

**The Population Projections for
The Republic of Korea :
1980—2000**

- 1. Introduction**
 - 2. Base Data**
 - 3. Assumptions**
 - 4. Projection of Population
and Discussion of Results**
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Abstract

This study provides a realistic population projection for the Republic of Korea for 1980-2000, by using the most recent demographic data. The projections are done by using component method. The adjusted age and sex distribution of the population as on 1st July, 1980 is taken as the base population. Three sets of fertility assumptions are used, producing three projections; "High", "Medium", and "Low". The tempos of decline for ASFR are estimated separately for each age group and also separately for each specified period of 5 years interval. For ascertaining the fertility assumptions, past trends of fertility for Korea has been studied and compared with those of the countries of the East-Asia under the influence of the Chinese culture. The future population of Korea is likely to grow by 32.5 percent under "Low", 35.3 percent under "Medium" and 50.7 percent under "High" projections schemes within 20 years period from 1980, and the density will grow from 404 per square kilometer in 1980 to 536 in 2000 even under the assumption of "Low" projection with maximum decline in fertility.

1. Introduction

There is increasing demand by both government and private organizations for estimates of future populations to be used in the planning of housing, education, and for purpose of social services. Since the demographic situations in respect of fertility, mortality and migration which would determine the future population might differ from

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country to country; it is desirable to have separate population projections for each country. Estimates regarding the size and composition of future population have to take into consideration the past and current demographic trends. For this regard, the projections are made again as soon as possible after the new census is conducted.

So far, a number of projections of the future population of the Republic of Korea (hereafter refer to Korea) have been made by several individual demographers, the government (official projection), and U.N. These projections almost indicate the future estimates of the total population but differ in their details of population projected the input and the assumptions and hence in respect of the characteristics of the projected population. Many of the latest projections¹⁻⁴⁾ utilised the age-data of 1970 or 1975 census as the base population and, the previous experience of fertility and mortality trends. It may be worth while to mention that the past trends of fertility decline in Korea may not lead to future trends beyond 10 years or so under fast changing conditions of fertility.

In this study an attempt has been made to develop a more realistic population projection by using the most recent data of 1980 census, and data from the 1976 national fertility and family planning evaluation survey and the 1979 Korea contraceptive prevalence survey.

2. Base Data

In Korea, the digit preference in reporting age is found to be almost negligible in all census from 1925 to 1970 as seen from Myers Index and Joint Scores, where the average of Myers' Index is approximately 3.0 as seen in Table 1, and the Joint Scores are 19.24, 18.16, 27.32 in 1925, 1944 and 1970 respectively.⁵⁾

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- 1) ESCAP, *Future Prospects of Population Trends: Country Monograph Ser. No. 2, Population of the Republic of Korea*, ESCAP, U.N., 1975, pp. 217-243. 2)
 - 2) Amy Ong Tsui et al., *Illustrative Functional Projections 1975-2000* (South Korea), CFSC, The University of Chicago, 1979.
 - 3) U.N., *World Population Prospects as Assessed in 1980*, U.N., New York, 1981.
 - 4) B.O.S. in Korea, *Population Projection for Korea 1980-2000*, Bureau of Statistics, Economic Planning Board, Republic of Korea 1980.
 - 5) Tai Hwan Kwan, *Evaluation of Adequacy and Accuracy of Census Data, A Study of the Korean Population*, The Population and Development Studies Centre (PDSC), Seoul National University, 1974, p. 19.

Table 1. Myers' Index for Population of Korea Enumerated in Censuses from 1925-70

	1925	1930	1935	1940	1944	1955	1960	1965	1970
Male	3.88	3.06	2.48	2.12	2.98	3.95	3.30	1.39	3.42
Female	4.22	2.93	2.74	2.33	2.97	2.08	4.09	2.32	2.62

One of the reasons for this lack of digit preference in Korea might be that the ages were reported by respondents and rarely had to be guessed by the enumerators. Each person in Korea is named after an animal signifying the year of birth. Moreover, literacy rate in Korea is very high (for male 95%, female 83% in 1970).⁶⁾ The total enumerated population of Korea is 37,448,836 on Nov. 1, 1980 and adjusted population is 39,782,000 on July 1, 1980 by taking into account 6.4 percent of net under enumeration in the 1980 Census.⁷⁾ The adjusted age sex distribution of population of Korea has been determined on the basis of projected age sex distribution of 1980 population of Korea by the government. The actual graduated population in each age group are defined by multiplying the total population of 1980 census and the projected percentage distribution of sex by the age group.⁸⁾ The graduated population of 1980 is given in Table 2.

3. Assumptions

Three different rates of assumptions for fertility decline are used, producing three projections; "High", "Medium" and "Low". For mortality decline in future only one assumption is made. The rationale for the three assumptions are given below.

3.1 Fertility

3.1.1 Review of the past trend of age- age-specific fertility rates for Korea

In Korea, fertility has been declining over since the 1960's due to fast socio-economic

6) Korean Institute for Family Planning (KIFP), *Statistics on Population and Family Planning in Korea* Vol. 1, 1978, p. 286.

7) B.O.S. in U.S.A., *Demographic Estimates for Countries with a Population of 10 Million or More*, 1981, U.S. Department of Commerce, Bureau of the Census, p. 77.

8) B.O.S. in Korea, *op. cit.*, Economic Planning Board, Republic of Korea, 1980.

