

Demographic Transition ; Future Directions of the National Family Planning Program in Korea

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I . Introduction

It is well known that population and socio-economic developments are interrelated. Changes in population size and structure affect various economic and social factors pertaining to output, income, education and employment.

Conversely, hand, demographic factors such as fertility, mortality, and migration are affected by changes in socio-economic conditions. In view of these inter relationships, the government of the Republic of Korea established an explicit population control policy in 1961 and starting the following year the national family planning program was included as a component

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of Five-Year Economic Development Plans since then. This policy measure was taken as the government was aware that without a proper population control policy, it could not achieve economic development within a short period. After the Korean War(1950-1953), fertility increased very rapidly in the late 1950s, reaching its highest level around 1960 with a TFR of about 6.0, which is mainly attributed to the baby boom and the decline of mortality, especially infant and child mortality after the Korean War. Accordingly, population growth peaked at an explosive rate of 2.9 percent in 1960, more than enough to cancel the meager economic growth at that time.

Between 1960 and 1990, a major demographic transition took place in the midst of rapid social and economic change. The successful implementation of a series of economic development plans has resulted in a sustained rate of economic growth of 8 percent per annum during the last three decades, which has, in turn, contributed to decrease in infant and child mortality, the changing status of women, increasing female labor force participation, raising educational attainment, increasing family nucleation, a decrease in the value of children, and rapid modernization and urbanization. Simultaneously, there has been a great reduction in the nation's total fertility rate from 6.0 to 1.6 between 1960 and 1988, which was below replacement-level fertility. The contraceptive practice rate for currently married women aged 15 to 44 increased from 20 percent in 1966 to 79.4 percent in 1991. During the last three decades, a rapid urban-rural convergence in fertility and contraceptive practice took place. In

fact, the 1991 national fertility survey data show that the contraceptive practice rate in rural areas exceeds that in urban areas(79.2% in urban, 80.0% in rural). This urban-rural convergence in fertility and family planning is largely due to the fact that the national family planning program has been oriented toward the traditionally high-fertility rural areas. There has also been a gradual disappearance over time of educational differentials in contraceptive practice in both urban and rural areas, while the sustained strong son preference has made the sex of living children more important factor of fertility change in Korea.

It is estimated that if the current fertility rate continues, the nation's population will stabilize at around 50.6 million by the year 2021, and then switch to a negative growth which leads to an aging and labor force problems due to sudden change in the age structure. These demographic changes imply that new directions and measures for future population policy should be sought with great care to avoid the socio-economic problems that are bound to come as a consequences of low fertility in the immediate future. Therefore, this study aims to review the population control policy focusing on its past accomplishment, and its prospects in the future as well as socio-economic and demographic problems that we came across in the course of the program implementation in Korea in an effort to suggest future policy directions and strategies.

II . Program Policy Developments and Fertility Decline

In 1962, the national family planning pro-

gram was started with the provision of free contraceptive services on the assumption that the availability of contraceptives would help inculcate the motivation for family planning. In the initial stage of the program, the main emphasis was placed on the provision of family planning services in rural areas. In the 1970s, owing to the influx of rural population into the urban areas, the main focus of the nation's family planning program switched from the rural to urban areas, with emphasis on the provision of family planning services for those in the urban low-income category and for industrial workers.

Starting in 1981 when the fifth Five-Year Economic and Social Development Plan(1982-86) was drawn up, the government began to introduce a series of innovative population policies aimed at developing extensive social support policies for small family norms. The focus of attention during this period was on the control of the inordinate population growth that jeopardized the government's five-year development plan. These population policies were formulated in accordance with a presidential decree, issued in 1981. Thanks to this decree, there was a strong political commitments to family planning and active participation of, and coordination between, all government ministries in the program. This unusual concern by the government in the success of family planning program was one of the major factors contributing to rapid changes in fertility level and contraceptive practice rate in the 1980s.

With the socio-economic development and the successful implementation of the national family planning program, there has been a great decline in the nation's fertility level and the popu-

lation growth rate since 1962. As shown in Table 1, the total fertility rate decreased by 73percent, from 6.0 to 1.6 between 1960 and 1988, and there after, the same-save level of fertility has been maintained. The decline was observed over all age categories. The decline for those in their early and mid-twenties was mainly due to the rise in age at marriage, while for those aged 30-34years, the 81percent decline was mainly due to the increase in contraceptive practice and induced abortion rates. The change in fertility level for those, in the 25-29 age category was relatively slow in its pace, representing percent decline during the same period.

The main reason for the large reduction in fertility was the increase in the use of contraception and abortion. Since the inception of the national family planning program in 1962, the contraceptive practice rate of married women aged 15-44 increased from 10 percent in 1961 to 79.4 percent in 1991(S.K.Kong, et al., 1992: 147). With the introduction of laparoscopy into the national program in 1976, the acceptance rate of female sterilization continued to increase rapidly, while the other temporary methods declined. Thus, the sterilization practice rate of reproductive married women increased by 39 percentage points between 1976(8.3%) and 1991 (46.3%). A recent survey finding of contraceptive prevalence for 1991 indicates a sharp increase between 1982 and 1985 as shown in Table 2. The two-year increase of 22.7 percentage points is much greater than that of 3.2 percentage points during the preceding period of 1979 to 1982. These changes during the 1980s appear to have been the result of heightened government efforts in 1981 to strengthen the

Table 1. Age Specific Fertility Rates and Total Fertility Rates by Residence : 1960-1991

