02-2-6

The Population of Korea

WORKING PAPER

Choe, Ehn Hyun

Byun, Yong Chan

Korea Institute for Health and Social Affairs

The Population of Korea

Choe, Ehn Hyun
Byun, Yong Chan

Korea Institute for Health and Social Affairs

Contents

Ⅰ. Introduction

Until the early 1960s, the level of economic development in Korea was very low and population growth was high, resulting in poverty being prevalent throughout the country. The Korean government subsequently, adopted the national family planning program as part of the Five-Year Economic Development Plans, which started in 1962. The strong implementation of the National Family Planning program, together with changes in socio-economic conditions and economic development, resulted in a rapid decrease in population growth.

Between the early 1960s and 1985, survey evidence indicates that the percent of current use of contraception rose from about 12 percent to 77 percent, and in 1988 the total fertility rate fell to 1.6, representing one of the most rapid fertility transitions in the developing world. In the year of 2001, the TFR recorded as 1.30. Now, Korea become one of countries with the lowest fertility. In conjunction with this rapid reduction in fertility, mortality also improved significantly during this period. Thus, Korea has virtually completed the demographic transition from high birth and death rates to low birth and death rates during the same period.

As a result of the rapid decrease in fertility, the decline in the infant mortality rate, and the substantial increases in life expectancy, the percentage of population under the age of 14 is decreasing, while

the percentage of the population aged 65 and over increased significantly. All these factors lead to rapid population aging in Korea. In this context, there has been growing concern over potential problems and needs that may arise from the increase in the number and proportion of the elderly population as related to the rapid socio-economic changes experienced during the past four decades.

This paper aims to review future population projections as well as current population situation since 1960 and to suggest future population policy directions in Korea which will enable Korean people to attain a better quality of life in a sustainable manner.

Ⅱ. Population Dynamics: 1960-2000

1. Change of Population Size and Population Structure

A. Population Size

The Korean population increased from 24.9 million in 1960 to 46.0 million in the year of 2000, which is attributed to the reduced death rate resulting from improved public health measures and better medical facilities. As a result of the continuously declining fertility rates, the absolute size and the relative proportion of the young population below the age of 15 will continue to decrease, while the proportion of the elderly is expected to grow rapidly in the 21st century with prolonged life expectancy due to socio-economic development.

The population growth rate has declined with the sustained low fertility and mortality of Korea. The growth rate per annum was 2.8 percent between 1960～1966, 1.6 percent between 1980～1985 and decreased to 0.6 percent during the late 1990s.

Table 2-1. Changes in Population Size and Age Structure, 1960 ~2000

(Unit: thousand persons, %)

Year	Total Population	0 ~ 14	15 ~ 64	65 +	75 +
1960	24,989	10,153	13,886	935	233
1966	29,160	12,684	15,514	961	257
1970	31,435	13,241	17,154	1,039	289
1975	34,679	13,208	20,264	1,207	339
1980	37,407	12,656	23,305	1,446	401
1985	40,420	12,095	26,575	1,750	526
1990	43,390	11,134	30,094	2,162	667
1995	44,554	10,236	31,678	2,641	834
2000	45,985	9,639	32,973	3,374	1,079
Annual Growth Rate					
1960 ~ 1966	2.8	4.2	2.0	0.5	1.7
1966 ~ 1970	2.0	1.1	2.6	2.0	3.1
1970 ~ 1975	2.1	0.0	3.6	3.2	3.5
1975 ~ 1980	1.6	-0.8	3.0	4.0	3.7
1980 ~ 1985	1.6	-0.9	2.8	4.2	6.2
1985 ~ 1990	1.5	-1.6	2.6	4.7	5.4
1990 ~ 1995	0.5	-1.6	1.1	4.4	5.0
1995 ~ 2000	0.6	-1.2	0.8	5.6	5.9

Source: National Statistical Office, Population and Housing Census Report, Each Year.

As can be seen from the same table, the number of children(0 ~ 14 years old) has continuously decreased; the growth rate per annum was recorded as minus 0.8 percent during the late 1970s and minus 1.2 percent during the late 1990s. Although the working age population(15 ~ 64 years old) has increased, the growth rate per annum has decreased after reaching peak of 3.6% between

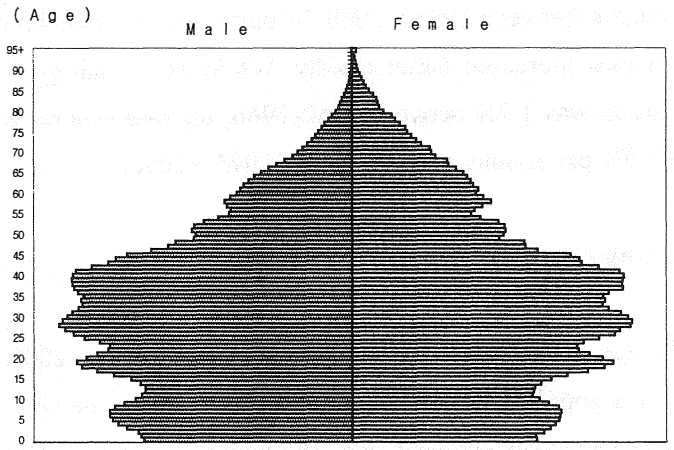
1970～1975. On the other hand, the aged population 65 years of age or over has continued to increase with a high growth rate of 5.6 percent per annum between 1995～2000. In particular, the population of aged 75 or over increased rather rapidly. While the annual growth rate for the group was 1.7% between 1960-1966, the rate was rapidly increased to 5.9% per annum in the period of 1995～2000.

B. Age and Sex Composition

The age and sex structure of the Korea Population in 2000 is readily seen in a population pyramid. The pyramid shows the size of the population of each sex and each age. The general narrowing of the pyramid toward the older ages reflects the mortality of the population as it ages. The width of the pyramid's base reflects the relative size of very young individuals, and hence of the level of fertility in the population.

As Figure 2-1 indicates, the population of Korea has experienced several events, such as turmoil period of 1940s, civil war in 1950, baby boom after the war, the adoption of national family planning program, improving health status, etc. The population pyramid also shows that at the very oldest ages, the greater survivorship of women is clearly apparent. The age structure of the population is directly determined by trends in fertility and mortality. The decling fertility of last 4 decades have impacted the reduction of the size of the very youngest ages.

