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The Population of Korea

edited by Doo-Sub Kim · Cheong-Seok Kim

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KNSO
Korea National Statistical Office

The Population of Korea

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FOREWORD

The process of counting the number of people in Korea has come a long way. It first began in ancient times and then continued on an ongoing basis from the time of the Chosun Dynasty, the early 15th century. The first modern census was taken in 1925 counting nearly 19.5 million people. Thereafter, a population census was conducted every 5 years. In the sixteenth modern census, carried out in 2000, 46 million inhabitants were counted.

As Korea experienced economic development, the government's and society's interests changed rapidly and became more complex. Inevitably there has been a growing need to obtain accurate information about people and places more frequently and on a continuing basis. This is because policies, social planning, and business strategies are largely shaped by data available at the national level. The census is the primary source of information on population and households on a national scale. As the benchmark statistics for all demographic and socioeconomic figures, the census produces an official count of the population for the entire nation. It characterizes the population at a very detailed geographic level and provides a basic sampling frame for other surveys.

The sincere cooperation and participation of all Koreans has made it possible to disseminate the population census widely. However, as the main agency that

conducts the census, the Korea National Statistical Office recognizes that the dissemination of census data alone is not enough to fully capture these changes or fully grasp the complexity of the lives of Koreans. This book, *The Population of Korea*, is a result of systematic and academic research on population trends of the past 75 years using census data. It aims to keep a historical record of the characteristics and lifestyles of Koreans and to keep census studies abreast of current experiences and methodological developments. I sincerely hope that it will provide useful information on the changes of the Korean population and households as well as set the standard for census reporting and stimulate census studies.

By making the census results more accessible to a wider audience, the editors and the authors deserve much credit and my sincere thanks.

오 종 남

Oh, Jong Nam, Ph.D.

Commissioner

Korea National Statistical Office

March 2004

PREFACE

The Korean population, characterized by typically high levels of fertility and mortality until the beginning of the twentieth century, changed drastically and completed the full pattern of demographic transition by the mid 1980s. However, a silent, pervasive and irreversible revolution is still underway in Korea. The Korean population continues to change dramatically, both in terms of its size and structure. At the turn of the twenty-first century, with an extremely low fertility rate way below the replacement level and an improved life expectancy, population ageing is progressing at a much faster pace than found in most Western countries and Japan.

Population change has major consequences and implications for every sphere of human life, whether many people are aware of its enormous impact on their lives or not. The major aim of this book is to provide an up-to-date and comprehensive picture of the population of Korea. This book intends to help the reader sharpen his or her perception of population growth and change, and its linkage to other facets of society. It offers a composite view of the major demographic structures, processes and dynamics, and reveals various aspects of the Korean population in the twentieth century.

This monograph is an outcome of the second major attempt of its kind

concerning the population of Korea. It is one of the most important contributions to Korean demography. The eleven chapters in this book reflect the various perspectives of a diverse range of contributors. It is our belief that these will advance our knowledge of the demographic conditions and changes in Korea. It is also believed that the collection of these chapters together will help contribute to refine some aspects of existing theories in demography.

This book consists of eleven chapters dealing with a wide range of demographic issues: the stages and characteristics of the Korean demographic transition, data sources for demographic studies, components of population growth, population structure, geographic distribution, Korean communities overseas, and population policies. These issues are examined through the analysis of published reports and micro-data from the sixteen population censuses since 1925 as well as various statistical data on fertility, mortality, marriage and divorce, economic activity, and migration. This book is a substantially reorganized English version of the two-volume work, 『한국의 인구 (*The Population of Korea*)』, published by the Korea National Statistical Office (KNSO) in December 2002. This new volume contains basic data on the census populations from 1925 to 2000, the projected populations for 2000-2050, and the Korean life tables for 2001 as appendix tables.

This monograph has been prepared by the Population Association of Korea and commissioned by the KNSO. In July 2001, the Census Analysis Committee, composed of four scholars and three experts from the KNSO, was established to provide guidance for this project. The eleven subjects were selected by the committee and each chapter was assigned to one to three scholars or experts in the field of demography.

This monograph is intended to serve both as a classroom text for courses on population studies, and as a reference for scholars, analysts, planners and other professionals interested in population matters or have occasion to use the data on the Korean population.

We have tried to reduce discrepancies and disagreements among the authors to a minimum through lively discussions in a series of workshops and various stages of editing. However, the reader should note that the demographic data and the estimates contained in this book are not necessarily identical with

those of other studies on the population of Korea and the official figures issued by the Korean Government. In addition, the views and interpretations expressed in this volume do not represent those of the KNSO or the Korean Government.