Age	1960 ¹⁾	1966 ¹⁾	1968 ¹⁾	1971 ¹⁾	1974 ¹⁾	1976 ²⁾	1982 ²⁾	1985 ³⁾	1988 ³⁾	1991 ³⁾
Whole country										
15~19	37	15	7	6	11	10	12	7	3	3
20~24	283	205	146	188	159	147	161	162	104	62
25~29	330	380	301	341	276	275	245	187	168	188
30~34	257	242	201	234	164	142	94	52	39	50
35~39	196	150	120	124	74	49	23	8	6	7
40~44	80	58	65	41	29	18	3	1	3	1
45~49	14	7	7	3	3	1	-	-	-	-
TER	6.0	5.4	4.2	4.7	3.6	3.2	2.7	2.1	1.6	1.6
Urban										
15~19	22	4	6	3	6	5	6	8	1	1
20~24	223	119	113	116	135	163	137	155	92	54
25~29	316	278	297	316	262	258	229	183	165	184
30~34	250	209	169	196	129	120	87	53	40	52
35~39	184	92	77	91	42	36	9	5	4	6
40~44	81	48	28	29	13	11	4	-	4	-
45~49	-	8	-	-	2	3	-	-	-	-
TER	5.4	3.7	3.5	4.0	2.9	2.8	2.4	2.0	1.5	1.5
Rural										
15~19	48	16	8	9	16	16	25	4	9	9
20~24	291	243	178	211	192	173	217	182	156	115
25~29	354	424	305	363	298	278	286	200	177	201
30~34	308	284	220	266	206	173	110	48	35	41
35~39	237	228	147	144	103	54	29	17	13	12
40~44	115	96	87	49	41	26	3	2	3	3
45~49	-	12	11	4	4	-	-	-	-	-
TER	6.7	6.5	4.8	5.2	4.3	3.6	3.3	2.3	2.0	1.9

Data Source : 1) Byung-Tae Park, et al. The 1976 National Fertility and Family Planning Evaluation Survey, Korean Institute for Family Planning, 1978, pp.113~124.

2) Hyun-Sang Moon, et al., National Fertility and Family Health Survey Report Korea Institute for Population and Health, 1982, pp.26~33.

3) Sae-Kwon Kong, et al., 1991 National Fertility and Family Health Survey Report, 1992, p. 208.

population control policies.

Induced abortion has been a very important factor in Korea's fertility transition since 1962. Induced abortion, which had been strictly prohibited by the Penal Code until 1962, gradually became a routine medical practice. Since the enactment of the Maternal and Child Health Law in 1973, induced abortion has been legalized on medical and philanthropic grounds. Actual prac-

tice, however, contradicts the legal status(S.B. Hong, 1988) Between 1974 and 1988, the government provided a total of 1.6 million cases of the menstrual regulation procedure to those women who became pregnant due to the failure of contraceptive use. The total abortion rate for married women aged 15 to 44 increased more than four times from 0.7 abortion per woman in 1963 to 2.9 in 1978, but it fell to 1.6 in 1988.

Table 2. Percentage of Married Women Who Were Currently Practicing Contraception by Their Selected Characteristics : 1976-91

Unit : %

Women's	Characteristics	1976	1979	1982	1985	1988	1991
Prevalence / Practice rate		44.2	54.5	57.7	70.4	77.1	79.4
Method :							
	Pill	7.8	7.2	5.4	4.3	2.8	3.0
	Condom	6.3	5.2	7.2	7.2	10.1	10.2
	IUD	10.5	9.6	6.7	7.4	6.7	9.0
	Tubectomy	4.1	14.5	23.0	31.6	37.2	35.3
	Vasectomy	4.2	5.9	5.1	8.9	11.0	12.0
	Others	11.3	12.1	10.3	11.0	9.3	9.9
Residence :							
	Urban	48.0	55.1	58.7	71.5	77.7	79.3
	Rural	40.2	53.6	55.7	67.7	75.5	80.0
Age of wife :							
	15-24	15.4	18.3	22.3	35.8	44.4	45.6
	25-29	31.9	40.9	44.4	60.8	65.4	61.4
	30-34	55.8	68.5	71.6	84.2	86.8	84.5
	35-39	61.5	71.9	79.9	87.2	89.6	93.7
	40-44	45.1	53.3	62.5	69.6	81.6	87.2
Parity :							
	0	4.6	7.0	11.0	13.8	21.0	20.4
	1	18.2	20.7	24.3	44.7	58.1	61.8
	2	44.0	58.7	66.7	82.5	89.3	91.4
	3	59.0	69.0	76.4	84.5	90.5	92.8
	4+	52.8	68.9	70.8	80.1	87.6	84.7

Source : KIHASA. National Fertility and Family Health Survey, 1976-1991

However, the total abortion rate shows an increasing trend to 1.9 in 1991, particularly among the young age women in the 20s as shown in Table 3. The experience rate of induced abortion of married women increased from 7 percent in 1964 to 53 percent in 1991 (S. K.Kong, et al., 1992).

The contribution of induced abortion to Korea's fertility decline was very pronounced in the 1960s when the national family planning program was weak in its initial stage, and thereafter, family planning has had more of an impact. In 1970, the rise in age at marriage accounted for 38.6 percent reduction in fertility, while induced abortion and contraception contributed 29.4 percent and 31.9 percent respectively. In the 1985 survey, induced abortion accounted for 32.2 percent and contraception

50.3 percent of fertility reduction (Han and cho, 1987, pp. 331-372). These two factors, characterizing Korea's rapid fertility fall in the past are found to have been detrimental to maternal and child health, which in turn influences the future population quality of the country. The maternal and child health program, is the service with which the family planning program will have to be thoroughly integrated in the coming years.

With modernization and socio-economic development, the marital composition of the Korean population has changed substantially. The proportion of currently married women has decreased rapidly in the early reproductive ages of 20s due to the postponement of marriage. In fact, the mean age at marriage for women rose from 21.6 in 1960 to 25.1 in 1990, while the age

Table 3. Changes in Induced Abortion Rates for Currently Married Women in Korea : 1963-1991

Age Category	1963	1973	1978	1982	1985	1988	1991
20-24	16	86	70	74	91	108	183
25-29	29	75	156	158	146	107	111
30-34	58	137	148	146	115	72	59
35-39	40	88	156	106	40	28	22
40-44	-	22	54	48	20	7	7
(a) Total abortion rate of married women	0.7	2.0	2.9	2.7	2.1	1.6	1.9
(b) Total fertility rate	6.0 (1960)*	3.6 (1974)	3.2 (1976)	2.7	2.1	1.6	1.6

* () refers to individual years.