Figure 2-1. Distribution of the Korea Population by Age and Sex, 2000



The proportion of the population under age 15 and over 65 comprised 45.2 percent of the total population in 1960, meaning the number of dependent people made up almost half the population. The number of children under 15 years old decreased sharply from 42.3 percent of the total population in 1960 to 21.0 percent in 2000, while the population of elderly persons over 65 increased from 3.3 percent to 7.3 percent during the same period. In particular, while the proportion of aged 75 or over was 0.9% in 1960, it reached 2.3% in the year of 2000. Therefore, the proportion of the elderly reached 7.3 percent in 2000, indicating that Korea entered in an aging society.

Age statistics are used frequently to compute a measure of the dependency load that the population of working age must carry. It is a rough indication of the average number of dependents that each 100

working age population would be required to support and care for if the load were equally divided among the working age population.

Table 2-2. Changes in Population Composition, 1960 ~2000.

(Unit: %)

Year	Total	0-14	15-64	65+	75+
1960	100.0	40.6	55.6	3.7	0.9
1966	100.0	43.5	53.2	3.3	0.9
1970	100.0	42.1	54.6	3.3	0.9
1975	100.0	38.1	58.4	3.5	1.0
1980	100.0	33.8	62.3	3.9	1.1
1985	100.0	29.9	65.7	4.3	1.3
1990	100.0	25.7	69.4	5.0	1.5
1995	100.0	23.0	71.1	5.9	1.9
2000	100.0	21.0	71.7	7.3	2.3

Source: National Statistical Office, Population and Housing Census Report, Each Year.

The dependency ratios for the Korea since 1960 are shown in following table. Note that there was a relatively steady decline in the total dependency ratios from 1966 to 2000. For child dependency ratio, the peak is reached in 81.8 in 1966. After then, the child dependency ratio declined steadily. However, aged dependency ratios were increased since 1975 and reached in 10.2 in 2000. The aging index, which is the ratio of aged population to child population, was increased since 1966, indicating that the aged population was increased faster than the child population.

In the year of 2000, the potential support ratio, which implies the number of working age population to care for one aged person, indicated that about 9.8 working age persons are required to support one aged person. The ratio declined from 16.8 in 1975, indicating that the load to care for the aged persons were increasing since 1975.

Table 2-3 Changes in Dependency Ratio, 1960 ~2000

(Unit: %)

Year	Child	Aged	Total	Aging Index	Potential Support Ratio
1960	73.1	6.7	79.9	9.2	14.9
1966	81.8	6.2	88.0	7.6	16.1
1970	77.2	6.1	83.2	7.8	16.5
1975	65.2	6.0	71.1	9.1	16.8
1980	54.3	6.2	60.5	11.4	16.1
1985	45.5	6.6	52.1	14.5	15.2
1990	37.0	7.2	44.2	19.4	13.9
1995	32.3	8.3	40.6	25.8	12.0
2000	29.2	10.2	39.5	35.0	9.8

Source: National Statistical Office, Population and Housing Census Report, Each Year.

C. Population Aging

There has been a significant increase in the number and proportion of the elderly population during the last four decades.

Those aged 65 and over increased from 0.9 million (3.7 percent of the total population) in 1960 to approximately 3.4 million (7.3 percent of the total population) in 2000, which means an increase of about 2.5 million elderly people during the last four decades. Moreover, it is projected that an additional 4.3 million will be added by the year of 2020 so that the number of the elderly will reach approximately 7.7 million and the proportion will be 15.1 percent of the total population by that year.

As can be seen from the table 2-1, the growth rate for the elderly population is much greater than for the young(aged 14 and less), working age population(aged 15 to 64), whose growth rate was negative already or will be negative, reflecting the influence of the rapid reduction in fertility. Unlike the other age groups, the annual growth rate for the elderly is positive and reveals increasing pattern, indicating that the aged population is expected to increase rapidly in the near future.

The aging of the Korean population, which did not begin with the initial decline of fertility in the early 1960s when the birth rate declined slowly, seems to differ from that experienced in Western countries. The effect of the decline in the birth rate during that period was offset by the decline in mortality so that the age structure remained more or less stable. It was only after the late 1970s that aging process of the Korean population was initiated by the drastic decline in fertility which occurred after the baby boom cohort passed its active childbearing period.

2. Change of Vital Statistics

A. Fertility

There was a significant increase in fertility level in Korea during the second half of the 1950s and early half of the 1960s, due mainly to the post-Korean war baby boom; the fertility level during this period was the highest in Korean history. The pro-natal attitude of the government during this period may have attributed to the high level.

The total fertility rate in Korea rapidly decreased from 6.0 in 1960 to a total fertility rate at the population replacement level of 2.1 in 1984. Thereafter, the trend in total fertility rate fluctuated between 1.6 and 1.8, but recently decreased further to 1.30 in 2001. Thus, the fertility level, as measured by the total fertility rate, has decreased by 78 percent in approximately 40 years.

Table 2-4. Trends in Total Fertility Rate(TFR), 1960 ~2001

(Unit: per woman)

Year	1960	1974	1984	1987	1990	1993	1996	1997	2000	2001
TFR	6.0	3.6	2.1	1.6	1.6	1.8	1.7	1.56	1.47	1.30

Source: 1) National Statistical Office, Report on Vital Statistics Based on Vital Registration, each year.

2) Korea Institute for Health and Social Affairs, National Fertility and Family Health Survey, each year.

Socio-economic development factors that affect fertility decline

include rapid urbanization, increase in educational and economic participation of females, increase in educational attainment of both males and females, and reduction in infant and child mortality rates. Other factors having affected the Korean fertility include change in the value or preference for the number of children and/or the family size, change in family structure, including family nuclearization, change in marriage behavior, change in role and function of the family, especially in support for the elderly, etc.

Table 2-5. Trends in Socio-economic Factors Affecting the Decline in Fertility, 1960~2000

	1960	1970	1980	1990	1995	2000
Female education1)(%)	13.0	23.5	45.0	88.2	95.8	98.6
Female LFPR2)(%)	36.3	39.3	42.8	47.0	48.3	48.3
Age at first marriage for females(years)	21.6	23.3	24.1	24.9	25.4	26.2
Urbanization(%)	28	41	57	74	78	80
Infant mortality rate	-	45	17('81)	13('87)	9.9('93)	7.7('96)
Ideal No. of children	-	2.8('76)	2.5('82)	2.1('91)	2.2('94)	2.2('00)
Nuclear families to Relative families	-	71.5	72.9	76.0	79.8	82.0

Note:1) Proportion of females aged 20~24 who have attended secondary school or over.

2) Labor force participation rate.

3) For 1963, among persons 14 years of age or over.

Source: National Statistical Office, Population and Housing Census Report, each year.

National Statistical Office, Annual Report on the Economically

Active Population Survey, each year.