Many people have contributed to the success of this project and the publication of this book directly and indirectly. It is impossible to name them all. Nonetheless, we would like to express our special thanks to the Commissioner Jong Nam Oh, Director-General Ju-Dae Sun, Director Kyung-Se Chang, Dr. Ji-Youn Lee, and other members of the KNSO for their continuous support from the beginning of this project. We are also deeply indebted and grateful to Professor Tai-Hun Kim, President of the Population Association of Korea, for his encouragement and help in publishing this volume. Our special gratitude is extended to Mr. Adam Turner who rendered us invaluable editorial assistance and to Mr. Hyo-Jun Park for his help as research assistant. Finally, but most importantly, we would like to thank the contributors who devoted a considerable amount of time and effort preparing and revising the manuscript.

Doo-Sub Kim
Hanyang University

Cheong-Seok Kim
Dongguk University

March 2004

The Population of Korea

CHAPTER 1

Population Growth and Transition Doo-Sub Kim

I. Introduction	1
II. Transition of the Korean Population	2
1. The Traditional Stage	3
2. The Early Transitional Stage	5
3. The Chaotic Stage	7
4. The Late Transitional Stage	9
5. The Re-stabilization Stage	10
III. Causal Mechanisms of Demographic Transition	15
1. Determinants of Fertility Decline	15
2. Relationship between Mortality and Fertility	20
3. Relationship between Migration and Fertility	21
IV. Status of the Korean Population in the World	24
V. Concluding Remarks	30

CHAPTER 2

Population Census and Other Data Sources Min-Kyung Kim

I. Introduction	33
II. Principles of the Population Census	34
III. Evolution of the Population Census	34
IV. Population Census System	38
1. Organization	38
2. Legal Basis	39
V. Methodology of the Population Census	40

1. Concept	40
1) Population	40
2) Household	41
2. Data Collection Method	42
3. Adoption of Sampling Techniques	43
VI. Content of the Population Census	44
1. Changes in Survey Items	45
2. Evolution of Major Items	49
1) Basic items	49
2) Migration and Commuting	51
3) Fertility	52
4) Economic Activity	53
VII. Other Sources of Demographic Data	56
1. Vital Registration	56
2. Resident Registration	58
3. Population Projections	59
4. Relationship between Sources of Population Statistics	60
VIII. Conclusion	61

CHAPTER 3

Fertility

Kwang-Hee Jun

I. Introduction	65
II. An Outline of the Fertility Transition	67
1. The Pre-transition	67
2. The First Transition	69
3. The Second Transition	70
III. The Transition Mechanisms	72
1. Intermediate Variables	72
2. Marriage Proportion	73
3. Marital Fertility	75
4. Imbalance of Sex Ratios at Birth	77
IV. The Future Course of Current Fertility	79
V. Summary and Conclusion	88

CHAPTER 4**Mortality**

Tai-Hun Kim

I. Introduction	90
II. Mortality Trends and Patterns	92
1. Mortality Transition	92
2. Trends in the Crude Death Rate	94
3. Age-Sex Specific Pattern of Mortality	95
1) Age-Specific Death Rate by Sex	95
2) Life Expectancy by Sex	97
4. Korean Mortality Patterns and Model Life Tables	98
1) Mortality Patterns by Sex and Age	98
2) Mortality Patterns and Model Life Tables	99
III. Mortality Differentials	100
1. Data and Methods of Analysis	101
1) Data	101
2) Mortality Level by Population Characteristics	102
3) Mortality Changes Due to Changes in Population Composition	103
2. Mortality Differentials by Educational Attainment	104
3. Mortality Differentials by Marital Status	106
4. Effects of Population Composition on Mortality	110
IV. Mortality by Cause of Death	111
1. Trends and Patterns of the Causes of Death	111
2. Causes of Death by Age and Sex	115
V. Summary and Conclusion	118

CHAPTER 5**Age-Sex Structure and Ageing**

Nam-Hoon Cho, Yong-Chan Byun, and Keong-Suk Park

I. Introduction	121
II. Changes in Age and Sex Structure, 1960-2000	122
1. Population Size	122
2. Age and Sex Composition	123
3. Imbalance of Sex-Ratio at Birth	125

