

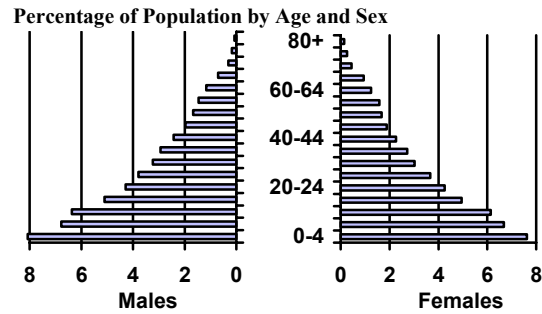
## KOREA

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

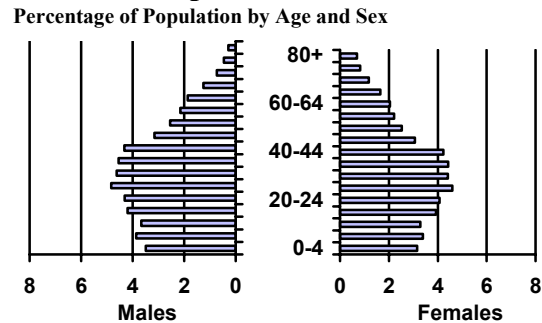
By 2000, Korea's birth rate fell from 5.4 in 1950 to 1.5, and life expectancy rose 26 and 30 years for males and females, respectively. The dramatic changes in fertility rates and life expectancy have caused Korea's population structure for younger age cohorts to shift to a formation more representing a pillar, while for older age groups it still maintains a classic pyramid shape. The bulge in the middle aged cohorts represents the surge in fertility rates following WWII that produced the baby boom generation.

Looking to the future, the anticipated mix of low birth rates with continued improvements in life expectancy will result in a much older society, where the population structure will closely resemble a pillar formation throughout. By 2030, the average age in Korea will be 43, up from 33 in 2000.

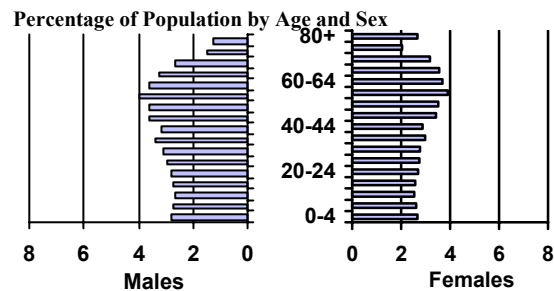
### Korea's Population Structure in 1950