Korea Institute for Health and Social Affairs, 1998 Health and Welfare Indicators in Korea, 1998.

OECD, Health Data, 1998(for 1970, 1981, 1987).

Ministry of Health and Welfare, Korea Institute for Health and Social Affairs, Infant Mortality Rate and Causes of Death of 1993 Birth Cohort in Korea, 1996.

Han, Youngja, et al., Level and Causes of Infant Mortality and Perinatal Mortality for 1996, Ministry of Health and Welfare, Korea Institute for Health and Social Affairs, 1998.

Related with this low level of fertility, imbalance in sex ratio at birth is an important issue in Korea. One noteworthy feature of Korean society is that there are still women who resort to induced abortion, however small the proportion may be, to have a son rather than a daughter. This may be one of the factors that has contributed to the unusually high sex ratio at birth, in particular, of the third and higher order birth. Virtually every couple has wanted to have at least more than one child, hence the sex ratio for the first birth does not deviate much from the usual 105, but beginning with the second birth order, the ratio deviates greatly from the norm as more and more couples decide to abort, either because they "did not want the child", the fetus proved to be of the sex that they did not "favor," or both.

As evident from the following table, the imbalance of the sex-ratio at birth is improving annually, from a peak of 116.5 in 1990 to 110.2 in 2000, but rather than being caused by alleviation of the male preference, this can be explained by the government's strict

enforcement of the medical law; as an effort to prevent selective induced abortions from exacerbating the current sex imbalance, the government made a revision to the then existing medical law in October, 1996.

Under the revised law, those medical doctors who perform abortions for reasons of sex selection have their license immediately revoked, are subject to a fine of up to 10 million Won (US dollars 8,400 equivalent) and/or imprisonment for up to three years.

In addition, there has been a social movement for self-regulation of medical professionals for immoral medical services such as the performance of fetal sex determination procedures. Non-governmental organizations have also campaigned on the negative effect on the sex-imbalance and improvement in social status of women.

Table 2-6. Sex Ratio at Birth by Birth Order, 1980 ~2000

(unit: number of male live births per 100 female live births)

Year	Total	1st	2nd	3rd	4th or over
1980	105.3	106.0	106.5	106.9	-
1985	109.5	106.0	107.8	129.0	146.8
1990	116.5	108.5	117.0	188.9	209.3
1994	115.2	106.0	114.1	202.3	224.9
1995	113.2	105.8	111.7	177.2	204.3
1996	111.6	105.3	109.8	164.0	185.1
1997	108.2	105.1	106.3	133.5	153.9
1998	110.1	105.9	108.0	144.7	153.5
1999	109.6	105.6	107.6	141.9	154.7
2000	110.2	106.2	107.4	141.7	154.9

Source: National Statistical Office, Report on Vital Statistics, each year.

B. Marriage and Marital Status

Change in marital status certainly represents a common and major life cycle transition for the population of the Korea. In the year of 2000, about 30.1% of population aged 15 years old and over were never married, 60.6% were married, 7.4% were widowed, and 1.9% were divorced. The proportion of never married was increased upto 1980, and after then, the proportion reveals decreasing pattern, mainly due to the decreasing number of young eligible population.

Widowhood is a very common status for older women. Because of their tendency to outlive their husbands, about one woman in thirteen is a widow who has not remarried. This proportion has changed comparatively little but showing slightly declining trends. This pattern is related with the increase in the longevity of men and women. Meanwhile, the proportion of divorced persons has increased steadily and dramatically. The proportion of divorced was increased from 0.5% in 1975 to 1.9% in 2000.

Table 2-7. Composition of Population by Marital Status(15 Years Old and Over), 1970 ~2000

(Unit: %)

	Total	Never Married	Married	Widowed	Divorced
1970	100.0	31.0	59.5	8.9	0.7
1975	100.0	34.5	57.0	7.9	0.5
1980	100.0	34.5	57.4	7.6	0.5
1985	100.0	33.8	58.5	7.1	0.6
1990	100.0	32.9	59.1	7.2	0.8
1995	100.0	30.8	60.7	7.4	1.1
2000	100.0	30.1	60.6	7.4	1.9

Source: National Statistical Office, Population and Housing Census Report, each year.

The fertility decline in Korea is also attributed to the increase in proportion of single women and attitude among women that it is necessary to decrease the number of children. The proportion of women who have never been married increased from 57.3 percent for the 20~24 year age group in 1970, to 89.1 percent in 2000. There has also been an increase in the proportion of never-married women for the 25~29 and 30~34 age groups. The proportion for the 25~29 age group was only 9.7 percent in 1970 but was 40.1 percent in 2000, showing an increase of about 30 percent points during this period.

It should be noted that the rapid decline in fertility may be attributed to the delay of marriage and delay of and ceasing to give birth because of increase in unemployment and divorce, reduction in income, etc.

Table 2-8. Trends in Proportion of Single Women, 1970~2000

(Unit: %)

Age	1970	1975	1980	1985	1990	1995	2000
20~24	57.3	62.5	66.1	72.1	80.4	83.3	89.1
25~29	9.7	11.8	14.1	18.4	22.1	29.6	40.1
30~34	1.4	2.1	2.7	4.3	5.3	6.7	10.7

Source: National Statistical Office, Population and Housing Census Report, each year.

Table 2-9. Age at First Marriage, Divorce and Remarriage, 1990~2000

(Unit: %)

	Mean Age at First Marriage		Mean Age of Divorce		Mean Age of Remarriage	
	Male	Female	Male	Female	Male	Female
1990	27.8	24.8	36.8	32.7	38.9	34.0
1991	28.0	24.9	37.2	33.1	39.1	34.4
1992	28.1	25.0	37.4	33.4	39.4	34.6
1993	28.1	25.1	37.9	33.9	39.6	34.8
1994	28.3	25.2	38.1	34.2	39.7	35.0
1995	28.4	25.4	38.4	34.6	40.4	35.6
1996	28.4	25.5	38.6	34.8	40.2	35.5
1997	28.6	25.7	39.1	35.3	40.5	36.0
1995	28.9	26.1	39.8	36.1	41.6	36.9
1999	29.1	26.3	40.0	36.4	42.2	37.5
2000	29.3	26.5	40.1	36.6	42.1	37.5

Source: National Statistical Office, Annual Report on the Vital Statistics,

each year.

The delay of marriage for women were closely related with education and economic activity. The rise in both educational and economic participation of young females has contributed to the increase in age at first marriage of females, it was 21.6 years in 1960, but continuously increased to 24.8 years in 1990 and 26.5 years in 2000. The increase in age of first marriage in Korea has played a more important role in decline in fertility than the decline in fertility rate of married women.