4. Urban–Rural Differences in Age Structure	127
5. Age Structure of the Labor Force	127
III. Future Age and Sex Structure, 2000–2050	129
1. Population Size and Composition	129
2. Change in Age of Labor Force Population	131
3. Dependency Ratios	132
IV. Socioeconomic Characteristics of the Older Population	133
1. Changes in Intergenerational Support	133
2. Economic Status of the Elderly	136
1) Poor Economic Status of the Elderly and Increasing Inequality in Later Life	136
2) Ambivalence of Response to Ageing in the Work Force	139
3) Health and Healthcare for the Elderly	140
V. Conclusion	141

CHAPTER 6

Marital Status

Wha–Soon Byun

I. Introduction	143
II. Change of Marital Status	145
1. Marriage Rate and Divorce Rate	145
2. Population Composition by Sex and Marital Status	148
III. Single Men and Women	149
IV. Marriage and Remarriage	153
1. Age at First Marriage	153
2. Number and Rate of Remarriage	155
V. Divorce	156
1. Changes in the Divorce Rate	156
2. Divorce by Duration of Marriage	157
3. Reasons for Divorce	158
VI. Conclusion	159

CHAPTER 7**Household and Family**

Cheong-Seok Kim

I. Introduction	161
II. Changes in the Household: An Overview by Household Unit	164
III. Household Composition of Individuals	167
1. Households of Ordinary Household Members	168
2. One-Person Households among Unmarried Persons	172
3. Couple-Only Households among Married Persons	173
IV. Living Arrangements of Children and the Elderly	175
1. Living Arrangements of Children	175
2. Living Arrangements of the Elderly	178
1) Household Composition of the Elderly	179
2) Relationship of the Elderly to the Household Head	182
V. Proportions and Characteristics of Female Household Heads	185
1. Proportion of Males and Females as Household Head	185
2. Characteristics of Household Head by Sex	187
VI. Conclusion	191

CHAPTER 8**Labor Force Participation, Occupation and Industry**

Kyonghee Min and Ki-Soo Eun

I. Introduction	194
II. Labor Force Participation	195
1. Labor Force Participation Rates, 1930-2000	195
1) Definitions of the Labor Force	195
2) Trends in Labor Force Participation	196
2. Labor Force Participation Rates by Age, Sex, and Education	198
3. Age Composition of the Labor Force	201
4. Labor Force Participation by Marital Status	201
5. Labor Force Participation by Residential Location and Migration	202
1) Labor Force Participation Rates by Size of City	203
2) The Effect of Migration Experience on Labor Force Participation	206

6. Informal Sectors in Urban Areas	208
III. Occupation and Industry	208
1. Occupational Composition by Age and Sex	208
1) Changes in Occupational Structure by Sex	210
2) Characteristics of Age by Occupation	215
3) Men's Occupations and Women's Occupations	217
2. Recent Trends in Industrial Composition	219
IV. Conclusion	222

CHAPTER 9

Population Distribution, Internal Migration and Urbanization

Jin Ho Choi and Se-Hoon Chang

I. Introduction	225
II. Data	226
1. Population Census	226
2. Civil Registration	227
3. Sample Survey	227
III. Research on Internal Migration and Urbanization	228
IV. Population Distribution and Internal Migration	231
1. Population Distribution	231
1) Population Distribution by Province	231
2) Population Concentration in the Capital Region	234
2. Internal Migration	236
1) Migration Trends	236
2) Reasons for Moving	238
3) Migration in the Capital Region	239
V. Urbanization	241
1. "Compressed Urbanization"	241
2. Role of Rural-to-Urban Migration in Urbanization	244
3. Urbanization and Changes of Inter-city Hierarchy	246
VI. Conclusion and Policy Implications	249

CHAPTER 10**International Migration and
Korean Communities Overseas**

Tai-Hwan Kwon

I. Introduction	252
II. Overview of International Migration	253
1. Beginning of the Diaspora	253
2. Exodus during the Colonial Era	255
3. Liberation and Return Movement	258
4. Migration to the "New World"	260
III. Korean Community in China	263
1. Community Characteristics	263
2. Population Trends and Community Crisis	265
3. Identity Crisis and Changes in the Value System	267
IV. Korean Community in Japan	269
1. Social Status and Discrimination	269
2. Population Dynamics	271
3. Identity Questions	274
V. Koreans in the United States	276
1. Population Trend	276
2. Characteristics of Korean American Community	277
3. Generation and Identity	281
VI. Concluding Remarks	282