Data Source : KIHASA, An Overview of Population Control Policies in Korea : A summary, (June, 1991), p. 15.

The 1991 National Fertility and Family Health Survey, 1992, pp. 178-181

for men increased from 25.4 to 29.0 during the same period (NSO, 1991). On the other hand, there is evidence that this postponement of marriage has caused an increase in fecundability in the early years of marriage (L.J.Cho, et al., 1982. p.7). A study finding shows that more than 66 percent of those married women in 1981-85 cohort had a first live birth during the first year of marriage, while 24.2 percent of those women in the 1950's marriage cohort had a baby in the corresponding period. This finding indicates that the government should set up a new program direction to emphasize the birth spacing through the integration of family planning with other health programs including maternal and child health services(S.B.Lee, 1987).

III. Major Determinants of Fertility Decline in Korea

Since the introduction of the Korean national family planning program in 1962, there have been many studies on the determinants of fertility in an effort to set up the effective program directions and strategies. With the availability of reliable data since the mid of 1960s, numerous researches have found various important factors which have been suggested as influencing Korea's fertility decline over the last three decades. These include education, residence, income(GNP), decrease in infant mortality rate, sex of existing children, norms, age at marriage, parity, marital status and so on as shown in Table 4. Among these factors, education, age of women at birth, residence, and sex of children were the most highlighted independent factors.

Researches on educational effect on fertility

behavior have been undertaken frequently and they revealed consistently the inverse relationship between fertility and educational level of women. In fact, a large part of the reduction in fertility over time might have been due to increasing educational attainment. Between 1960 and 1990, the average years of educational attainment increased from 4.78 to 10.01 for male, and from 2.92 to 8.22 for female (Ministry of Education, 1992). This rise in educational levels resulting from longer schooling tended to delay the age at first marriage, which increased from 21.6 years in 1960 to 25.5 years in 1990 for female, and from 25.4 to 28.6 for male during the same period (National Statistical Office, 1992).

Between 1960s and 1970s, place of residence was important variable affecting the fertility decline. In 1966, total fertility rate in urban areas recorded 3.7 compared with rather high 6.5 in rural areas. The gap has decreased over time reaching 1.5 in urban areas and 1.9 in rural areas in 1991. As mentioned above, rural-urban fertility differentials have been converging over time, and the contraceptive practice rate in rural areas exceeds that of urban areas. This converging trends of fertility is attributable to the main emphasis of the national family planning program has been placed on providing contraceptive and IEC services in rural areas from the initial stage of the program.

Also, women's education is becoming a less important factor in fertility over time, while the decline of the desired family size but the sustained strong son preference has made the sex of children more important factor of the fertility in recent years. The 1988 survey shows that 69.

Table 4. Major Determinants of Fertility Decline in Korea Drived from Various Researches.

Researcher and Year	Data Base	Statistical Methods	Major Determinants
Han, I.S. 1973	1966 Population Census	Own-children method	Education, Residence, Age at birth
Lee, K.S. 1976	1970 Population Census	Regression analysis, Rank-order correlation	Illiteracy rate of women, Residence, Mean age at first marriage, GNP
Chung, B.M., et al. 1972	1971 Family Life Survey	Pearson correlation matrix	Education of women, Residence
Foreit, J.R. 1979	1971 and 1976 National Fertility Survey	Retrospective cohort and Multiple regression analysis	Education, Residence, High parity
Bumpass. L. et al. 1982	1974 National Fertility Survey	OLS analysis	Parity, Birth loss, Decrease in IMR, Education Age at first birth,
Kim, I.K. 1988	1974 National Fertility Survey	Multiple regression analysis	Residence, Employment, Education
Kim, T.H. 1990	1974 National Fertility Survey	Multiple classification analysis	Education, Residence, Husband's occupation, Age at Marriage
Choi, M.K. 1984	Social Indicators in Korea, 1983	Multiple regression analysis	Female labor force participation, Decrease in IMR, Illiteracy rate, Industrial structure, GNP
Choi, B.H. 1991	1987 Special Demographic Survey	Multiple regression analysis	Education, Occupation, Son preference, Age at marriage, Child death
Seo, M.H. 1992	1991 National Fertility and Family Health survey	Logistic regression	Education, Residence, Age at birth, Husband/wife communication.
Cho, N.H. and N.K.Ahn 1993	1991 National Fertility and Family Health survey	Proportional hazards and Logistic regression models	Sex of children, Education

5 percent of couples with two sons are using sterilization as contraceptive method, while only 38.2 percent of those with two daughters are practicing sterilization. Furthermore, son preference in Korea exerts a substantial influence on sex ratio. The vital registration data reveal that the sex ratio of third birth increased from 109.3 in 1982 to 170.5 in 1988, and similar trend is observed among the fourth or above births: 114.2 vs 199.1 during the same period. This is attributed to the fact that those patterns with no male heir are willing to go on the next higher parity, and sex selection procedures were used by a large number of parents. In order to keep a balanced sex ratio, the government took an action to revise the medical law in 1986 in which those physicians who provide the medical services for identifying the fetal sex will be cancelled their licenses to practice medicine (Cho, N.H., et al., 1992).

Applying the standardization approach to examine the structural factors on fertility decline, and the Bongaarts model to measure the effects the proximate variables in the fertility decline over the last three decades, this study indicated that fall in the CBR and GFR for the periods of 1960 to 1970, and 1980 to 1990 were largely influenced by the decline in marital fertility which was triggered by the national family planning program since 1962. The analysis based on the Bongaarts model revealed that the three principal factors which exercised strong influence on the fertility decline were the rise in age at marriage, the increase on induced abortion, and the increase in contraceptive use, but the influence of induced abortion has been decreasing in recent years(Cho, N.H. et al., 1992).

IV. Changes in Population Age Structure

In 1991, in drawing up its Seventh Five-Year Economic and Social Development Plan(1992-96), the government forecast that the total fertility rate would remain at the current low level of 1.6 throughout the five-year plan period. Table 4.2 indicates that the 1990 population of 42.9 million is expected to increase by 9.1 percent to reach 46.8 million in 2000, and it is expected to stabilize at around 50.6 million by 2021.