Table 2-10. Mean Age at First and Last Birth among Married Women,2000.

(Unit: years old)

Marriage Cohort	Mean Age at First Birth	Mean Age at Last Birth	Difference
Total	24.9	27.6	3.9
1964-74	21.4	26.3	6.4
1975-84	23.9	27.3	4.7
1985-94	25.6	28.4	4.1
1995-97	26.2	26.9	1.5

Source: Korea Institute for Health and Social Affairs, National Fertility and Family Health Survey, 2001.

In the year of 2000, mean age at first birth was 24.9 years old and mean age at last birth was 27.6 years old for women. The differences between mean age at first and last birth was 3.9 years. According to the marital cohort, married women in recent cohort compared to the older cohort shows higher mean age at first and last

birth and the gap between the first and last birth was narrowing. It takes only 1.5 years for the marital cohort of 1995-97 in contrast with 6.4 years for the marital cohort of 1964-74. This narrowing differences attribute to the lowering the level of fertility.

C. Mortality

1) Infant and Maternal Mortality Rates

With increase in the accessibility, availability, acceptability and affordability of health-care services and facilities that are concomitant with socio-economic development, there has been a drastic decline in mortality in Korea. Specifically, Korea experienced a rapid decrease in the levels of infant and maternal mortality. In the meantime, the structure of cause of death in Korea has changed from communicable acute disease predominance to non-communicable chronic disease predominance, which is attributable to the change in life style with rise in income and health system development. This section discusses the change in the level of infant and maternal mortality rates and in the structure of causes of death and their contributing factors.

Under the current maternal and child health program in Korea, expectant mothers are able to receive diverse pre-natal care at maternity hospitals and, if need be, newborn babies may be subject to congenital metabolic disorder tests, including the congenital thyroid malfunction test. Thus, the maternal and child health program and family planning, together with improvement in nutrition and

advancement in medical technology, have contributed to the decrease in infant mortality rate and maternal mortality rate; the infant mortality rate decreased from 45 per 1,000 live births in 1970 to 7.7 in 1996 and the maternal mortality rate decreased to 20 in 1996.

Table 2-11. Trends in Infant Mortality Rate(IMR) and Maternal Mortality Rate(MMR), 1960 ~1996

	1960	1970	1981[2)]	1985	1991	1995	1996[3)]	2000
Infant Mortality Rate	83	45	17	13	10.0	9.9	7.7	-
Child Mortality Rate								
Male	-	4.7	2.9	-	3.2	2.2	2.0	1.3
Female[1)]	-	4.5	2.9	-	2.6	2.0	1.8	1.2
Maternal Mortality Rate	-	-	-	-	-	20	20	-

Note: 1) Child mortality rate(CMR) is for children under 5 years of age.

2) Child mortality rate is for 1980.

3) Child mortality rate is for 1997.

4) '-' is 'not available'.

Source: Korea Institute for Health and Social Affairs, 1998 Health and Welfare Indicators in Korea, 1998.

National Statistical Office, Social Indicators, 2001.

Han, Youngja, et al. Level and Causes of Infant Mortality Rate and Perinatal Death Rate for 1996, Korea Institute for Health and Social Affairs and Ministry of Health and Welfare, 1998.

2) Changes in Structure of Causes of Death

Regarding the causes of death in Korea, cancer is the most predominant, followed by cerebrovascular diseases, heart diseases, traffic accidents, etc. During the past ten years from 1990 to 2000, the death rate by cancer has had the most considerable increase, with an increase of 11.7 percent point. The following causes of death, which have increased during the past ten years, include diabetes(10.8% point), chronic respiratory disease(6.3% point), suicide(4.8% point), etc. The death rates by hypertensive diseases(-26.7% point), traffic accident(-14.3% point), liver disease(-10.9% point), etc., have decreased during the same period though.

Table 2-12. Trends in Death Rates by Major Cause of Death, 1990 and 2000

(Unit: per 100,000 persons)

1990		2000		Difference
Cause of Death	Rate	Cause of Death	Rate	
Cancer	110.4	Cancer	122.1	11.7
Cerebrovascular Disease	75.6	Cerebrovascular Disease	73.2	-2.4
Heart Disease	47.4	Heart Disease	38.5	-8.9
Traffic Accident	39.7	Traffic Accident	25.4	-14.3
Hypertensive Disease	35.6	Liver Disease	22.9	-10.9
Liver Disease	33.8	Diabetes	22.6	10.8
Diabetes	11.8	Chronic Respiratory Disease	16.8	6.3
Tuberculosis	11.0	Suicide	14.6	4.8
Chronic Respiratory Disease	10.5	Hypertensive Disease	8.9	-26.7
Suicide	9.8	Pneumonia	8.2	-

Source: National Statistical Office, Cause of Death Statistics, 2001.

Among causes of death, the decrease in death rate by tuberculosis can be attributed to the success of the tuberculosis control program, together with improvement in nutrition, thanks to the rise in income. The decrease in death rate due to hypertensive disease, liver disease may be attributed to the change in dietary habits, including drinking and regular examinations, which expedite early detection and treatment of diseases. However, the death rates from cancer, cerebrovascular disease, heart disease, most of which are a result of social stress, drinking and smoking behavior, are still high.

3) Life Expectancy

In Korea, improvement in nutrition, improvement in health status, change in life style, etc, which are often concomitant with socio-economic development, have played a role in reducing mortality, including infant and maternal mortality rates, thereby resulting in a considerable rise in life expectancy.

Table 2-13. Trends in Life Expectancy at Birth, 1971 ~2050

(Unit: years)

	1971	1981	1991	2000	2010	2020	2030	2050
Both sexes	62.3	66.2	71.7	75.9	78.8	80.7	81.5	83.0
Male	59.0	62.3	67.7	72.1	75.5	77.5	78.4	80.0
Female	66.1	70.5	75.9	79.5	82.2	84.1	84.8	86.2
Difference	7.1	8.3	8.2	7.4	6.7	6.5	6.5	6.3

Source: National Statistical Office, Future Population Projections, 2001.

Life expectancy at birth was 62.3 years for both males and females in 1971 but increased to 75.9 years in 2000. During the period from 1971 to 2000, life expectancy at birth increased by 13.1 years or 22.2 percent for males, but increased by 13.4 years or 20.3 percent for females. It has often been mentioned that improvement in nutrition and health status due to economic development and reduction in fertility due to family planning have contributed to the reduction of

mortality for females, but the reduction in level of male mortality has been less due to exposure to difficult and dangerous work, accidents and social stress, which are often associated with smoking and drinking.