CHAPTER 11**Population Policies**

Sang-Tae Park

I. Introduction	285
II. Population Policies and Thoughts on Population	286
1. Optimistic and Pessimistic Views in East Asia	287
2. Remarks on the New Population Policy	288
III. Policies Affecting Fertility	289

1. Low Fertility—A New Social Problem	289
2. World Fertility Decline and Policy Turnabout	290
3. Policy Implications for Fertility	292
IV. Policies Affecting Mortality and Health Conditions	294
V. Policies Affecting Population Distribution	295
1. Population Redistribution Policies	295
1) Return of Rural Migrants	296
2) Rural Development	296
3) Decentralization of Industry	297
4) Construction of New Towns	297
5) Development of Growth Poles	297
2. Views on the Population Concentration of the Seoul Metropolitan Area	298
3. Expansion of the Seoul Metropolitan Area and National Development	299
VI. Age Structure and Ageing	301
1. Demographic Significance of Age Structure	301
2. Social and Economic Effects of Ageing	302
3. Policy Implications of Ageing	304
VII. Sex Structure and Gender Inequality	306
VIII. International Migration and Foreign Labor	308
1. Streams of Migration	308
2. Recent Policies for Labor Migration	309
IX. Concluding Remarks	310
 Bibliography	 313
Appendix	331

POPULATION GROWTH AND TRANSITION

Doo-Sub Kim

I. Introduction

The Korean population, characterized by typically high levels of fertility and mortality until the beginning of the twentieth century, changed drastically and completed the full pattern of demographic transition within a period of 70 to 80 years. Korean society has experienced rapid declines in the level of fertility and mortality since modernization in the 1960s. Since the second half of the 1980s, vital rates have been approaching the low level found in western countries. In particular, the recent decrease in birth rates has been more drastic, in terms of speed and magnitude, than most demographer forecasts. Under the current age structure, the Korean population is projected to experience a rapid decrease in absolute number from the early 2020s (KNSO, 2001a).

Despite the amount of research on declining fertility and mortality rates, there have only been a few studies in Korea covering the whole span of the transition. The nature and theoretical basis of the Korean demographic transition has not yet been sufficiently explored. We do not have satisfactory explanations of the mechanisms and socioeconomic determinants of the transition. Nor is it clear what causal mechanisms operated in the relationship among the

components of the population growth.

In this chapter, the Korean demographic transition is divided into five stages according to the levels of fertility, mortality and migration. The main objectives are to examine the major characteristics of each stage, and to develop explanations of why and how Korea passed through the fertility transition. To provide a satisfactory framework and means for wider empirical generalization, major factors which influenced the components of the population growth are explored. An analysis of the relationship between mortality and fertility in the process of transition is undertaken. Attention is also focused on whether migration can be incorporated into the demographic transition. Finally, a comparison of major demographic indicators between Korea and other regions of the world is provided in this chapter.

II. Transition of the Korean Population

Based on changes in the level of fertility, mortality, migration, and population growth along with major political and socioeconomic factors in Korean society during the past 100 years, the Korean demographic transition can be divided into five stages:

- ① The Traditional Stage (to 1910)
- ② The Early Transitional Stage (1910-1945)
- ③ The Chaotic Stage (1945-1960)
- ④ The Late Transitional Stage (1960-1985)
- ⑤ The Re-stabilization Stage (1985 to present).

A brief review of the history of the Korean demographic transition is provided in the following sections.

1. The Traditional Stage

The first Korean census in the modern sense was undertaken in 1925. Prior to 1925, we do not have reliable demographic data, and relatively little has been explored concerning the level and trends of population growth. Household and population registry data from the Chosun Dynasty published in 1789 tabulated the population size at 7,404,000. Using this data, Kwon and Shin (1977) corrected the population size as 18,296,000 and D.S. Kim (1990) projected it to be 17,202,000. If we accept these corrections, the completeness of the household and population data of this period is merely about 40-43 percent. In sum, only a vague projection of the population size and growth of the Chosun Dynasty is possible.

From the perspective of demographic transition, Korea was in the traditional stage, characterized by high fertility and mortality levels, until 1910 resulting in almost negligible population growth. Until the end of the Chosun Dynasty, Korea was a typical agrarian society. The CBR (crude birth rate) was stabilized at high levels of 35-45% in this stage. Mortality fluctuated mainly due to epidemics, famine and war, but the CDR (crude death rate) was estimated to have maintained high levels of 30-35%. Some emigration of Koreans was reported in this stage, but the amount was inconsequential.