Owing partly to strong government population control measures, Korea was able to achieve her demographic transition within a relatively short period and has reached a below-replacement level fertility far in advance of what demographers have predicted. Korea's population structure in 1960 was typical of a country with high birth and death rates. In 1990, the population pyramid had been transformed into a bell shape, primarily because of the decline in fertility. In the year 2020, the bell shape population age structure is expected to assume a columnar form, if fertility and mortality continue to remain at a low level.

As shown in Table 5, the young population aged less than 15 years of age accounted for 42.3 percent of the total population in 1960. This segment of the population shrank to 25.8 percent in 1990 and is expected to shrink to a still smaller 21.2 percent and to 15.8 percent in the years 2000 and 2021, respectively. The "birth dearth", due to the successful family planning programs in the late 1960's and 1970's, inflated the proportion of those in the 15-64 age category from 54.8 percent in 1960 to 69.2

Table 5. Changes in Population Age Structure : 1960-2021

Year	Total	0-14 years		15-64 years		65 years and over		Dependency ratio		
	population	population (000s)	(%)	population (000s)	(%)	population (000s)	(%)	Total	Young Age	Old Age
1960	25,012	10,588	42.3	13,698	54.9	726	2.9	82.6	77.3	5.3
1970	32,241	13,709	42.5	17,541	54.4	991	3.1	83.9	78.2	5.7
1980	38,124	12,951	34.0	23,717	62.2	1,456	3.8	60.7	54.6	6.1
1985	40,806	12,305	30.2	26,759	65.6	4,742	4.3	52.5	46.0	6.5
1990	42,869	11,077	25.8	29,648	69.2	2,144	5.0	44.5	37.3	7.2
1991	43,268	10,947	25.3	30,109	69.6	2,212	5.1	43.7	36.4	7.3
1992	43,663	10,832	24.8	30,548	70.0	2,283	5.2	43.2	35.5	7.5
1993	44,056	10,728	24.4	30,966	70.3	2,362	5.4	42.2	34.6	7.6
1994	44,453	10,581	23.8	31,422	70.7	2,450	5.5	41.5	33.7	7.8
1995	44,851	10,400	23.2	31,908	71.1	2,543	5.7	40.6	32.6	8.0
1996	45,248	10,214	22.6	32,391	71.6	2,643	5.8	39.7	31.5	8.2
1997	45,642	10,047	22.0	32,835	71.9	2,760	6.0	39.0	30.6	8.4
1998	46,033	9,938	21.6	33,210	72.1	2,996	6.3	38.6	29.9	8.7
1999	46,416	9,906	21.3	33,490	72.2	3,019	6.5	38.6	29.6	9.0
2000	46,789	9,917	21.2	33,705	72.0	3,168	6.8	38.8	29.4	9.4
2005	48,434	9,841	20.3	34,636	71.5	3,956	8.2	39.8	28.4	11.4
2010	49,683	9,510	19.1	35,505	71.5	4,668	9.4	39.9	26.8	13.1
2015	50,346	8,790	17.5	36,146	71.8	5,410	10.7	39.3	24.3	15.0
2021	50,586	7,989	15.8	35,972	71.1	6,625	13.1	40.6	22.2	18.4

Data Source : National Statistical Office, Population Projections, 1991.

percent in 1990. The proportion of these economically most active persons is expected to increase to 72.2 percent in 1999 and to hover around this level there after for the time being. On the other hand, the old-age population of 65 years and over, that accounted for less than three percent of the total population in 1960, increased to five percent in 1990, and is estimated to increase to 13.1 percent by 2021.

Changes in age composition are also reflected

in the decrease in dependency ratio from a level of 82.6 percent in 1960 to 44.5 percent in 1990. The dependency ratio is expected to decline to 38.6 percent in 1998, before it resumes a gradual increase to reach a 40.6 percent level in 2021. The decrease in the young-age dependency ratio is likely to continue through the year 2021, provided that low fertility continues. The young-age dependency ratio that stood at 77.3 percent in 1960 is projected to decline to 22.2

percent in 2021. Meanwhile, the old-age dependency ratio is to increase from 5.3 percent to 18.4 percent over the corresponding period.

1. Women in the Reproductive Age Span

In 1960, women in the reproductive age category(15-49 years) accounted for 46.9 percent of the total female population. This proportion increased to 56.9 percent in 1990, and is expected to increase further to 57.7 percent in 1995. However, in 2021, the proportion of women in the reproductive age span is projected to decline to 46.8 percent, a level very similar to that found in 1960.

As set out in Table 6 ,the proportion of women of reproductive age is likely to remain at a high level in the coming 10 years at least, indicating that Korea's birth rate could increase markedly if women decide to have additional number of children.

Table 6. Female Population in Reproductive Age
Category : 1960-2021

Year	Total Female Population(1) (000s)	Female population 15-49 year old(2) (000s)	Proportion (2/1)
1960	12,462	5,848	46.9
1970	15,932	7,437	46.7
1980	18,888	9,959	52.7
1985	20,230	11,072	54.7
1990	21,301	12,116	56.9
1995	22,274	12,855	57.7
2000	23,230	13,401	57.7
2005	24,030	13,412	55.9
2010	24,632	12,942	52.5
2021	25,081	11,735	46.8

Date Source : Refer to Table 1.

2. Decrease in Young-age and School-age Population.

The increase in the number of persons aged 0 -14 years old from 10.6 million in 1960 to 13.7 million in 1970 was primarily due to the post-Korean War baby boom. Owing to the successful implementation of family planning programs, the young-age population decreased from 12.9 million in 1980 to 11.1 million in 1990, and is expected to decrease further to 10.4 million in 1995 and to around eight million in 2021.