3. Change in Working Population

A. Working Age Population

The working age population(aged 15-64) were increased more than 2.4 times from 6.9 million persons in 1960 to 16.7 million persons in 2000. As can be seen from the following table, the proportion of working age population to the total population also increased from 55.6% in 1960 to 71.7% in 2000. However if we look at its proportions by age group, it can be found that the proportion of young population aged 15-24 to the working age population was decreased from 33.6% in 1960 to 22.9% in 2000, whereas the proportion of old population aged 55-64 to the working age population was increased from 8.9% in 1960 to 11.4% in 2000. Also the proportion of population aged 45-54 was increased during the same period. This indicates that even though the number of working age population is increasing, the working age population itself is aging, mainly due to the rapid reduction of fertility.

To find out the changes in the structure of working age population, net entrance rate were applied to the population. The rate can be calculated by the following formular.

Net Entrance Rate = [(P15-24 - P55-64)/P55-64] × 100

Table 2-14. Proportion of Working Age Population, 1960-2000.

(Unit: persons, %)

Age Group	1960	1970	1980	1990	2000
Number	6,893,158	8,529,414	11,669,659	15,179,858	16,692,007
Total	100.0	100.0	100.0	100.0	100.0
15-24	33.6	32.7	35.6	29.4	22.9
25-34	25.0	25.6	24.0	28.4	24.8
35-44	18.8	19.3	18.7	19.1	24.8
45-54	13.8	13.5	13.3	13.9	16.1
55-64	8.9	8.9	8.4	9.2	11.4

Source: National Statistical Office, Population and Housing Census Report, each year.

The rate can be calculated by dividing the difference from number of new entrance (aged 15-24) to the number of exit (aged 55-64) from labor market by the exit (aged 55-64) population times 100. It is a indirect measure of the changes in the labor market and of the population aging of the labor market. If the rate is positive, then it implies that the population in the labor market is increasing and become younger. If the rate is negative, then it implies that the population in the labor market is decreasing and become older.

As can be seen from the following table, it is estimated that the net entrance rate become negative by 2015 for women, and by 2020 for men, indicating that the number of exit from labor market will be

greater than the number of entrance to the market by that year. This implies that the labor force is also in the process of aging and as a result of this, labor shortage will be a big problem for those time.

Table 2-15. Net Entrance Rate to Working Age Population, 1960-2050

(Unit: %)

Year	Total	Male	Female
1960	278.73	320.76	241.75
1966	273.73	316.77	236.16
1970	269.09	304.34	238.18
1975	333.58	376.70	295.73
1980	325.87	375.38	283.76
1985	276.38	340.88	225.70
1990	218.19	263.22	181.08
1995	139.63	164.50	117.69
2000	100.67	119.48	83.44
2005	64.14	75.49	53.28
2010	30.28	40.22	20.60
2015	1.24	8.94	-6.25
2020	-24.00	-19.08	-28.79
2025	-34.13	-30.68	-37.52
2030	-39.84	-37.22	-42.44
2035	-42.66	-40.49	-44.43
2040	-42.34	-41.10	-43.60
2045	-37.66	-37.20	-38.14
2050	-37.10	-37.69	-36.45

Source: National Statistical Office, Population and Housing Census Report, each year.

National Statistical Office, Future Population Projections, 2001.

As of 2000, the rate reveals positive indicating that the population in the labor force is still increasing. For this reason, though many

demographers warned that Korea will experience a serious population aging problem in near future, majority of Korean people may not feel that problem as a real one.

B. Structure of Employed Population

There has been a fluctuations in the economic participation rate, which was 59.0 percent in 1980 and increased slightly to 60.7 percent in 2000. The unemployment rate was also revealed fluctuations with the up and down of the economic situation, such as, the oil crisis and recent economic recession periods, respectively. Specifically, the sharp increase in the unemployment rate of 6.8% in 1998 was due mainly to economic restructuring, after which the rate gradually decreased.

Table 2-16. Economic Activity Status and Participation Rate, 1980-2000.

(Unit: thousand persons, %)

Year	Population 15 years old and over	Economically Active Population	Employed	Unemployed	Non-economically active Population	Labor Force Participation Rate	Unemployment Rate
1980	24,463	14,431	13,683	748	10,032	59.0	5.2
1985	27,553	15,592	14,970	622	11,961	56.6	4.0
1990	30,887	18,539	18,085	454	12,348	60.0	2.4
1995	33,664	20,853	20,432	420	12,811	61.9	2.0
1998	35,362	21,456	19,994	1461	13,906	60.7	6.8
2000	36,139	21,950	21,061	889	14,189	60.7	4.1

Source: National Statistical Office, Annual Report on Economically Active Population, each year.

Until 1997, the economic growth rate in Korea has been maintained at a high level since the early 1960s, with the launching of the economic development plan. The gross domestic product growth rate decreased to -6.7 percent in 1998 due to the economic crisis, which started at the end of 1997. This high economic growth rate resulted in a considerable increase in per capita gross national income; it was only 79 US$ in 1960, at current prices(per capita gross national produce), but increased to 10,823 US$ in 1995 and 11,380 US$ in 1996(per capita gross national income at current prices). However, per capita gross national income decreased to 6,744 US$ in 1998 due to the economic recession and recovered to 9,770US$ in 2000.

Table 2-17. Trends in Economic Growth and Employment Structure, 1960 ~2000

	1960	1970	1980	1990	1995	1998	2000
GDP Growth Rate (at 1995 constant prices)(%)	-	8.5[1)]	6.2[2)]	9.2[3)]	8.9	-6.7	9.3
Per capita GNI(US$)	79	248	1,597	5,886	10,823	6,744	9,770
Economic Participation Rate(%)	55.3('63)	55.9	57.1	60.0	62.0	60.7	60.7
Unemployment Rate(%)	8.2('63)	4.5	5.2	2.4	2.0	6.8	4.1
Employment Structure by Industry	100('63)	100.0	100.0	100.0	100.0	100.0	100.0
Primary(%)	63.1	50.4	34.0	18.3	12.5	12.4	10.9
Secondary(%)	8.7	14.3	22.6	27.3	23.6	19.6	20.2
Tertiary(%)	28.2	35.2	43.4	54.4	64.0	68.0	68.9

Note: 1) for 1971. 2) for 1981. 3) for 1991.

Source: National Statistical Office, Monthly Statistics of Korea, 2002.9.