Table 2. 1980 Graduated Population

Age	Male		Female	
	Percent Distribution	Population ('000)	Percent Distribution	Population ('000)
0—4	5.78%	2,299	5.48%	2,180
5—9	5.79	2,303	5.41	2,152
10—14	5.98	2,379	5.56	2,212
15—19	6.34	2,522	5.88	2,339
20—24	5.56	2,212	5.20	2,069
25—29	4.19	1,667	3.99	1,587
30—34	3.23	1,285	3.15	1,253
35—39	2.99	1,189	2.88	1,146
40—44	2.83	1,126	2.74	1,090
45—49	2.21	879	2.35	935
50—54	1.69	672	1.91	760
55—59	1.35	537	1.54	613
60—64	1.01	402	1.15	458
65+	1.57	625	2.24	891
Total	50.52	20,097	49.48	19,685

Total Population 39,782,000

development, the well developed family planning program launched by government, and the wide spread of induced abortion.

Table 3 shows that in the last 20 years, the total fertility rate declined from 6.3 to 3.2 and the age specific fertility rates declined in all age categories.

The ASFR for the 15—19 and 20—24 age groups declined up to 1968. A substantial portion of the decline at the younger ages is attributed to the gradual rise in the age at first marriage. While after 1970 the AFR for 15—19 is almost stationary, and that for 20—24 is very slightly declining. While the singulated mean age at first marriage for females in 1935 was 17, it increased to 23 in 1970, and for males it increased from 21 in 1935 to 27 in 1970. The singulate mean age at marriage has been almost

Table 3. The Trend of Age-Specific Fertility Rates and Total Fertility Rate⁹⁾

	1957 ¹⁰⁾	1960	1962 ¹⁰⁾	1966	1968	1970	1973	1974	1976
15—19	38	37	20	15	7	13	10	11	10
20—24	308	283	255	205	146	168	146	159	147
25—29	335	330	351	380	301	278	301	276	275
30—34	270	257	274	242	201	189	220	164	142
35—39	194	196	189	150	120	101	88	74	49
40—44	96	80	92	58	65	39	19	29	18
45—49	18	14	17	7	7	7	3	3	1
TFR	6.3	6.0	6.0	5.4	4.2	3.9	3.9	3.6	3.2

stationary since 1970.¹¹⁾ Of all the age categories, the ASFR of the 25—29 group has always been the highest, though even the ASFR for these women declined from 335 in 1967 to 275 in 1976, a 17.9 percent decline during this period; For those aged over 35 years, the ASFR declined by about 57 percent from 1960 to 1977, mainly due to the vigorous family planning programme. The ASFR for the 30-34 age category is very pronounced, particularly in recent years, which seems related to the tendency among women of this age to terminate fertility as soon as possible. The family planning practice rate among the women of this age category is also very high. It is expected that the ASFR for the 30—34 age group will further decline as in the case of the age groups 35—39.

The recent trend of contraceptive practice rate by age group (see Table 4)¹²⁾ indicates that the contraceptive practice among the eligible women increased from 25 percent in 1971 to 54.5 percent in 1979. For the women of age group 15—24 increased slightly from 7 percent in 1971 to 18.3 percent in 1979, the rate for 25—29 age group women reached' at about 70 percent in 1979, indicating a very high level of acceptance indeed.

9) Byung Tae Park, et al., *The 1976 National Fertility and Family Planning Evaluation survey*, Korean Institute for Family Planning (KIFP), 1979, p. 113 (except 1957, 1962).

10) KIFP, *op. cit.*, 1978, p. 143.

11) Byung Tae Park, et al., *op. cit.*, p. 74.

12) Kap Suk Koh and Hee Soon Hahm, "1979 Korean Contraceptive Prevalence Survey," *The Journal of the Population Association of Korea*, Vol. 4, No. 1, 1981, pp. 89-103.

Table 4. Contraceptive Practice rate by Characteristics of Women: 1971-1979

Age	1971	1973	1974	1976	1978	1979
15—24	7	12	13	15.4	16.1	18.3
25—29	15	28	29	31.9	38.0	40.9
30—34	28	38	45	55.8	62.0	68.5
35—39	38	35	54	61.5	66.3	71.9
40—44	27	39	38	45.1	46.9	53.3
Total	25%	36%	37%	44.2%	48.8%	54.5%

According to Cho, the countries under Chinese cultural influence (in East Asia) tend to have a similar pattern of fertility decline, the difference being in the tempo of the decline.¹³⁾

And Appendix I shows the annual percent changes of ASFR by the country relating to the changing level in terms of total fertility rate.

These trends have also been graphically analyses of these tables following points emerge (see Appendix III).

- 1) For Korea, Taiwan and Hong-Kong, the patterns of the decline of ASFR by the equennial age group during the period of 1960 to 1974 are following the pattern of Japan previously during the period of 1947 to 1961.
- 2) The tempo of the decline of ASFRs is different for each age group. For instance, the tempo of decline in ASFR for 30—34 and 35—39 is that of very rapid decline than the younger age group, and the tempo of 25—29 age group is very slightly declining.
- 3) The tempo of the decline of TFR by the age group, by the country is very rapid by reaching up to about the level of 2.4, and after reaching 2.04 the tempo is almost stationary.
- 4) The level of ASFRs for these countries is different according to the age-groups; for instance, the ASFRs, for 15—19 and 20—24 age groups for Korea are lower than those for Taiwan and Hong-Kong; while other ASFRs for Korea are higher in magnitude.

13) ESCAP, *op. cit.*, p. 217.

3.1.2. Fertility Assumptions for 1980–2000

It is noteworthy to mention that the TFR for Korea has been falling successively over past 20 years. If the present trend in the TFR continues in the future, it might reach a level of 2 in the early 1980's. Three assumptions determining the causes of future fertility (ASFR changes) that is "high", "medium" and "low" are given in the Table 5.

1) "High" Constant Fertility Assumption

Table 5 gives the set of ASFRs in future under the above three assumptions.

