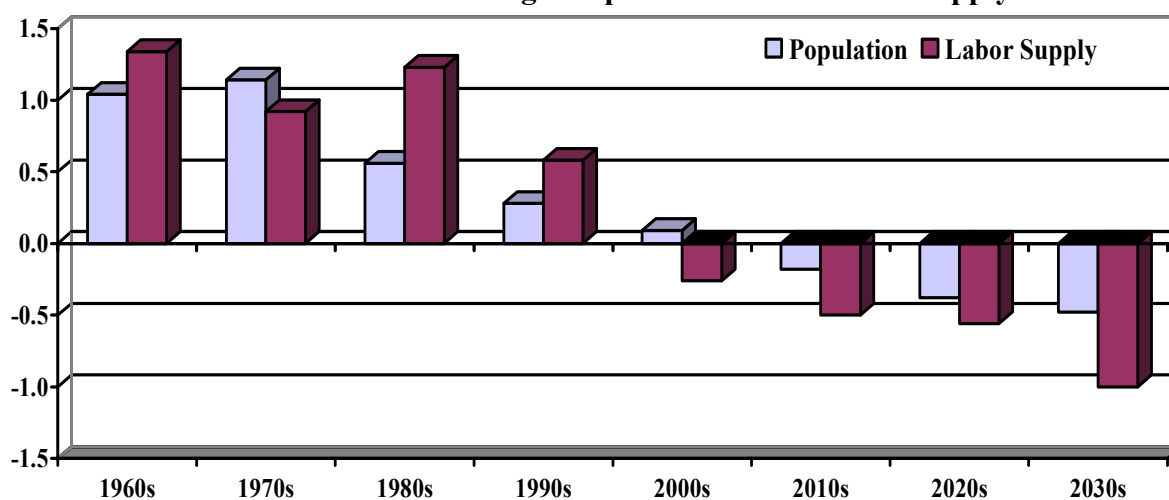
## Demographic History

	1950	1960	1970	1980	1990	2000
Life Expectancy at Birth						
Males	61.60	66.70	70.60	74.15	76.22	77.81
Females	65.51	71.71	75.90	79.67	82.43	84.98
Life Expectancy at 65						
Males	-	76.88	78.10	80.06	81.39	82.45
Females	-	79.36	80.96	83.22	85.69	87.57
Fertility Rate	2.75	2.02	2.07	1.76	1.49	1.33
Net Migration Rate	-0.01	-0.01	-0.03	0.01	0.15	0.21

A critical component of a society's ability to expand its production of goods and services depends on the growth in its labor force. As Japan's population has aged over the last half-century, the rate of growth in its workforce has undergone significant changes. Soon after the end of World War II, many industrialized societies, although only for a brief period in Japan, experienced a significant spike in birth rates – better known as the baby boom. Labor supply growth in Japan was high between 1960 and 1990 as the baby boom generation entered their working years, including an unprecedented number of its female members. Low fertility rates over the last few decades have caused population growth to slow considerably, which boosted the percentage of the population that was economically active. Between the 1970 and 2000, total dependency rates in Japan fell by about 10 percent, while youth dependency fell by about 39 percent. Japan is relatively unique from the other developed nations in that its old age dependency ratio nearly doubled over the same period. Although the ratio is relatively low in comparison to other developed nations, the significant increase indicates that Japan was already aging quite rapidly at the end of the last century, while many other societies were just beginning the process. This is in large part due to the tremendous gains in life expectancy.

As an increasing portion of Japan's workforce reaches retirement age, Japan's labor supply growth will slow considerably over the coming decades. This is caused by the combination of prolonged low fertility, improving life expectancy and a greater proportion of the population in age groups that have lower propensities to work. In fact, Japan's labor force will begin to shrink over the coming decade, reaching a decline of over one percent per annum over the 2030s. As a result, Japan will face a much greater percentage of its population being inactive, reflected by over a 36 percent increase in the total dependency ratio and an over 88 percent rise in old age dependency rates between 2000 and 2030.

**Annual Percent Change: Population versus Labor Supply**



Source: World Bank, World Development Indicators database

**Dependency Ratios**

	1970	2000	2030	% change 1970-2000	% change 2000-2030
Youth- (Inactive pop 0-19)/ LF 15+	0.60	0.37	0.33	-38.63	-10.90
Aged- (Inactive pop 55+)/ LF 15+	0.17	0.33	0.62	91.25	88.48
Total- (Inactive pop 0-19 and 55+)/ LF 15+	0.77	0.70	0.95	-9.53	36.17

Source: Sources: International Labor Office, LABORSTA database, current through 2001; UN, Population Division, World Population Prospect (The 2000 Revision); OECD, CDE database on labor statistics, current though 2002