The decrease of young-age population is well attested to by fluctuations in the number of school-age population over the 1960-2021 year period. The total school-age population increased from 8.6 million in 1960 to 14.4 million in 1980(Table 6) but began to decline in the mid-1980s. It is estimated that the school-age population will decrease to 11.3 million in 2000 from 13.4 million in 1990 and further to 9.4 million in 2021. By level of school, the primary school-age population started a down-turn after its peak in 1980, and the middle and the high school-age population began to decline after its peak in 1985. The college-age population is expected to decrease after its peak in 1990 at a population of 3.7 million.

3. Increase in Economically Active Population

As shown in Table 5 , the percentage of the economically active population (15-64 years) will continue to increase up to 1999, and is expected to account for 71 to 72 percent of the total population up to the year 2021. In 1990,

69.2 percent of the total population was accounted for by this economically active population, a seven percent increase over the 1980 level. In terms of absolute numbers, the economically active population increased by 5.9 million over the 10 year period. However, the economically active population within the 15-24 age category, that accounted for 22.6 percent of the total population in 1980, is expected to decline to 16.5 percent in 2000, and further to 12.7 percent in 2021.

The future decrease in the number of economically active population within the age span 15-24 years is attributable to the rapid fertility fall in the recent past. Table 5 presents the breakdown by age group of the economically active population for the 1960-2021 period. Except for the 45-64 age group, the economically active population for the 15-24 and for the 25-44 age categories is expected to stop increasing between 1990 and 2010. The population within 45-64 age category, that accounted for 16.3 percent of the total population in 1990, is expected to increase to 31.1 percent in 2021.

4. Increase in old Age Population

The population aged 65 years and more is expected to keep on increasing in the future and its proportion of the total population is to increase to 13.1 percent in 2021. This ageing population is primarily due to the fall in fertility and the lengthening of life expectancies thanks to the advances in medical sciences and improvements in public health represented by the fall in adult mortality. In absolute numbers, the old-age population increased from 730,000 in

1960 to 1.5 million in 1980, and again to 2.1 million in 1990. The old age population almost tripled in the last 30 years. In 2000 the old age population is to increase to 3.2 million, and in 2021 again to 6.6 million.

V. Cultural, Social and Economic Impacts of Fertility Decline

1. Rapid Pace of Old Age Population Increase

Aside from a purely theoretical discussion as to whether an ageing population inhibits an individual's social mobility (Keyfitz, 1982, p. 335), Korea will have to face in the not so distant future the many problems likely to arise from the rapid pace at which her population is growing old, the primary culprit in this instance being the unexpectedly rapid fall in fertility.

As given in Table 5, Korea's population is still in the mature population stage, since in 1991 only 5.1 percent of her population is represented by those aged 65 years and over. However, by the year 2005, Korea would certainly enter the aged population stage, as 8.2 percent of her total population would then be accounted for by those aged 65 years and over. The following are some of the issues Korea has faced once she enters the aged population phase in about 10 years from now.

A. Social Welfare Support for the Elderly

Despite the fact that life expectancy at birth is expected to increase from 71.27 years in 1990 to 76.95 in 2020, Korea has yet to develop welfare programs for the elderly. This trend will surely have to be accompanied by the initiation of a variety of welfare support policies for the elderly, including better pension schemes. The

national pension scheme for the aged that went into effect in 1988 is expected to suffer from shortage of funds in the future, as number of those eligible for the pension scheme will rapidly increase (KIHASA, 1990, p. 3).

B. Employment Opportunities for the Elderly

A survey of elderly households in 1988 (KIPH, 1989-b) indicates that most of the elderly are in search of employment to help support themselves financially. Almost 53 percent of 3,782 old-age people employed at the time of the survey responded that the dire need of money drove them to work. Thus the lack of secure income source for the elderly is likely to emerge as a serious social issue in the future, as the elderly population continues to increase. The development of employment policies for the elderly, including the revisions to the current mandatory retirement policy and provisions for the re-employment of the old-age population as a supplement or a substitute for the old-age pension benefits, warrants the first priority. Through employment, the elderly population not only will be able to relieve their financial difficulties but also will regain their sense of social participation.

C. Health Care for the Elderly

The health care for the elderly population is perhaps a more serious problem than the economic well-being of the elderly, since the current medical insurance program falls far short of meeting the long-term health care need of the elderly. As the incidence and the prevalence rates of morbidity in old age are higher than those for the younger age categories, health

care cost will increase rapidly as the population ages. Moreover, health care costs for an elderly person increased by 43.3 percent over the 1985-88 period, in contrast to a 19 percent increase per person for the entire population over the corresponding period.

The introduction of nursing home programs and the establishment of many gerontological hospitals for the treatment and prevention of gerontological diseases will be among the measures that both the public and the private sectors will have to take. The opening in October, 1991 of the 170-bed Korea Gerontology Centre at the Hangang Sacred Heart Hospital in Seoul is a prerunner in this respect.

D. Sense of Alienation among the Aged

In the 1988 elderly household survey, 44.6 percent of the total of 4,333 elderly respondents responded that they do not want to live with their children (KIPH, 1989-b, pp. 169-173). This rather high percentage may be attributable to the fact that the sample in this survey was restricted to people who were not residing with their children. However, the finding may indicate also that the old patriarchal family system is being unravelled at its seams and old family norms are breaking apart. Their unwillingness to reside with their children, or their children's unwillingness to join the parental homes, will give rise to a sense of alienation among elderly parents. The recent trend of family nucleation is a direct indicator of the unwillingness of the married or unmarried children to reside with the elderly.

According to a Bureau of Statistics report (National Bureau of Statistics, 1991, p. 7), the number of households increased by 18.7 percent

over the 1985-90 period and the average household size shrank from 4.2 in 1985 to 3.8 in 1990. In 1990, the average household size was 4.6. A variety of socio-cultural programs would have to be developed for the elderly so that society can make the best use of their rich experience and talents yet untapped. The mere provision of a large number of homes for the aged would not help solve the problem of alienation. Encouraging them to participate in community social services would prove to be a better solution.