It appears that during the early period of the Chosun Dynasty the pace of population growth was relatively rapid in combination with socioeconomic stability and technological development. Since its middle period, however, the Chosun Dynasty experienced sporadic fluctuations in the level of mortality and even population decreases due to socioeconomic unrest resulting from epidemics, famine and war. Thus, during the Chosun Dynasty, the population was under "the Malthusian law of positive check". It is estimated that the population grew very slowly at an annual rate of 2% throughout the 500 years of the Chosun Dynasty (T.H. Kwon and D.S. Kim, 2002: 247). Table 1.1 and Figure 1.1 show that at the end of the traditional stage (1910), the Korean population was estimated at 17,427,000.

Table 1.1 Population Growth in Korea, 1910-2000

Year (Month, Day)	Population (in 1,000s)	Annual Rate (%) of		
		Natural Increase	International Migration	Total Increase
Prepartition Korea				
1910 (10. 1)	17,427*			
1915 (10. 1)	17,656*	4.0	-1.4	2.6
1920 (10. 1)	18,072*	7.0	-2.3	4.7
1925 (10. 1)	19,020	12.0	-1.8	10.2
1930 (10. 1)	20,438	18.7	-4.3	14.4
1935 (10. 1)	22,208	20.2	-3.6	16.6
1940 (10. 1)	23,547	20.6	-8.9	11.7
1944 (5. 1)	25,120	20.2	-2.2	18.0
South Korea				
1945 (9. 1)	16,136*			
1949 (5. 1)	20,167	18.9	41.9	60.8
	19,904**			
1955 (9. 1)	21,502	7.0	5.3	12.3
1960 (12. 1)	24,989	28.7	-0.1	28.6
1966 (10. 1)	29,160	26.6	-0.1	26.5
1970 (10. 1)	31,435	19.0	-0.2	18.8
1975 (10. 1)	34,679	20.2	-0.6	19.6
1980 (11. 1)	37,407	15.9	-1.0	14.9
1985 (11. 1)	40,420	16.4	-0.9	15.5
1990 (11. 1)	43,390	14.9	-0.7	14.2
1995 (11. 1)	44,554	10.7	-5.2	5.3
2000 (11. 1)	45,985	9.0	-2.7	6.3

* Estimated.

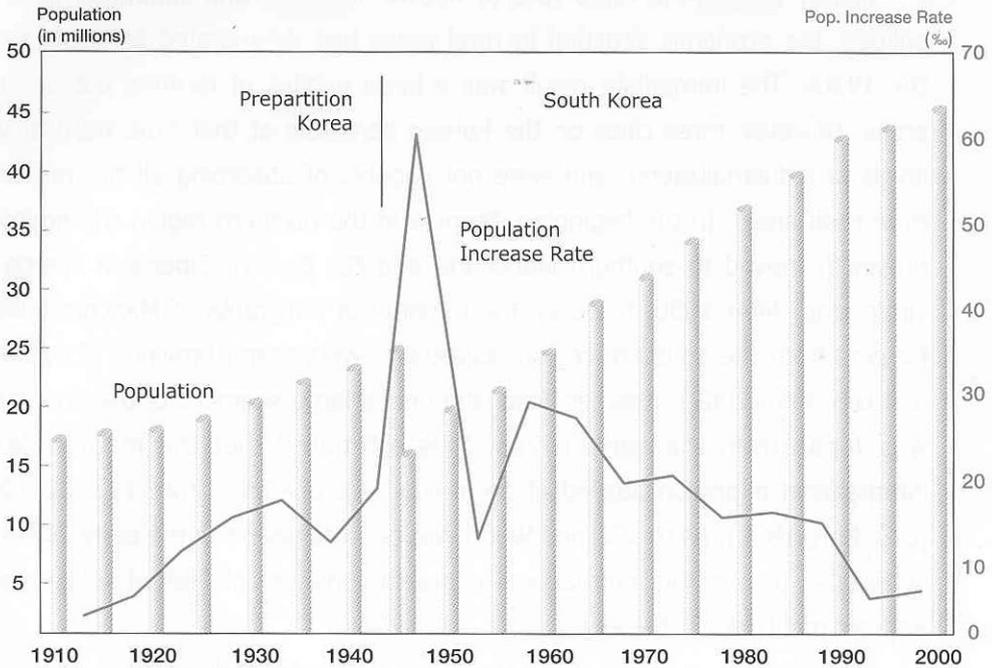
** For 1955 boundary.

Notes: 1) Foreign residents are excluded from this table.