### Korea's Population Structure in 2000



### Korea's Population Structure in 2030



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

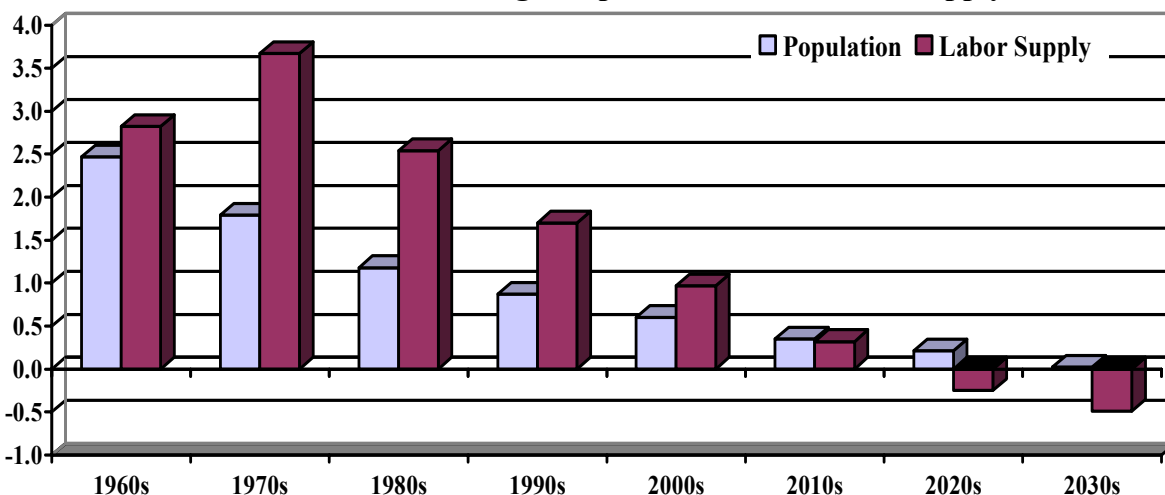
## Demographic History

|                          | 1950  | 1960  | 1970  | 1980  | 1990  | 2000  |
|--------------------------|-------|-------|-------|-------|-------|-------|
| Life Expectancy at Birth |       |       |       |       |       |       |
| Males                    | 46.00 | 53.58 | 59.27 | 63.12 | 68.25 | 71.76 |
| Females                  | 49.00 | 56.90 | 66.11 | 71.42 | 76.36 | 79.12 |
| Life Expectancy at 65    |       |       |       |       |       |       |
| Males                    | -     | -     | 75.20 | 75.75 | 77.79 | 78.84 |
| Females                  | -     | -     | 79.70 | 80.15 | 81.00 | 83.06 |
| Fertility Rate           | 5.40  | 5.63  | 4.28  | 2.23  | 1.68  | 1.51  |
| Net Migration Rate       | 2.66  | -0.10 | -0.40 | -0.50 | -0.27 | -0.17 |

A critical component of a society's ability to expand its production of goods and services is the growth of its labor force. As Korea's population aged over the past half-century, the growth of its labor force has undergone changes as well. Soon after the end of World War II, many industrialized societies, experienced a significant spike in birth rates that produced the generation known as the baby boom. In Korea, while the rate of fertility rose only slightly over this period, rates were nearly twice that of replacement up to and including much of the 1970s. As a result, labor supply growth remained quite strong over much of the last half century. Fertility rates decreased rapidly over the 1980s and 1990s, considerably slowing the pace of population growth. This created a temporary boon, where a high percentage of the population is economically active – often referred to as a “demographic dividend”. Between the 1970 and 2000, total dependency rates in Korea fell by about 53 percent, while youth dependency fell by about 60 percent.

As a growing segment of Korea's population moves into retirement over the next few decades, labor force growth is expected to slow considerably. This is caused by the combination of several factors – prolonged low fertility, improving life expectancy and a greater proportion of the population in age groups that have lower propensities to work. In fact, by the 2020s, these forces will actually cause Korea's workforce to shrink. By 2030 a greater portion of the population will be inactive, causing Korea's total dependency rate to rise by 17 percent and old age dependency to increase by 154 percent from rates in 2000.

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



Source: World Bank, World Development Indicators database

**Dependency Ratios**

|  | 1970 | 2000 | 2030 | % change<br>1970-2000 | % change<br>2000-2030 |
|--|------|------|------|-----------------------|-----------------------|
| Youth- (Inactive pop 0-19)/ LF 15+         | 1.46 | 0.58 | 0.44 | -60.34                | -24.02                |
| Aged- (Inactive pop 55+)/ LF 15+           | 0.15 | 0.17 | 0.44 | 17.65                 | 154.11                |
| Total- (Inactive pop 0-19 and 55+)/ LF 15+ | 1.61 | 0.75 | 0.88 | -53.30                | 16.78                 |

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

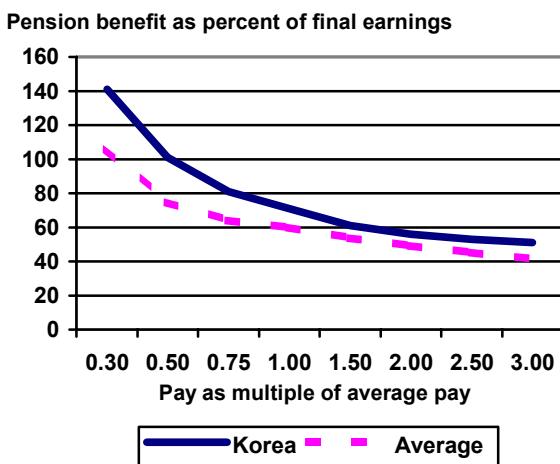
Korea's social insurance system – the National Pension Scheme (NPS) – with old-age benefits is a relatively new offering that was implemented in 1988. The system is a publicly managed, earning-related defined benefit scheme that is available to all citizens. Unreduced old-age benefits are available at age 60 to those with 20 years of service, while an actuarially reduced benefit can be drawn from age 55. The normal retirement age will be raised gradually to age 65 by 2033. Currently the system is mostly paying death and disability pensions and some reduced old-age pensions, largely because the program is immature and building up a reserve fund that as of 2003 was roughly 8 percent of GDP. Regular pensions will begin in 2008 after the first cohort fulfills the 20 year service requirement. The retirement benefit is price-indexed and derived from the sum of two components – the average economy-wide wage and the workers' own indexed earnings. There is no ceiling to pensionable pay. The original benefit was originally designed to replace 70 percent of final earnings; however, given concerns over future costs the replacement rate was reduced to 60 percent. The benefit accrues 1.5 percent of earnings per year of participation in the plan. To finance the NPS contributions are shared equally between the insured and employers at 4.5 percent of earnings.