2. Increase in Economically Active Population

As indicated in Table 5, the adult population will continue to increase up to 2015, and the annual total number of persons aged 15-64 will range between 35 and 36 million up to the year 2021. Provision of sufficient jobs is yet another

problem that Korean society will have to face.

The number of persons aged 15-64 is expected to increase from 29.7 million in 1990 to 33.8 million in 2000, a 4.2 million increase over a 10-year period. Another 2.2 million will be added between 2000 and 2021. As the level of education for the population as a whole will continue to increase in the coming decades, some of the manufacturing and construction industries are expected to suffer from shortage of less skilled labour in the future.

The increase in the adult population does not necessarily mean an increase in unemployment, since the relevant age group includes those in school, in the military service, and those studying abroad or engaged in domestic chores. But, as is indicated in Tables 5 through 8, the unemployment rate is expected to increase, as the population in the 25-64 age group, which has the highest labour participation rate, is expected

Table 7. School-Age Population : 1980-2021

Population (000s)	1960	1970	1980	1990	1995	2000	2010	2021
a) Total population	25,012	32,241	38,124	42,869	44,851	46,789	49,683	50,586
b) Total school age population (6-21 years)	8,553	12,604	14,401	13,419	12,077	11,325	10,487	9,408
c) Primary school age population (6-11 years)	3,629	5,711	5,499	4,835	3,956	3,947	3,904	3,199
d) Middle school age population (12-14 years)	1,566	2,574	2,599	2,306	2,467	1,937	2,007	1,783
e) High school age population (15-17 years)	1,417	2,101	2,671	2,627	2,401	2,121	1,974	1,841
f) College age population (18-21 years)	1,941	2,218	3,632	3,651	3,253	3,320	2,602	2,585

Data Source : Refer to Table 5.

Table 8. Economically Active Population by Age Group : 1960-2021

Year	15-24 years		25-44 years		45-64 years		15-64 years	
	population(%) (000s)		population(%) (000s)		population(%) (000s)		population(%) (000s)	
1960	4,741	(19.3)	5,985	(23.9)	2,973	(11.9)	13,698	(54.8)
1970	5,838	(18.1)	7,908	(24.5)	3,794	(11.8)	17,541	(54.4)
1980	8,613	(22.6)	10,050	(26.4)	5,050	(13.3)	23,713	(63.2)
1990	8,753	(20.4)	13,894	(32.4)	7,000	(16.3)	29,648	(69.2)
2000	7,721	(16.5)	16,842	(36.0)	9,142	(19.5)	33,705	(72.0)
2010	6,493	(13.1)	16,144	(32.5)	12,868	(25.9)	35,505	(71.5)
2021	6,413	(12.7)	13,853	(27.4)	15,707	(31.1)	35,972	(71.2)

Data Source : Refer to Table 5.

to increase further, in contrast to the expected decrease in the number of those aged 15-24 years, whose labour force participation rate is rather low. Various new employment programs will have to be developed to prevent this expectation from being fulfilled.

3. Increase in Female Labour Force Participation Rate

Another factor that is likely to exacerbate the future labour market situation is the rapid increase in labour force participation rate among females, both married and unmarried. Concomitant with the changing perceptions of sex roles, an increasing number of women is expected to enter the labour market.

The female labour force participation rate increased steadily from 40.4 percent in 1975 to 45.0 percent in 1988 (Shin, 1991, p. 11), whereas the male labour force rate declined from 77.4 percent to 72.0 percent over the period. Figure 1 presents the trends in female labour force par-

ticipation rate over the last three decades. Except for the very early ages centering around 14 to 15 years, the female labour force participation rate shows a consistent increase over all age categories for the 1963-1990 period.

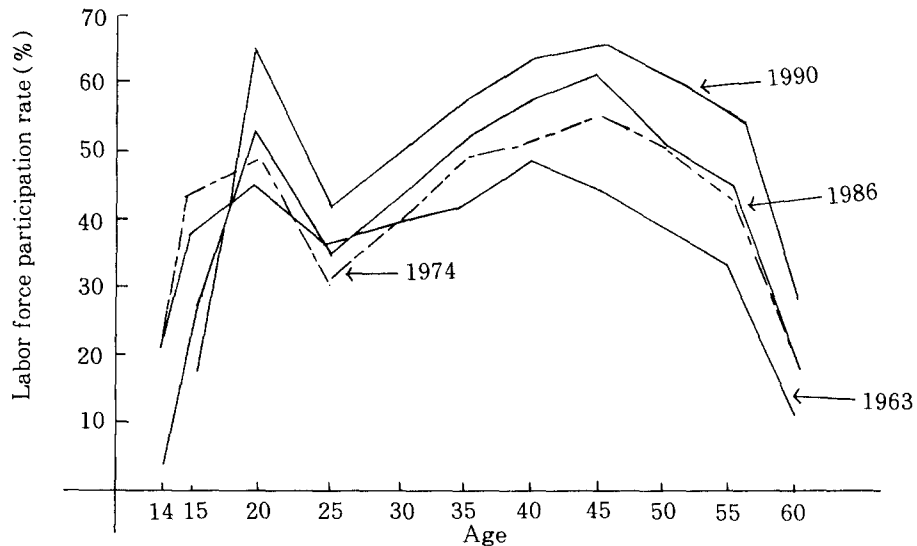
A bi-modal pattern is very much in evidence, owing primarily to the tendency of Korean women with pre-marital work experience to drop out of the labour force for child-bearing and child-rearing. The primacy of childbearing and motherhood remains virtually intact. This pattern stands in contrast to the uni-modal pattern of the female labour force participation rate for the post-1980 period in the United States (Lee et al., 1989, p. 474). The lower female labour force participation rate in 1986 and 1990 for the pre-20 age group is attributable to the increase in the school enrolment ratio for females in this age category. The bi-modality in figure 4.2 confirms that Korean women may increasingly opt for smaller number of children (as represented by the recent rapid fertility dip) but they are not yet willing to forgo childbear-

ing and motherhood altogether.

Two factors, among others, are responsible for the future increase in the female labour force participation rate; one purely social, and the other one socio-demographic in nature.