Table 5. Assumptions of Age-Specific Fertility Rate for Korea, 1980–2000

	Age Group							Total Fertility Rate
	15—19	20—24	25—29	30—34	35—39	40—44	45—59	
For "High" Projection								
1980—2000	9.7	144.7	271.2	137.6	45.8	16.8	0.9	3.13
For "Medium" Projection								
1980—1985	9.2	133.4	257.6	106.6	27.5	10.1	0.9	2.73
1985—1990	8.7	123.0	231.8	90.6	23.4	8.6	0.8	2.43
1990—1995	8.3	113.4	208.6	81.5	21.1	7.7	0.8	2.21
1995—2000	7.9	104.6	193.0	75.4	19.5	7.1	0.8	2.04
For "Low" Projection								
1980—1985	9.0	130.2	250.9	96.3	22.9	8.4	0.9	2.59
1985—1990	8.3	117.2	219.5	79.4	18.9	6.9	0.8	2.26
1990—1995	7.7	105.5	192.1	69.5	16.5	6.0	0.7	1.99
1995—2000	7.1	105.5	192.1	69.5	16.5	6.0	0.6	1.98

It is assumed that the ASFR by age group will remain at the same level as in 1977 up to the year 2000. This projection is very useful for evaluation of cost-benefit of family planning programme in the future.

2) "Medium" Moderate Decline in Fertility

It is assumed that the TFR will fall successively to a level of 2 by 1997. The tempos of decline for ASFR by age-group are estimated separately for each age group (see the Appendix II).

3) "Low" Rapid Decline in Fertility

The TFR will fall more rapidly than "Medium" level to a level of 2 by 1992 and after

will remain as the same level up to 2000. The faster tempos of decline for ASFR by age-group are also estimated separately for each age-group (see the Appendix II).

3.2 Mortality

As here by of the past trends of the expectation of life at birth for Korea (e_0^0) during 1955–75, it indicated that it is rising steadily from 51.1 years in 1955–60 to 66.2 years in 1975 for the male and from 54.1 in 1955–60 to 70.6 in 1975 for the female.¹⁴⁾

For future trend of mortality in Korea we adopt the following figures applied by ESCAP.

Table 6. Projected Expectation of Life at Birth by Sex for Korea 1980–2000

Period	Male	Female
1980–1985	68.0	73.0
1985–1990	69.8	74.8
1990–1995	70.8	75.8
1995–2000	71.3	76.3

Source: ESCAP, *op. cit.*, pp. 222-223.

3.3 Migration

In Korea, international migrants have been increasing, as present the net international emigrants is estimated as 25,000 persons every year (0.6 percent of the total population of Korea). The age distribution of these emigrants are not available to us. Hence we assume “nil” migration for Korea for getting future estimates of population which we feel may be a bit as higher side.

3.4 Sex Ratio at Birth

The sex ratio at birth for Korea has been assumed to be 105.

14) EPB, The Republic of Korea, *1975 Census Report*, 1972.

15) Coale & Demeny, *Regional Model Life Tables and Stable Population*, Princeton University Press, Princeton, New Jersey, 1966.

Table 7. Projected Population (Low Assumption with Rapid Decline in Fertility) by Five Year Age Groups, for Specified Years, 1985–2000

(Unit: '000)

Age Group	1985			1990			1995			2000		
	M	F	T	M	F	T	M	F	T	M	F	T
0–4	2,315	2,233	4,548	2,352	2,266	4,618	2,177	2,094	4,271	2,164	2,081	4,245
5–9	2,284	2,172	4,456	2,304	2,228	4,532	2,344	2,262	4,606	2,170	2,091	4,261
10–14	2,288	2,148	4,436	2,278	2,169	4,447	2,299	2,226	4,525	2,339	2,260	4,599
15–19	2,369	2,207	4,576	2,280	2,145	4,425	2,271	2,166	4,437	2,293	2,223	4,516
20–24	2,505	2,331	4,836	2,356	2,202	4,558	2,269	2,141	4,410	2,261	2,163	4,424
25–29	2,195	2,060	4,255	2,489	2,324	4,813	2,343	2,197	4,540	2,258	2,136	4,394
30–34	1,653	1,579	3,232	2,180	2,052	4,232	2,475	2,317	4,792	2,331	2,191	4,522
35–39	1,272	1,244	2,516	1,640	1,571	3,211	2,165	2,043	4,208	2,459	2,308	4,767
40–44	1,172	1,135	2,307	1,257	1,235	2,492	1,623	1,561	3,184	2,145	2,031	4,176
45–49	1,102	1,074	2,176	1,151	1,121	2,272	1,153	1,222	2,375	1,598	1,546	3,144
50–54	849	914	1,763	1,069	1,054	2,123	1,119	1,102	2,221	1,123	1,202	2,325
55–59	635	734	1,369	807	887	1,694	1,020	1,025	2,045	1,069	1,074	2,143
60–64	491	580	1,071	585	699	1,284	747	848	1,595	946	982	1,928
65+	754	1,026	1,780	926	1,245	2,171	1,129	1,516	2,645	1,411	1,849	3,260
All Ages	21,884	21,437	43,321	23,674	23,198	46,872	25,134	24,720	49,854	26,567	26,137	52,704

Table 8. Projected Population (Medium Assumption with Moderate Fertility Decline) by Five Year Age Groups, for Specified Years, 1985–2000

(Unit: '000)