There has been a steady increase in the economic participation rate, which was 55.3 percent in 1963 and increased to 62.0 percent in 1995. However, it decreased to 60.7 percent in 1998 and maintained the same level in 2000. The unemployment rate was very high in the early stage of economic development in Korea such as 8.2% in 1963 but decreased significantly to 2.0 percent in 1995. The exceptions were for 1980 and 1998 which were the oil crisis and recent economic recession periods, respectively. Specifically, the sharp increase in the unemployment rate in 1998 was due mainly to economic restructuring, after which the rate gradually decreased to 4.1 percent in 2000.

In the employment structure by industry, the employment proportion accounted for by agriculture, forestry, and fishing has rapidly decreased from 63.1 percent in 1963 to 10.9 percent for 2000; the proportion by mining and manufacturing increased continuing up to the early 1990s and thereafter decreased to 20.2 percent in 2000; and the proportion by social overhead capital(SOC) and other services continually increased to 68.9 percent in 2000.

4. Urban and Rural Population

As can be seen from the following table, the migration flow in Korea has been characterized by excessive rural-to-urban migration during the early phase of development and predominant urban-to-urban migration, since the 1980s, after the significant depletion of youth in rural areas due to migration selectivity. Such migration flows have resulted in an excessively high concentration of

population in large cities (metropolitan cities), specifically the capital area including Seoul, Inchon and Kyonggi-do (province). The most important reasons for moving from rural area to urban area have been education, job- and family-related affairs.

Such flows in migration movement, together with expansion of urban areas and reclassification of rural areas into urban areas, have accelerated urbanization in Korea. The urbanization rate, which is denoted as the proportion of population in urban areas(Dongs in cities including metropolitans) to the total population are in following table, increased from 28.0 percent in 1960 to 79.7 percent in 2000.

Table 2-18. Trends in Migration Flows, 1965 ~1995

(Unit: thousand persons, %)

	1965~70	1970~75	1975~80	1980~85	1985~90	1990~95
Total	4,395	5,151	7,618	8,366	9,816	10,088
	(16.2)	(16.9)	(22.7)	(22.8)	(24.5)	(24.5)
R→U	1,827	1,754	2,524	2,424	2,329	1,232
	(11.5)	(11.1)	(17.4)	(18.9)	(22.3)	(13.1)
U→U	1,532	2,257	3,855	4,584	6,376	8,009
	(13.6)	(15.5)	(20.1)	(19.2)	(21.5)	(24.0)
U→R	387	558	681	889	743	694
	(3.4)	(3.8)	(3.6)	(3.7)	(2.5)	(3.1)
R→R	649	563	558	469	368	153
	(4.1)	(3.6)	(3.9)	(3.7)	(3.5)	(2.4)

Note: 1) ( ) is migration rate.

Source: National Statistical Office, Population and Housing Census, each year.

Table 2-19. Trends in Urbanization Rate, 1960 ~2000

(Unit: %)

Year	1960	1970	1980	1985	1990	1995	2000
Rate(%)	28.0	41.1	57.2	65.4	74.4	78.5	79.7

Source: National Statistical Office, Population and Housing Census, each year

Along with the rapid urbanization, in particular migration selectivity, the age structure of population between urban and rural is quite different. In 1960, there was not much differences in age composition between urban and rural. For example, while the higher proportion of working age population was found in urban area, the proportion of youth and the elderly were higher in rural areas than those in urban area.

Forty years later, only the proportion of the elderly to the total population was higher in rural area than that in urban area, due to the selective migration which was occurred during the last four decades. As a result of this, the rural area had already become an aged society, which means that the proportion of the elderly is greater than 14 percent, while urban area is going to be an aging society, which means that the proportion of the elderly is less than 7 percent. This implies that the problem in rural area is quite similar to the problem of population aging.

Table 2-20. Population Structure by Urban and Rural Residence, 1960 and 2000

(Unit : Thousand persons, %)

	1960			2000		
	Total	Urban	Rural	Total	Urban	Rural
Whole Country	24,989	6,997	17,992	45,985	36,642	9,343
(%)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
0-14 years old	10,153	2,735	7,419	9,639	7,897	1,742
(%)	(40.6)	(39.1)	(41.2)	(21.0)	(21.6)	(18.6)
15-64 years old	13,901	4,089	9,812	32,973	26,743	6,230
(%)	(55.6)	(58.4)	(54.5)	(71.7)	(73.0)	(66.7)
65 years old +	935	174	761	3,372	2,001	1,371
(%)	(3.7)	(2.5)	(4.2)	(7.3)	(5.4)	(14.7)
Index of Aging	9.2	6.4	10.3	35.0	25.3	78.7

Source: National Statistical Office, Census Population Report, Each Year.

Ⅲ. Population Projections in Future: 2000～2050

The total fertility rate decreased further to 1.30 in 2001, although the official population projection(National Statical Office, 2001) assumed the total fertility rate would remain 1.4 by 2050. The other assumptions such as mortality and migration are in accordance with actual change. Based on this assumption, it is projected that the annual population growth rate will be 0.38 percent in the year of 2010 and 0.04 percent by 2020. A zero population growth rate will be reached in 2023 with a population size of 50.7 million, and thereafter the Korean population will decrease. The projected total population will be 44.3 million in the year of 2050.

As can be seen from Table , the trend in the number of children(0～14 years old) has continuously decreased; the proportion to total population was 21.1 percent in 2000 and will be continuously decreased to 10.5 percent in 2050. The absolute size of the working age population will start decreasing after reaching its peak(36.4 million) in 2016 as the declining youth population enters working age. The aged population 65 years of age or over has continued to and will increase. The proportion of the elderly reached 7 percent in 2000, indicating that Korea became an ageing society. It will double in 2019, resulting in Korea becoming an aged society.

Table 3-1. Projected Total Population and Population Growth Rates, 2000-2050

(Thousand Persons, %)

	2000	2010	2020	2030	2040	2050
Total Population	47 008	49 594	50 650	50 296	48 204	44 337
Annual Population Growth Rate	0.71	0.38	0.04	-0.24	-0.64	-1.04
Total	100.0	100.0	100.0	100.0	100.0	100.0
% 0-14 Years Old	21.1	17.2	13.9	12.4	11.5	10.5
% 15-64 Years Old	71.7	72.1	71.0	64.6	58.4	55.1
%65 Years Old or Over	7.2	10.7	15.1	23.1	30.1	34.4

Source: National Statistical Office, Future Population Projections, 2001.

Unlike the Western experience, the aging process, once begun, proceeded more rapidly. It took about more than 40 years for Western countries to increase their proportion of older people from around 7 to 14 percent, but Korea will increase its proportion of older people to the same level in less than half that time, that is only 19 years from 2000 to 2019, which is much faster than the case of Japan, where the duration was 24 years.