The first factor concerns the improvement in women's social status, as represented by a se-

ries of recent revisions to the Family Law (KWDL, 1991, pp. 138-148). According to the revision to the current Family Law that went into effect in January, 1991, daughters are allowed to assume household headship, and married and unmarried daughters can claim an equal share of their parent's inheritance as sons.



Data Source : 1) National Bureau of Statistics(NBOS), *Annual Report on Economically Active Population*, 1975, p.31;1987, p. 206.
 2) National Statistical office(NSO), *Annual Report on Economically Active Population*, 1991, p. 252.

Figure 1. Changes in Female Labour Force Participation Rates : 1963-1990

Under the former Family Law, married daughters were allowed only a quarter of the amount of inheritance allotted to second sons. In 1982, a revision to the Labour Law limited the number of occupations closed to women from 30 to six, thus eroding the concept of "pink-collar" work. In addition, in April, 1989, the Equal Employment Opportunity Act was revised to do away with the sex differentials in payment. A series of these legal measures has helped to enhance

the social status of women, which in turn encouraged them to work outside the home.

The second factor, of a socio-demographic nature has to do with the inculcation of the small family norm among women and the lengthening of "tertiary" life, or the residual life span women can enjoy after they have completed child-bearing and child-rearing (Fourastie, 1959, p. 417; Girard, 1983, p. 465). In the 1960s when the total fertility rate was 6.0, women

completed their child-bearing and child-rearing work when they were well over 40 years old. They had little time left remaining since the average female life expectancy at that time stood at 53.7. However, in 1990, the total fertility rate was 1.6, with most women rushing to have one or two children in quick succession. These days, women usually complete their child-bearing and child-rearing work before they are 35 years of age, and they have before them more than 40 years "tertiary" life, since female life expectancy now stands at 75.4.

The rapid fall in the fertility level deriving from the small family norm, coupled with the lengthening of life expectancy, will continue to encourage women to seek employment outside the home, possibly creating a glut in the labour market.

4. Sex Ratio Imbalance and Marital Behaviour

Rising age at first marriage for women is one major factor that has contributed to the rapid fertility decline over the 1960-1991 period. The female age at first marriage increased from 21.6 in 1960 to 25.5 in 1990, while age at first marriage for men increased from 26.4 to 28.6 during the same period.

However, the fall in the fertility level occasioned, among other things, by the rising age at first marriage for women, has resulted in unintended consequences, owing to the strong preference of Korean parents for boys over girls. Though the strength, rather than the prevalence, of male preference differs, depending on the residence and the educational level of the

parents, evidence.

The result of the 1991 National Fertility and Family Health Survey shows that 63 percent of the rural women aged between 15 and 44 years responded they must have at least one son, while 35 percent of the urban women of the same age category were of the same opinion. (KIHASA, 1992, p.128). Over 62 percent of

Table 9. Sex Ratios by Age and Group : 1990

Age	Sex ratio (M/F)
All ages	101.3
0	114.7
1	113.5
2	111.8
3	107.5
4	112.7
5~ 9	107.1
10~14	106.6
15~19	106.0
20~24	105.8
25~29	104.1
30~34	104.1
35~39	106.2
40~44	105.3
45~49	103.9
50~54	100.3
55~59	87.5
60~64	75.3
65~69	72.5
70~74	64.7
75~79	50.5
80 and over	34.4

Data Source : Refer to Table 5.

women with primary school education level, and 26 percent of women with college education answered they must have at least one son. Though there are indications that the past strong male preference among Korean parents is weakening slowly, one cannot expect the rapid fertility fall to provide a solution to the sex ratio imbalance created by the past strong parental male prefer-

ence.

Data in Table 9, point out that the recent fertility fall is aggravating the sex ratio imbalance. For instance, for those children born between 1986 and 1990 (aged 0-4 years) the sex ratio is consistently higher, compared to those born during the pre-1986 period, an indication that the fertility decline has a deleterious effect on sex

Table 10. Sex Ratio at Birth by Birth Order 1982- 1988

Birth order	1982	1983	1984	1985	1986	1987	1988
All birth orders	106.9	107.7	108.7	110.0	112.3	109.4	113.6
First	105.5	106.0	106.4	106.3	107.6	105.2	107.2
Second	106.1	106.3	107.5	108.2	111.7	109.5	113.5
Third	109.3	112.5	118.5	131.7	141.4	131.8	170.5
Fourth or more	114.2	122.1	131.7	153.8	157.4	157.2	199.1

Data Source : National Bureau of Statistics : *Recent Changes in Vital Statistics and New Population Projection, 1988.*

Table 11. Changes in Sex Ratio of Population in Marriageable – Age Category : 1970-2021 :

Year	Male (a)	Female (b)	Sex ratio (a)/(b)
	(24-29 years)	(20-24 years)	
1970	1,207	1,254	96.2
1975	1,290	1,504	85.8
1980	1,584	2,015	<u>78.6</u>
1985	2,093	2,089	100.2
1990	2,181	2,083	104.7
1995	2,184	2,155	<u>101.3</u>
2000	2,263	1,896	119.4
2005	2,009	1,823	110.2
2010	1,946	1,513	128.6
2015	1,694	1,550	109.3
2021	1,695	1,588	106.7

Data Source : Refer to Table 5.

ratio. In addition, the worsening sex ratio imbalance is attested to by the increasing sex ratio imbalance in the third and higher-order births in the 1982-1988 period as shown in Table 10. The imbalance is, in part, attributable to the fact that the pace of fertility reduction has been faster than the pace at which the parental male preference has been weakening. The rapid fertility fall and the parental male preference during the 1980-90 period is expected to create an extreme sex ratio imbalance in the marriage market in the next two decades. In 2010, the ratio of males 25-29 years old to females 20-24

years old will reach 128.6 (Table 11). However, this unfavourable marriage market situation for males is not likely to be affected greatly by the increase in the number of the females who remain single throughout their lives. In Table 12, it may be seen that the proportion single among women aged 25-29 years increased from 4.9 percent in 1960 to 11.1 percent in 1975 and again to 18.4 percent in 1985. In 1990, about 22 percent of females in this age category were single. This increase reflects increasing age at marriage, rather than an increase in the number of females who intend to remain single