Age Group	1985			1990			1995			2000		
	M	F	T	M	F	T	M	F	T	M	F	T
0–4	2,421	2,336	4,757	2,526	2,434	4,960	2,411	2,321	4,732	2,221	2,136	4,357
5–9	2,284	2,172	4,456	2,410	2,331	4,741	2,517	2,430	4,947	2,403	2,317	4,720
10–14	2,288	2,148	4,436	2,278	2,169	4,447	2,405	2,328	4,733	2,512	2,428	4,940
15–19	2,368	2,207	4,576	2,280	2,145	4,425	2,271	2,166	4,437	2,398	2,326	4,724
20–24	2,505	2,331	4,836	2,356	2,202	4,558	2,269	2,141	4,410	2,261	2,163	4,424
25–29	2,195	2,060	4,255	2,489	2,324	4,813	2,343	2,197	4,540	2,258	2,136	4,394
30–34	1,653	1,579	3,232	2,180	2,052	4,232	2,475	2,317	4,792	2,331	2,191	4,522
35–39	1,272	1,244	2,516	1,640	1,571	3,211	2,165	2,043	4,208	2,459	2,308	4,767
40–44	1,172	1,135	2,307	1,257	1,235	2,492	1,623	1,561	3,184	2,145	2,031	4,176
45–49	1,102	1,074	2,176	1,151	1,121	2,272	1,153	1,222	2,375	1,598	1,546	3,144
50–54	849	914	1,763	1,069	1,054	2,123	1,119	1,102	2,221	1,123	1,202	2,325
55–59	635	734	1,369	807	887	1,694	1,020	1,025	2,045	1,069	1,074	2,143
60–64	491	580	1,071	585	699	1,284	747	848	1,595	946	982	1,928
65+	754	1,026	1,780	926	1,245	2,171	1,129	1,516	2,645	1,411	1,849	3,260
All Ages	21,990	21,540	43,530	23,954	23,469	47,423	26,647	25,217	50,864	27,135	26,689	53,824

4. Projection of Population and Discussion of Results

This projection here was made by using component method. Using the adjusted age and sex distribution of the population as on 1st July 1980 and the survival ratios as obtained from Coale and Demeny, West Model Life Table,¹⁵⁾ the populations aged 5 and above have been projected at an interval of 5 years. The projection has been done separately for the two sexes. Births occurring during a five year interval have been estimated by multiplying the assumed schedule of ASFR for the period with the corresponding number of females in the reproductive age groups. With the help of sex ratio at birth and survival ratios from birth to age group 0—4 for the two sexes for the period, the male and female population in the age group 0—4 were estimated in the projected population. Three sets of assumptions regarding ASFR and the values of e_8 for the projection period are shown in tables 5 & 6 respectively. The projected population figures under the various assumptions of decline in fertility and mortality by age and sex as on 1st July of the specified years are given in Table 7 to 9. Projected total population has been shown in Table 10 and projected population by broad age-groups has been given in Table 12.

Table 10. Projected Populations Total for Korea, 1985—2000

Projection	1985	1990	1995	2000
Low	43,321,000	46,872,000	49,854,000	52,704,000
Medium	43,530,000	47,423,000	50,864,000	53,824,000
High	44,137,000	49,314,000	54,674,000	59,962,000

4.1 Population Growth

The future population of the Korea will grow by 32.5 percent under "Low" projections, by 35.3 percent under "Medium" Projections and by 50.7 percent under "High" Projection within 20 years (1980—2000).

Birth rates, deaths rates and growth rates of projected population are given in Table 11.

Table 9. Projected Population (High Assumption with Constant Fertility) by Five-Year Age Groups, for Specified Years, 1985–2000

(Unit: '000)

Age Group	1985			1990			1995			2000		
	M	F	T	M	F	T	M	F	T	M	F	T
0–4	2,730	2,634	5,364	3,181	3,065	6,245	3,391	3,264	6,655	3,413	3,282	6,695
5–9	2,284	2,172	4,456	2,718	2,628	5,346	3,170	3,060	6,230	3,380	3,259	6,639
10–14	2,288	2,148	4,436	2,278	2,169	4,447	2,712	2,625	5,337	3,161	3,057	6,218
15–19	2,369	2,207	4,576	2,280	2,145	4,425	2,271	2,166	4,437	2,704	2,623	5,327
20–24	2,505	2,331	4,836	2,356	2,202	4,558	2,269	2,141	4,410	2,261	2,163	4,424
25–29	2,195	2,060	4,255	2,489	2,324	4,813	2,343	2,197	4,540	2,258	2,136	4,394
30–34	1,653	1,579	3,232	2,180	2,052	4,232	2,475	2,317	4,792	2,331	2,191	4,522
35–39	1,272	1,244	2,516	1,640	1,571	3,211	2,165	2,043	4,208	2,459	2,308	4,767
40–44	1,172	1,135	2,307	1,257	1,235	2,492	1,623	1,561	3,184	2,145	2,031	4,176
45–49	1,102	1,074	2,176	1,151	1,121	2,272	1,153	1,222	2,375	1,598	1,546	3,144
50–54	849	914	1,763	1,069	1,054	2,123	1,119	1,102	2,221	1,123	1,202	2,325
55–59	635	734	1,369	807	887	1,694	1,020	1,025	2,045	1,069	1,074	2,143
60–64	491	580	1,071	585	699	1,284	747	848	1,595	946	982	1,928
65+	754	1,026	1,780	926	1,245	2,171	1,129	1,516	2,645	1,411	1,849	3,260
All Ages	22,299	21,838	44,137	24,917	24,397	49,314	27,587	27,087	40,674	30,259	29,703	59,962

Table 11. Projected Birth Rates, Death Rates and Growth Rates 1980–2000

(Per one thousand population)

Projection	Rate	1980–85	1985–90	1990–95	1995–2000
Low	Birth Rate	22.55	20.96	18.01	16.85
	Death Rate	5.52	5.21	5.68	5.73
	Growth Rate	17.03	15.75	12.33	11.12
Medium	Birth Rate	23.53	22.32	19.62	16.93
	Death Rate	5.53	5.20	5.63	5.64
	Growth Rate	18.00	17.12	13.99	11.29
High	Birth Rate	26.33	27.35	26.10	23.78
	Death Rate	5.58	5.19	5.18	5.90
	Growth Rate	20.75	22.16	20.62	18.45