Table 3-2. The Tempo of Population Aging in Some Selected Countries

	Year			Years	
	7%	14%	20%	7%→14%	14%→20%
Korea	2000	2019	2026	19	7
Japan	1970	1994	2006	24	12
Germany	1932	1972	2012	40	40
England	1929	1976	2021	47	45
Italy	1927	1988	2007	61	19
USA	1942	2013	2028	71	15
France	1864	1979	2020	115	41

Source: National Statistical Office, Future Population Projections, 2001. 12.

Thus, Korea will face accelerated population ageing. Such a change in population structure will eventually cause excessive burden of the working population because of increasing social security expenditures, as can be seen in most developed countries.

The dependency ratios for the Korea since 2000 are shown in following table. Note that there will be a relatively steady increase in the total dependency ratios from 2000 to 2050. While the child dependency ratio will decline steadily, the aged dependency ratios will increase significantly from 10.2 in 2000 to 62.5 in 2050. The aging index, which is the ratio of aged population to child population, will increase. From 2019, the aged population will be more than the population of the child.

The potential support ratio, which implies the number of working age population to care for one aged person, indicated that about 9.8 working age persons are required to support one aged person in the year of 2000. The ratio will decline to 1.6 in 2050, indicating that the

load to care for the aged persons will be increasing.

Table 3-3. Changes in Dependency Ratio, 2000 ~2050

(Unit: %)

Year	Child	Aged	Total	Aging Index	Potential Support Ratio
2000	29.2	10.2	39.5	35.0	9.8
2010	23.9	14.8	38.8	62.0	6.7
2020	19.6	21.3	40.9	109.0	4.7
2030	19.1	35.7	54.9	186.6	2.8
2040	19.6	51.6	71.2	263.2	1.9
2050	19.0	62.5	81.5	328.4	1.6

Source: National Statistical Office, Future Population Projections, 2001.

The potential support ratio, which was estimated by United Nations, reveals that Korea will be similar with other selected countries in 2050. However, as mentioned before, the new population projection reveals that the potential support ratio for Korea in 2050 will be 1.60, which is the lowest among the selected countries.

Table 3-4. Potential Support Ratio for Selected Countries

Country	1998	2050	Country	1998	2050
Korea	10.03	2.40	Russia	5.57	2.41
France	4.19	2.26	Germany	4.08	1.75
Italy	4.42	1.52	England	4.07	2.36
Japan	4.26	1.71	USA	5.37	2.57

Source: UN, Replacement Migration: Is It A Solution to Declining and Ageing Populations?, ESA/P/WP. 160, NY, 2000.

Ⅳ. Change of Household Structure

As the Korean society becomes industrialized and urbanized, the family as a social unit undergoes change in their structure. Traditionally, family system in Korea was affected by the Confucianism. Some characteristics of the Confucian philosophy related with marriage and the family are universality of marriage; prevailing custom of early and arranged marriage; strong social pressure for having sons; low status of women, etc. However, as the Korean society have experienced rapid transformation from traditional agrarian society into modern industrializing society, every aspects of Korean life becomes dramatically changing, including family life. Three major trends in structure of the family were observed during the last several decades, namely, smaller size of household, increasing trend of nuclear family, and, finally, increasing trend of one generation household.

1. Number of Households and Household Members

The number of households increased more than double from 6,648,000 in 1975 to 14,312,000 in 2000. Reduction in number of household members is observed. The proportion of one person households reveals increasing trend, while the proportion of households with 6 persons or more decreased significantly. The

proportion of one person households was increased from only 4.2 percent in 1975 to 15.5 percent in 2000. Two person households, three person households and four person households reveal increasing trends, while those of five person households and households with six and more persons were decreased. For example, households with 6 persons and more was 40.7 percent in 1975 to 3.3 percent in 2000. As can be seen from the following table, average number of household members in Korea were as high as 5.0 persons per household in 1975. However, household size continue to decrease to 3.7 in 1990; and to 3.1 in 2000. Therefore, declining household size is important trends observed during the last three decades.

Table 4-1. Ordinary Households by Number of Household Members

(Unit: Thousand Households, %)

	Total ordinary Households	Number of Household Members							
		Total	one	Two	Three	Four	Five	Six+	Av.Size
1975	6,648	100.0	4.2	8.3	12.3	16.1	18.3	40.7	5.0
1980	7,969	100.0	4.8	10.5	14.5	20.3	20.0	29.8	4.5
1985	9,571	100.0	6.9	12.3	16.5	25.3	19.4	19.6	4.1
1990	11,355	100.0	9.0	13.8	19.1	29.5	18.8	9.8	3.7
1995	12,958	100.0	12.7	16.9	20.3	31.7	12.9	5.5	3.3
2000	14,312	100.0	15.5	19.1	20.9	31.1	10.1	3.3	3.1

Source: National Statistical Office, Population and Housing Census Report, Each Year.

2. Type of Households

The proportions of nuclear families were dominant type of household in Korea. The table reveals that proportions of nuclear families were increased from 70.7 percent in 1975 to 82.0 percent in 2000. Among the nuclear family, the type of married couple with child(ren) was relatively stable, while the type of married couple increased from 5.0 percent in 1975 to 14.8 percent in 2000. These figures suggest that nuclear family type is dominant and increasing trends in Korea, while extended family type were decreased from 11.4 percent in 1975 to 7.9 percent in 2000.

Table 4-2. Relative Households by Type of Family

(Unit: Thousand Households, %)

	Total Relative Households	Total	Nuclear Family					Other Type
			Sub-total	Married Couple	Married Couple with Child(ren)	Single Parent with Child(ren)	Extended Family	
1975	6,367	100.0	70.7	5.0	55.6	10.1	11.4	17.9
1980	7,470	100.0	74.0	6.5	57.4	10.1	11.2	14.8
1985	8,751	100.0	75.3	7.8	57.8	9.7	10.7	14.0
1990	10,167	100.0	76.0	9.3	58.0	8.7	10.3	13.8
1995	11,133	100.0	79.8	12.6	58.6	8.6	9.1	11.2
2000	11,928	100.0	82.0	14.8	57.8	9.4	7.9	10.1

Source: National Statistical Office, Population and Housing Census Report, Each Year.

3. Type of Households with the Elderly

Traditionally, the aged in Korea are supplied with economic and emotional needs by their families as a result of the high value placed on filial duty in the past and they exerted absolute authority over the younger generation based on Confucian philosophy. As Korean society becomes industrialized and urbanized, the family as a social unit is undergoing structural changes. Also the traditional, family value system, i.e., familial duty and family care for the elderly, is gradually disappearing. Related with these social changes, the elderly in Korea are losing power over their children and becoming less able to adjust to the rapidly changing socioeconomic environment.