### Old Age Pension System

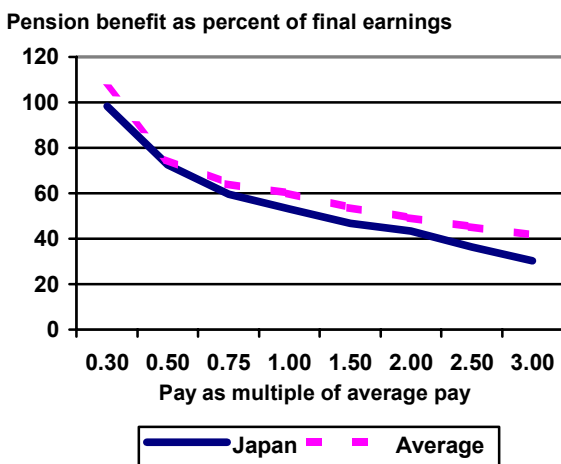
The old age pension system in Japan is made up of a two-tiered public benefit. The first tier of the public pension is the basic pension which is payable from age 60 with 25 years' contributions. The normal retirement age will gradually increase to age 65 in 2013 for men and in 2018 for women. To receive the full benefit amount, 40 years' contributions to the system are necessary. There is an earnings floor for contributions at roughly 28 percent of average earnings. The full basic pension is a flat amount of ¥804,200 as of 1999, which is about 19 percent of average earnings and is price indexed. The second tier of the public benefit is an earnings-based pension, known as employees' pension insurance. The pension is payable from age 60 but will increase to age 65 by 2025. This benefit pays 0.7125 percent of lifetime average earnings for each year of contributions. Prior to March 2000, the rate was 0.75 percent – a five percent cut in the accrual rate. There is cap on contributions and earnings eligible for benefits of ¥7,000,000, about 168 percent average earnings. Earlier years' earnings are uprated in line with economy-wide earnings and benefits in payment are indexed to prices – prior to 2000 they were indexed to net earnings. To finance the two tiers, a payroll tax rate of 13.6 percent of earnings is evenly split between the insured and employers. However, given the pressures from its aging population, a recent proposal has the payroll tax rate rising to 18.4 percent by 2017 with the target replacement rate falling to at least 50 percent, nearly 10 below the current rate.

In addition to the public scheme, approximately 90 percent of employers in Japan offer an occupational plan, although there is wide variation in the type of benefit offered. More than 70 percent of employers offer a lump sum retirement payment that also serves as a severance payment. Additionally, about 35 percent of employees participate in tax-qualified pension plans, where benefits are typically payable as a lump sum or an annuity. Also, about 20 percent of employees participate in an Employee Pension Fund, where employers and employees both contribute 1.6 to 1.9 percent earnings. Employers that provide these benefits can opt out of the public pension system if benefits are at least 30 percent larger than the earnings-related public scheme.

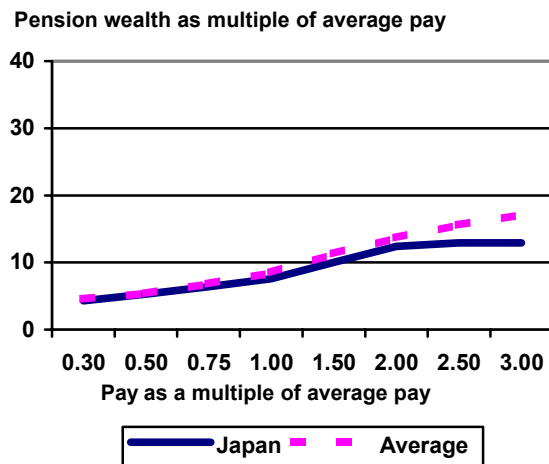
As shown in the figures below, Japan's pension scheme provides benefits that are comparable to the average of other OECD nations and provides a similar degree of income redistribution across the earnings spectrum; however, higher income individuals accumulate slightly less pension wealth.

Source: Whitehouse, Edward (2003) and Social Security Administration, Social Security Programs Throughout the World (1999).