Table 12. Projected Population by Broad Age Groups: 1985–2000

Projection	Age	1985			1990			1995			2000		
		M	F	T	M	F	T	M	F	T	M	F	T
Low	0–14	6,887	6,553	13,440	6,934	6,663	13,597	6,820	6,582	13,402	6,673	6,432	13,105
	15–64	14,243	13,858	28,101	15,814	15,290	31,104	17,185	16,622	33,807	18,483	17,856	36,339
	64+	754	1,026	1,780	926	1,245	2,171	1,129	1,516	2,645	1,411	1,849	3,260
Medium	0–14	6,993	6,656	13,649	7,214	6,934	14,148	7,333	7,079	14,412	7,136	6,881	14,017
	15–64	14,243	13,858	28,101	15,814	15,290	31,104	17,185	16,622	33,807	18,588	17,959	36,547
	65+	754	1,026	1,780	926	1,245	2,171	1,129	1,516	2,645	1,411	1,849	3,260
High	0–14	7,302	6,954	14,256	8,177	7,862	16,039	9,273	8,949	18,222	9,954	9,598	19,552
	15–64	14,243	13,858	28,101	15,814	15,290	31,104	17,185	16,622	33,807	18,894	18,256	37,150
	65+	754	1,026	1,780	926	1,245	2,171	1,129	1,516	2,645	1,411	1,849	3,260

As illustrated in Table 11, the birth rates are found to be 16.85, 16.93 and 23.78 per 1,000 population under "Low", "Medium", and "High" projections respectively in the period of 1995–2000. And the annual population growth rates are estimated to be 11.12, 11.29 and 18.45 per 1,000 population under "Low", "Medium" and "High" projections respectively in the period of 1995–2000. While, the death rate under the mortality assumption comes to be about 5.50 per 1,000 during 1980–2000. As shown in Appendix IV, the death rate had declined from 13 per 1,000 in 1955–60 to 7 per thousand in 1974. Therefore, we can assume that the death rate will further decline from 7 per 1,000 in 1974 to about 5.5 per 1,000 in 1980–85 and after that the death rate will remain about at the level up to the year 2000.

4.2 Dependency Rates

The young dependency ratio, i.e. the proportion of population aged 0–14 to the population in the age group 15–64, has decreased from 48.57 in 1985 to 38.35 in the year 2000 under "Medium" fertility assumption, and from 47.83 in 1985 to 36.06 in 2000 under "Low" fertility assumption. While the young dependency ratio has increased from 50.73 in 1985, to 52.63 in 2000 under "High" fertility assumption.

The young dependency ratio, the old dependency ratio and (total) dependency ratio

during 1985–2000 under the three sets of assumption are shown in Table 13. The expected drops in the (total) dependency ratio are mostly explained by the continuous declines in the young dependency ratio (except “High” projections).

Table 13. Dependency Ratios Under Three Different Sets of Projections 1985-2000
(Per 1000)

Projections/Dependency Ratios		1985	1990	1995	2000
Low	Young Dependency Ratio	47.83	43.71	39.64	36.06
	Old Dependency Ratio	6.33	6.98	7.82	8.97
	Dependency Ratio	54.16	50.69	47.46	45.03
Medium	Young Dependency Ratio	48.57	45.49	42.63	38.35
	Old Dependency Ratio	6.33	6.98	7.82	8.92
	Dependency Ratio	54.90	52.47	50.45	47.27
High	Young Dependency Ratio	50.73	51.57	53.90	52.63
	Old Dependency Ratio	6.33	6.98	7.82	8.78
	Dependency Ratio	57.06	58.55	61.72	61.41

4.3 Elementary School Age Population

In Korea, it is compulsory for the population in the age groups 6–11 to go to elementary school. The population aged 6-11 has been calculated by using the Newton’s interpolation formula which is given below:

$$P_{6-11} = 0.736P_{5-9} + 0.568P_{10-14} - 0.104P_{15-19}$$

The elementary school age population by sex is given in the Table 14 for all three sets of projections.

As shown in Table 14, the compulsory school age population under “Low” projection will under go very little change during the 20 years period (1985–2000), the population under “Medium” projection will increase from 5,323,000 in 1985 to 5,789,000 in 2000 (8.8 percent increase during 1980–2000), and the population under “High” projection will increase from 5,323,000 in 1985 to 7,864,000 in 2000 (47.7 percent increase during 1980–2000). It is evident from the study that even if fertility declines substantially

Table 14. Estimated Compulsory School Aged Population by Sex under Three Sets of Projections, 1985—2000

Projections/Sex		1985	1990	1995	2000
Low	Male	2,734	2,753	2,795	2,687
	Female	2,589	2,649	2,704	2,591
	Total	5,323	5,402	5,499	5,278
Medium	Male	2,734	2,831	2,982	2,946
	Female	2,589	2,725	2,886	2,843
	Total	5,323	5,556	5,868	5,789
High	Male	2,734	3,057	3,637	4,002
	Female	2,589	2,943	3,518	3,882
	Total	5,323	6,000	7,155	7,864

in the country (under "Medium" and "Low" projection), the population of the primary school age will slightly increase during the next two decade.

This population, however, shows a decline in the year 2000 under "Low" projection.

In the end, it may be emphasized that the Korea is facing the crisis of steep population growth. For instance, the density of population was 404 per square kilometer in 1980, and annual population growth rate during last two decades (1960—1980) was about 20 per 1000. In the view of this future population projection, the "Low" and "Medium" projection under assumption of successful decline in fertility, the population will increase successively and the density of population will reach 536 and 547 per Km² by the year 2000 under "Low" and "Medium" projection respectively.