The proportion of one generation families for both male and female elderly reveals increasing trend. However, those of one generation families increased more rapidly for the female elderly than that of the male elderly. The proportions were increased only 2.8 percent point for male elderly during the period of 1990-2000, whereas those were 10.2 percent point for the female elderly. Therefore, 22.4 percent of the female elderly was living in one-person households, while only 6.2 percent of the male elderly was living in one-person household, reflecting the sex-differentials in household type. Furthermore, the traditional three generation households reveals decreasing trends both for male and female elderly. Therefore, increasing trend of one generation families, particularly for the female elderly, reveals the one of the changing patterns in family structure in Korea.

Table 4-3. Type of Households with the Elderly, 1990 - 2000

(Unit: %)

	Total			Males			Females		
	1990	1995	2000	1990	1995	2000	1990	1995	2000
One Person Households	8.9	13.3	16.2	3.4	4.9	6.2	12.2	18.2	22.4
Non-relative Households	0.7	0.8	0.4	0.4	0.8	0.3	0.8	0.8	0.5
One Generation	16.9	23.3	28.7	29.4	39.9	45.8	9.4	13.5	18.1
Two Generation	23.4	23.0	23.9	29.4	26.0	25.9	19.7	21.2	22.6
Three Generation	47.6	38.4	29.9	35.9	27.6	21.2	54.7	44.7	35.3
Four Generation	2.0	1.2	0.9	1.1	0.7	0.5	2.5	1.6	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: National Statistical Office, Population and Housing Census Report, Each Year.

In particular, the marital status for the elderly aged 65 and over was presented in the following table. It was found that the proportion of married was increased from 52.8% in 1970 to 67.0% in 2000, whereas the proportion of widowed was decreased from 46.7% in 1970 to 31.6% in 2000. With the age of the elderly increases, the proportion of married is also increased, while the proportion of the wodowed is deceased.

For male elderly aged 65-69, about 90.9% was married, while for female elderly for the same age, the proportion of married was 48.8%, indicating that the sex differentials in mortality. The proportion of married reveals more apparent pattern among the elderly with ages 80 and over. About 65 percent of male elderly with the age of 80 and over were married in 2000, while that of female elderly was only 7.4

percent. These differences in the proportion of married between male and female is related with the differences in the care resources for the elderly.

Table 4-4. Marital Status of The Elderly by Age and Sex, 1970-2000

(Unit: %)

	Married				Widowed			
	1970	1980	1990	2000	1970	1980	1990	2000
Total								
65-69	52.8	57.0	59.3	67.0	46.7	42.7	40.2	31.6
70-79	36.9	40.6	43.9	47.2	62.7	59.1	55.8	51.8
80+	18.5	19.0	20.8	23.6	81.3	80.8	79.0	75.8
Male								
65-69	82.9	87.3	89.0	90.9	16.6	12.3	10.5	7.7
70-79	69.6	76.7	80.7	84.3	30.0	23.0	19.0	14.7
80+	45.6	52.5	59.4	65.0	54.2	46.9	40.2	34.3
Female								
65-69	31.3	35.0	38.0	48.8	68.3	64.7	61.5	49.8
70-79	17.8	20.2	22.1	25.6	82.0	79.5	77.5	73.4
80+	6.5	7.7	7.6	7.4	93.2	92.0	92.2	92.0

Source: National Statistical Office, Population and Housing Census Report, each year.

Ⅴ. Conclusion

Decline in fertility and rise in life expectancy has resulted in decline in the population growth rate and it was officially projected to reach a zero population growth rate in 2023. As a result, the absolute size as well as the proportion of children to the total population will continue to decrease, the absolute size of the working age population will start decreasing after reaching its peak(36.4 million) in 2016, and the aged population 65 years of age or over will continue to increase with a high growth rate. The proportion of the elderly reached 7 percent in 2000, indicating that Korea was already an ageing society, and it will double in 2019, resulting in Korea becoming an aged society.

The number of elderly suffering from chronic diseases, dementia and who are bed-ridden, is increasing with rapid population ageing in Korea. As a result, population ageing has increased the demand for welfare and medical care for the elderly. The burden of taking care of the aged is becoming pressing due to the rapid increase in the number and proportion of the elderly in Korea's population. The majority of the aged in Korea prefer support to be rendered by their families. Among the aged who need care, the family is still one of the primary concerns in Korean society. This tendency was reinforced because of the inadequacy of the social support system.

Thus, the government has put efforts towards preventing family

dissolution and protecting vulnerable people undergoing family dissolution. Along with this, the government needs to support and develop the appropriate mechanisms to assist vulnerable people including dependent elderly, etc., who are requiring more formal support. The welfare for the aged should be emphasized.

Some policy measures for the low fertility and rapid population aging can be listed as follows; first, population policy should be reconsidered to increase the Korean population through providing services, for example, child allowance, child-care services, and other pro-natal measures, etc.; second, policies that enable families to maintain their economic security are needed; third, the Government should share the responsibilities of caring for the elderly with the individual families by strengthening social care services for the elderly, such as home help services, day care centers and short-term care centers, etc.; finally, the Government should consider the long-term care insurance programs to cope with the rapid population aging.

References

Han, Youngja, et al., Level and Causes of Infant Mortality and Perinatal Mortality for 1996, Ministry of Health and Welfare, Korea Institute for Health and Social Affairs, 1998.

Korea Institute for Health and Social Affairs, 1998 Health and Welfare Indicators in Korea, 1998.

Korea Institute for Health and Social Affairs, National Fertility and Family Health Survey, each year.

Ministry of Health and Welfare, Korea Institute for Health and Social Affairs, Infant Mortality Rate and Causes of Death of 1993 Birth Cohort in Korea, 1996.

National Statistical Office, Annual Report on the Economically Active Population Survey, each year.

National Statistical Office, Cause of Death Statistics, 2001.

National Statistical Office, Future Population Projections, 2001.

National Statistical Office, Monthly Statistics of Korea, 2002.9.

National Statistical Office, Population and Housing Census Report, each year.

National Statistical Office, Report on Vital Statistics, each year.

National Statistical Office, Social Indicators, 2001.

OECD, Health Data, 1998(for 1970, 1981, 1987).

UN, Replacement Migration: Is It A Solution to Declining and Ageing Populations?, ESA/P/WP. 160, NY, 2000.