**Gross Replacement Rates**  
Japan v OECD Average



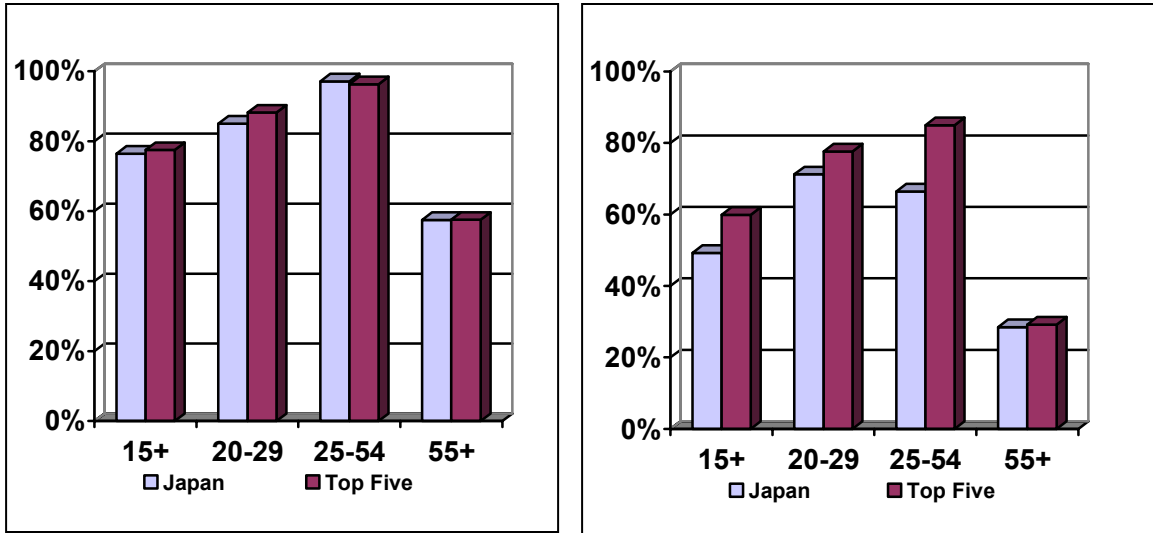
**Gross Pension Wealth**  
Japan v OECD Average



Source: Whitehouse, Edward (2003)

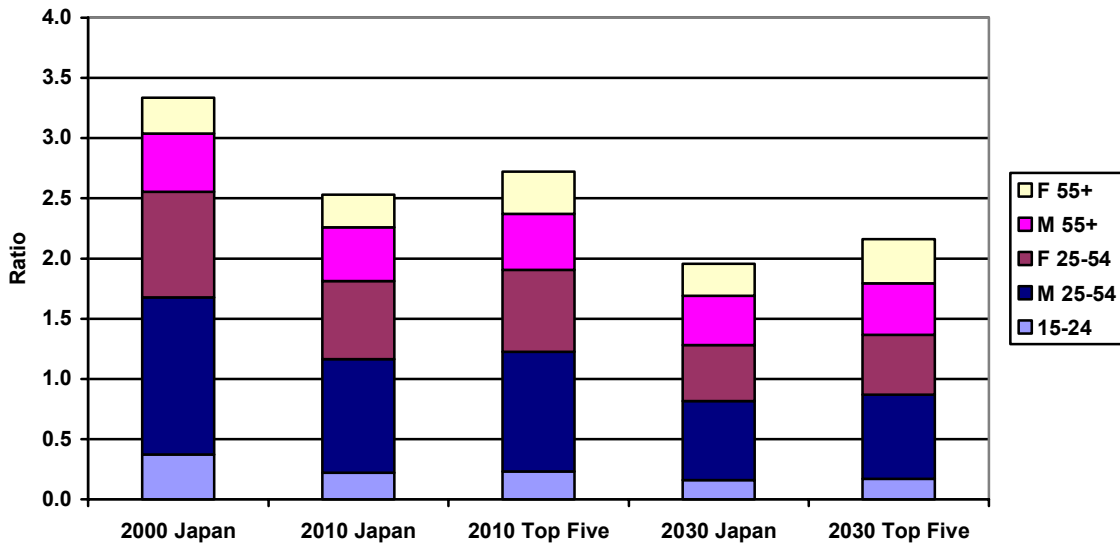
Notes: Pension wealth estimates are a multiple of economy-wide average.

**Labor Force Participation Rates: Japan v Top Five OECD Country Composite**  
 Males Females



Source: OECD, Corporate Data Environment database on labor statistics, current though 2002

**Ratio of Workers in Japan 15+ to Retirees 60+ in 2000, 2010 and 2030 and Under Alternative Assumptions of Old Age Participation Rates for the Top Five OECD Countries**



Source: UN Population Division, World Population Prospects (The 2000 Revision); OECD, Corporate Data Environment database current though 2002

Much of the burden caused by demographic aging is due to rising dependency rates. In the coming decades, many industrialized nations, including Japan, will need to figure out how to support a growing inactive population with fewer workers. One way to diminish the dependency burden is to take measures to adopt programs that promote greater workforce participation. The figures above show how Japan's labor force participation stacks up next to the average of the Top-five OECD nations. Japan's labor force participation compares favorably next to the average of the Top-five OECD nations for all male age cohorts and also for both older males and females. However, activity rates of younger and middle age women fall considerably below the OECD average. As shown in the figure above, if Japan maintains its current activity rates between 2000 and 2030, the ratio of workers to retirees is expected to fall from nearly 3.3 to 2.0. However, by adopting policies to entice more older workers into the labor force at rates similar to those achieved by the Top-five OECD nations, Japan could only raise its activity rate to 2.2 workers per retiree in 2030. While enticing additional older workers may only slightly reduce the aging burden, there is room to entice higher female labor force participation to alleviate the effects of a "graying" nation.