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Appendix I. Annual Percent Decline of ASFR and TFR for East Asia Countries

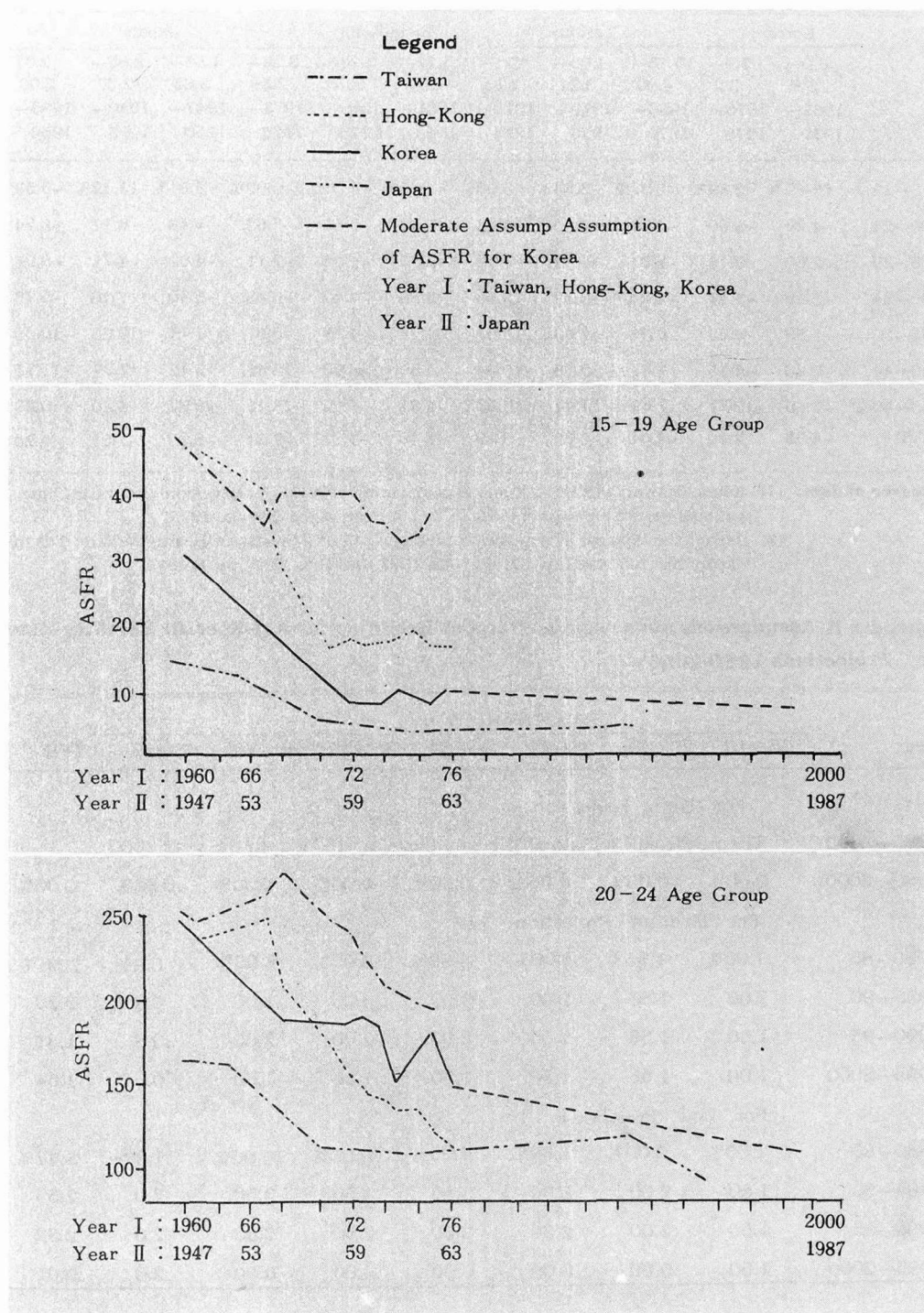
	Korea		Taiwan			Hong-Kong			Japan		
	6.0— 3.9	3.9— 3.2	5.75— 4.00	4.00— 3.21	3.21— 2.81	5.17— 3.73	3.73— 3.28	3.28— 2.58	4.51— 3.65	3.65— 2.37	2.37 2.00
	1962— 1970	1970— 1976	1960— 1970	1970— 1973	1973— 1975	1961— 1969	1969— 1973	1973— 1976	1947— 1950	1950— 1955	1955— 1960
15—19	-4.38%	-2.89%	-1.67%	-5.83%	+6.06%	-7.87%	+1.01%	-0.92%	-3.61%	-11.12%	-5.53%
20—24	-4.26	-1.56	-0.59	-4.90	-2.22	-3.46	-5.52	-5.62	-1.19	-6.12	-8.74
25—29	-2.60	-0.14	-1.20	-4.89	-7.00	-2.86	+1.06	-7.11	-4.02	-4.71	+0.06
30—34	-3.88	-3.11	-4.24	-9.52	-10.48	-2.86	-4.42	-6.45	-8.40	-7.16	-5.78
35—39	-5.83	-6.44	-6.51	-12.43	-13.51	-4.15	-4.58	-9.67	-11.11	-10.53	-10.35
40—44	-7.20	-6.73	-7.47	-13.33	-16.67	-4.30	-8.89	-12.45	-12.12	-12.97	-11.78
45—49	-7.35	-10.71	-7.69	-11.11	0.00	-4.31	-11.02	-18.18	-19.92	-13.40	-10.29
TFR	-4.38	-2.24	-3.04	-6.58	-5.92	-3.48	-3.02	-7.11	-6.36	-7.01	-3.20