In addition to the NPS, there is a mandatory severance payment that can be considered part of retirement income. The severance pay scheme is not universal – since 1989, it applies to establishments with five or more employees covering around a half of the total salaried employment. The program is completely financed by employers. The minimum benefit is a single, lump sum payment equivalent to one month's salary per year of service – although on average it is more than a month's salary at most firms and is often a progressive structure with increasing tenure. This payout is legally binding and must be paid out within 14 days of termination or retirement. Recently there have been proposed bills to introduce a corporate pension system where funds would be invested in the stock market to alleviate burdens on the current severance pay system caused by their aging population.

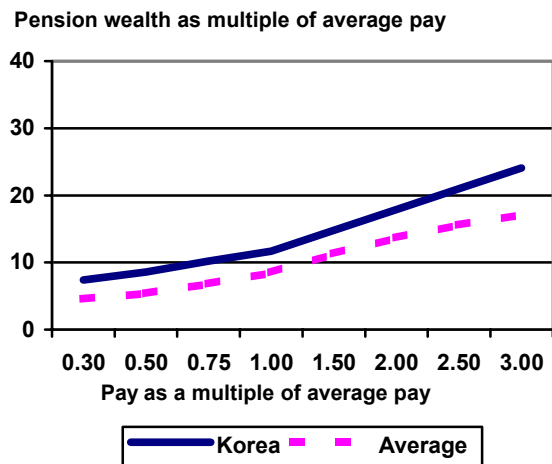
As the graphs below indicate, Korea's old age system provides slightly above average income replacement and gross pension wealth compared to the OECD average and the program introduces an element of redistribution. While the pension costs as a share of GDP are expected to rise roughly 43 percent for the OECD average between 2000 and 2050, Korea's pension costs are anticipated to rise from 2.1 percent of GDP to over 10 percent. This reflects the maturation of the relatively rich NPS coupled with an aging population.

Source: Whitehouse, Edward (2003), Social Security Administration, Social Security Programs Throughout the World (2002), Dang et al. (2001) and Jai-Joon Hur, (2003) "Korean Severance Pay Reform: For Old-age Income Security or Coverage Expansion?" Korea Labor Institute. Seoul. October.