Table 12. Changes in Proportion Single by Age Group : 1960-1990

	1960	1966	1970	1975	1980	1985	1990
Female							
15-19	97.5	96.1	97.1	97.6	98.2	99.1	99.5
20-24	49.0	51.6	57.2	62.6	66.1	72.1	80.7
25-29	4.9	7.7	9.7	11.1	14.1	18.4	21.8
30-34	0.6	1.0	1.4	1.8	2.7	4.3	5.2
35-39	0.2	0.3	0.5	0.6	1.0	1.6	2.6
40-44	0.1	0.1	0.2	0.2	0.5	0.7	1.1
45-49	0.1	0.1	0.1	0.2	0.3	0.4	0.7
50+	0.2	0.1	0.1	0.1	0.1	0.2	-
Male							
15-19	99.3	99.5	99.7	99.8	99.8	99.9	99.9
20-24	87.0	90.0	92.6	93.3	93.1	94.4	96.6
25-29	37.3	38.4	43.4	47.3	45.2	50.7	57.3
30-34	4.7	5.3	6.4	7.1	7.3	9.4	13.7
35-39	0.9	1.0	1.2	1.4	1.7	2.7	3.9
40-44	0.3	0.3	0.4	0.4	0.7	1.1	1.5
45-49	0.2	0.2	0.2	0.3	0.4	0.6	0.9
50+	0.2	0.1	0.1	0.2	0.2	0.3	-

Data Source : Census data for individual years.

throughout their lives. Women have been postponing marriage, but not forgoing it entirely, as is clearly indicated by a negligible increase for the last 30 years in the proportion single among the female population aged 45-49 years. The pattern of universal marriage still seems to prevail in Korea, and there are very few indications that this will come to an end.

VI. Conclusion and Future Policy Directions

With her unusually rapid fall in fertility, Korea now faces the challenges of below-replacement level fertility. Korea finds herself in an awkward situation of having to tackle population problems that are characteristic of developed countries for which she is ill-prepared (Haub, 1991, p. 3).

Korea's population is expected to stop growing in 2021, creating a host of socio-economic as well as demographic problems that few developing countries have confronted so far. To name but a few of them : the ageing of population will be inevitably followed by shortage of labour force; the increasing old-age dependency ratio will place extra burden on the shrinking labour force, and exorbitantly high medical costs for the elderly will increase. In order to meet the many challenges of below replacement-level fertility, the current population control policy should be shifted away from the population quantity-control-oriented family planning approach toward the qualitative family welfare-oriented approach (Cho et al, 1990, p. 162). Therefore, the following areas are suggested for careful consideration in setting out future policy directions of the family planning program.

1. As the national family planning program has achieved its primary objectives of fertility reduction and near universal contraceptive use, the service functions should be gradually taken over by the private sector, including private organizations such as the Planned Parenthood Federation of Korea. The government should continue providing financial support to the private sector engaged in contraceptive services for the poor. In addition, free contraceptive services should be switched to a pay-as-you-go system, excepting the services for low income couples.

2. Although the government in 1985 tried to integrate three types of health workers (FP, MCH and TB) into a multipurpose health worker system responsible for all primary health services, the integration scheme has not been implemented successfully so far. For successful integration of family planning with other health programs, it is essential that organizational and functional integration within the existing public health programs be accomplished, with special efforts directed to : (a) unifying the existing health program network; (b) re-establishing the role and functions of health workers; (c) improving individual worker's capabilities through re-training programs; and (d) developing an integrated management system that includes information and program monitoring.

3. The current family planning program management system with its emphasis on sterilization for fertility limitation should be reformulated, to give a wider choice of reversible methods which are safe, convenient and easily affordable. Every effort should be made to reduce the number of induced abortions, particularly

among younger women.

4. The strong preference for son, which has long been characteristic of Korean families, is frequently cited as a major obstacle to the decline of fertility. A study result shows that the decline of the desired family size but the sustained strong son preference has made the sex of children more important factor of the fertility changes in Korea and the women's education, on the other hand, is becoming a less important factor in fertility over time (N.H.Cho and N.K. Ahn, 1993). It is expected that the effect of son preference will be great at the second parity along with the continuing fertility decline and there will be serious problems due to the sex ratio imbalance in the future. Thus the existing social support policies should be strengthened to maintain a balanced sex ratio. This is developing policy measures to improve women's status and equality of the sexes, expanding social security benefits for support of all old-age parents, and strengthening information, education, and motivation activities for youngsters.

5. The scope of the family planning target population should be expanded to cover the unmarried population in order to prevent premarital pregnancies. A recent KIHASA survey revealed that as many as 28 percent of induced abortions in 1979 involved unmarried females, and the percentage increased to 33 percent in 1990. As age at first marriage increases, a greater number of single persons will be exposed to the risk of pre-marital conceptions for a longer period of time, resulting in a greater number of induced abortions.

6. The ageing of population, resulting from low fertility and low mortality, implies greater

expenditures for the health care support and welfare for the elderly. It also means that the future employment policy will have to shift from its current emphasis on new job creation for young entrants, to development and retraining programs for older workers. As the population of Korea continues to grow old to become an eventually stationary population in about 30 years. Korea's future population policy should be reconsidered if she wishes to avoid the situations faced by the developed countries with a zero or negative population growth rate.

7. Greater effort should be made to make the most use of the increasing female labour force by breaking down the social barriers that have prevented women from entering particular sectors of the labour market.

8. Another focus of attention should be the spatial redistribution of population. As much as 43 percent of Korea's total population is concentrated within the Seoul metropolitan area and its environs accounting for only 12 percent of the southern half of the peninsula.

As Korea is about to complete her demographic transition, she should seriously study new policy directions that can best accommodate the demographic change. Korea is a social laboratory where a demographic experiment has been carried out in advance of schedule.

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