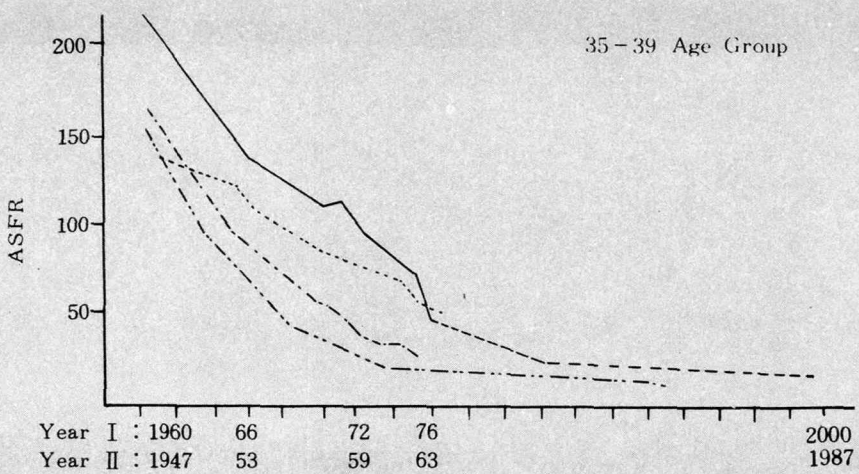
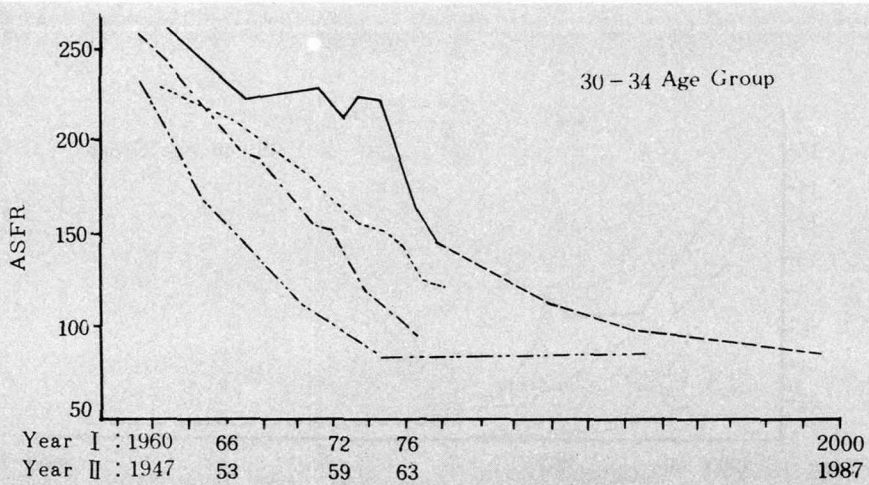
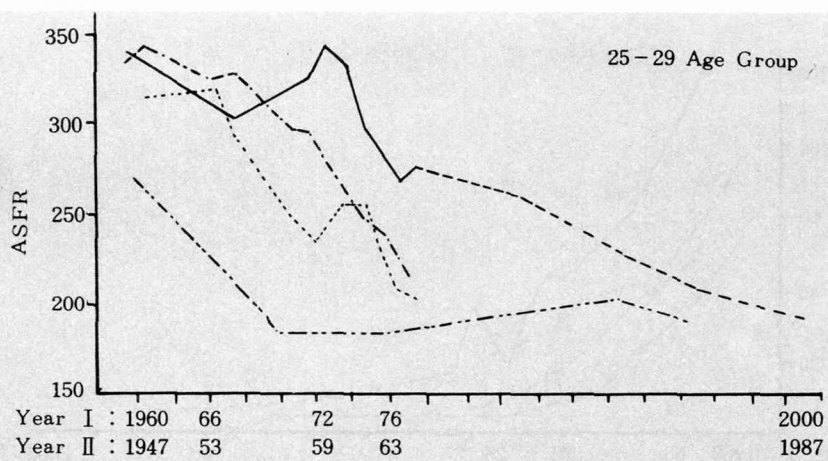
Source of data: (1) Korea, Taiwan and Hong Kong: A compilation of ASRR for developing countries, International research document, No. 7, U.S. Bureau of the Census, 1979.
(2) Japan: the Journal of population problems, I.P.P. Ministry of Health Welfare, Tokyo, Japan; No. 100, 1967, p. 52, No. 143, 1977, No. 159, 1981, pp. 66-93.