**Gross Replacement Rates**  
Korea v OECD Average



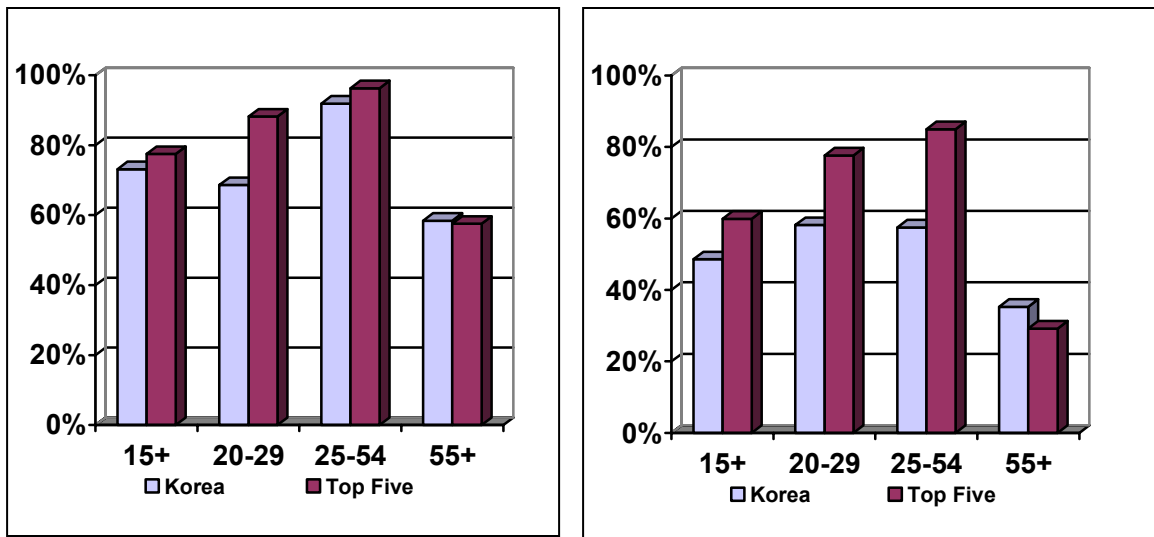
**Gross Pension Wealth**  
Korea v OECD Average



Source: Whitehouse, Edward (2003)

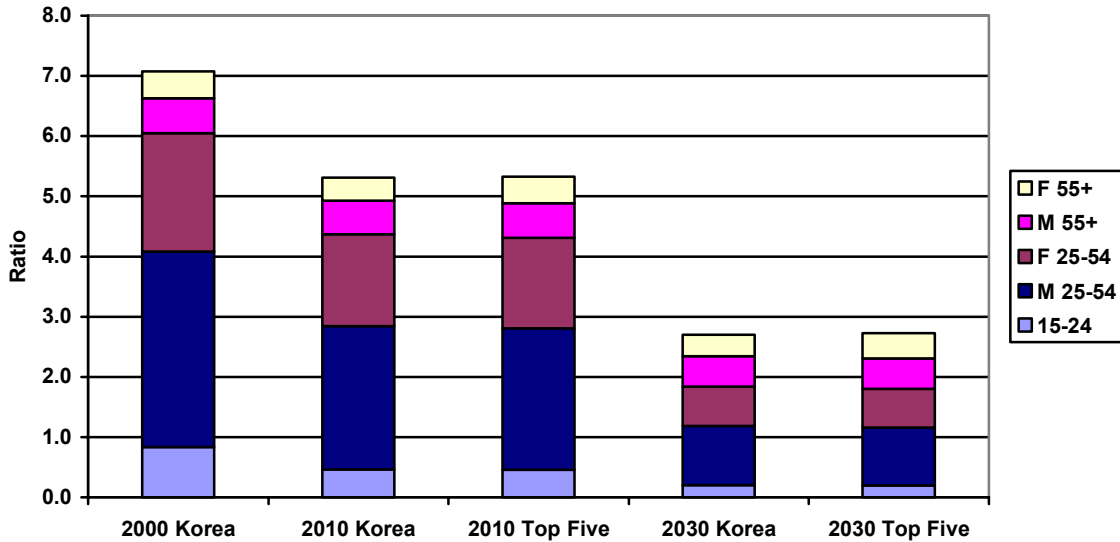
Notes: Pension wealth estimates are a multiple of economy-wide average.

**Labor Force Participation Rates: Korea v Top Five OECD Country Composite**



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

**Ratio of Workers in Korea 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, Korea will need to figure out how to support a growing inactive population with fewer workers. As shown in the figure above, if Korea maintains its current activity rates between 2000 and 2030, the ratio of workers to retirees is expected to plummet from nearly 7.1 to 2.7. Activity rates for older individuals and for males aged 25 to 54 in Korea compare favorably to those of the average of the Top-five OECD nations. However, there is room for increased female labor force participation for cohorts age 25 to 54 and also among youths (age 20 to 29) for both males and females. By increasing female and youth labor force participation, Korea could decrease the dependency burden it will face in the coming years. However, unlike many other OECD nations, Korea will continue to enjoy higher labor supply growth than population growth over the present decade, making the current period a good opportunity to enact policies to address its old-age dependency burden. In the coming decades, Korea will age quite rapidly compared to other developed societies, and as a result, will need to be proactive to address their aging burden.