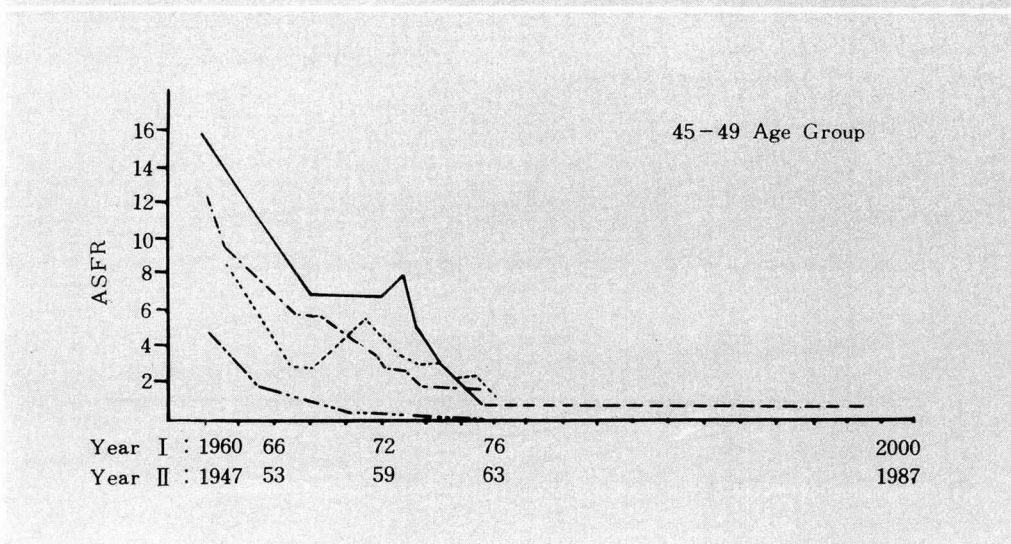
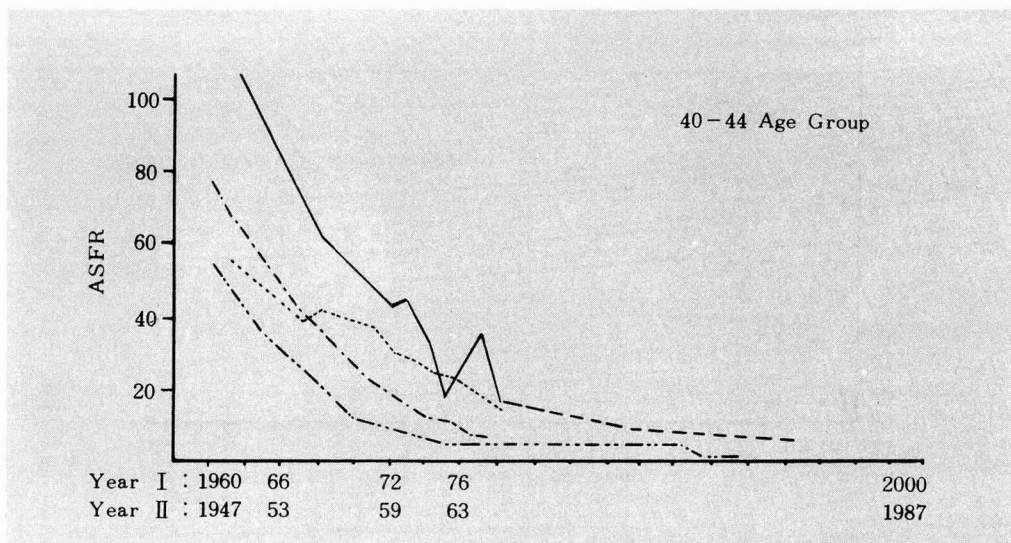
Appendix II. Assumptions about Annual Percent Declining for Age-Specific Fertility Rate for Projections 1980-2000

Year	Age Group							TFR
	15—19	20—24	25—29	30—34	35—39	40—44	45—49	
For "High" Projection								
1980—2000	The ASFR will remain at the same level as 1977 upto the year 2000							
1980—2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
For "Medium" Projection								
1980—85	1.00%	1.56%	1.00%	4.50%	8.00%	8.00%	0.9%	2.56%
1985—90	1.00	1.56	2.00	3.00	3.00	3.00	0.8	2.20
1990—95	1.00	1.56	2.00	2.00	2.00	2.00	0.8	1.81
1995—2000	1.00	1.56	1.50	1.50	1.50	1.50	0.8	1.54
For "Low" Projection								
1980—85	1.50%	2.00%	1.50%	6.00%	10.00%	10.00%	1.0%	3.45%
1985—90	1.50	2.00	2.50	3.50	3.50	3.50	2.0	2.55
1990—95	1.50	2.00	2.50	2.50	2.50	2.50	2.0	2.39
1995—2000	1.50	0.00	0.00	0.00	0.00	0.00	2.0	0.01

Appendix III . Trends of ASFR by Country







Appendix IV. Estimated Crude Birth Rates, Crude Death Rates and Total Fertility Rates (1925—1976)

Year	CBR (per 1,000)	CDR ⁷⁾	TFR
1925—30 ¹⁾	45	26	6.2
1930—35	44	23	6.1
1935—40	44	21	6.2
1940—45	42	20	6.1
1945—50	42	16	6.0
1950—55	40	14	5.6
1955—60	45	13	6.3
1966 ²⁾	36	8	5.4
1968 ³⁾	30	7	4.2
1971 ⁴⁾	28	8	4.7
1974 ⁵⁾	27	7	3.6
1976 ⁶⁾	24	—	3.2

Source: 1) Tai Hwan Kwon, et al., *The Population of Korea*, The Population and Development Studies Center, Seoul National University, 1975, p. 12.

2) E.H. Choe and J.S. Park, *Some Findings from the Special Demographic Survey*, 1966, p. 21.

3) Kap Suk Koh and David P. Smith, *The Korean 1968 Fertility and Family Planning Survey*, 30, 96.

4) H.S. Moon et al., *Fertility and Family Planning: An Interim Report on 1971 Fertility-Abortion Survey*, pp. 29, 123.

5) E.H. Choe and S.K. Kong *Changing Fertility and Pattern of Contraceptive Use*, pp. 28, 31, 33.

6) Byung Tae Park, et al., op. cit., p. 112.

7) E.H. Choe, S.K. Kong and Y.H. Lee, "A Study of Mortality Trend in Korea," in *Health Problems and Provision in Korea (II)*, J.G. Park and J.S. Min, etc., Seoul, Healths Planning Secretariate/KDI, 1977, pp. 457, 476-477; Tai Hwan Kwon, *Demography of Korea: Population Change and Its Components 1925—66*, Seoul, SNU Press, 1977, p. 17; Yun Shik Chang, *Population in Early Modernization: Korea*, Unpublished Ph.D. Thesis, Princeton University, 1967, p. 267.

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