2) The population figures in this table are from the census results. Estimation of annual increase rates can be affected by the differences in the completeness of the census.

Source: T.H. Kwon et al. (1975: 7); D.S. Kim (1992, 1993); KNSO (1997, 2001j).

Figure 1.1 Population Growth Trend and Rate of Population Increase in Korea, 1910-2000



2. The Early Transitional Stage

After the annexation of Korea by Japan in 1910, the Korean population entered the early transitional stage (1910-1945). Mortality started to decline in the early colonial years with the introduction of preventive care and effective medical institutions. Figure 1.2 shows that the CDR, which maintained a level of 34‰ from 1910 to 1915, dropped to 23‰ from 1940 to 1945. In contrast, due to improving health conditions and medical facilities, the CBR increased substantially until the early 1920s although the trend was reversed for the remaining period of this stage. It is estimated that the CBR increased from a level of 38‰ to 42-45‰ from 1910 to 1945.

As a result, the Korean population grew at an increasingly rapid rate throughout the colonial period with the exception of the intercensal period 1935-1940. This exception is mainly due to heavy emigration across the border. The annual rates of natural increase remained at a high level of over 20‰ from 1930

to 1944. The population increased to 25,120,000 in 1944, revealing a 44.1 percent increase from 1910.

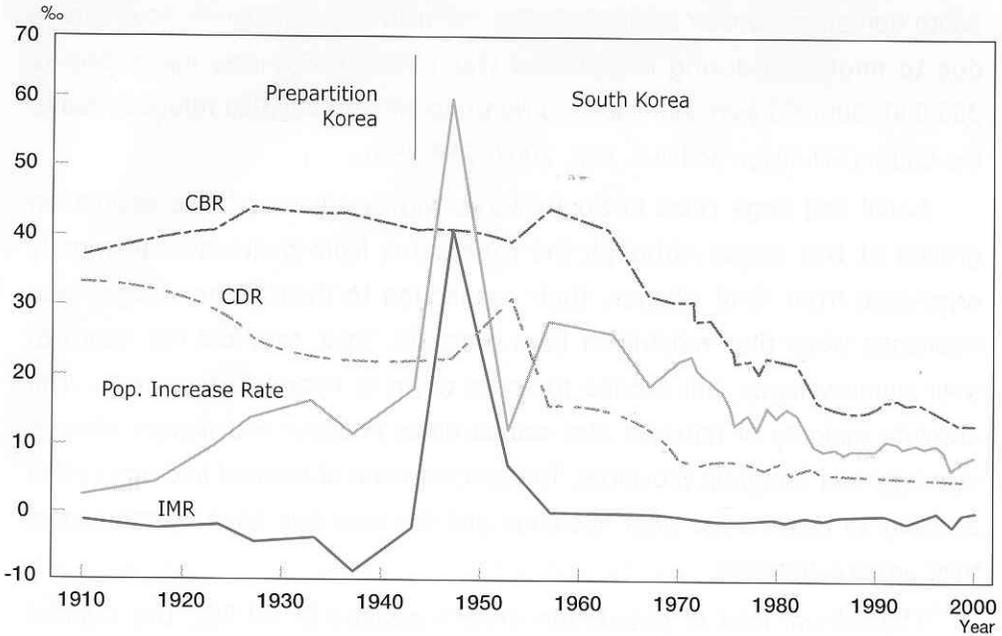
Mainly due to the rapid rate of natural increase and Japanese colonial policies, the economic situation in rural areas had deteriorated seriously since the 1920s. The immediate result was a large exodus of farmers out of rural areas. However, most cities on the Korean peninsula at that time were at low levels of industrialization, and were not capable of absorbing all the migrants from rural areas. In the beginning, farmers in the northern region (Hamgyeong Province) moved to southern Manchuria and Far Eastern Siberia in search of virgin land. After 1930, however, the majority of emigrants to Manchuria were farmers from the southern region, especially Gyeongsang Province (T.H. Kwon and D.S. Kim, 2002). Another destination for a large segment of the emigrants was Japan from the early 1920s. It is estimated that the magnitude of international migration peaked at an annual rate of -8.9% from 1935 to 1940 (D.S. Kim, 1999). As the Second World War became severe in the early 1940s, a substantial part of the international migrants consisted of drafted soldiers and workers mobilized for the war.

In the early transitional stage, the size and growth of the population became a function of the combination of international migrants as well as births and deaths. It is clear in Table 1.1 and Figure 1.2 that the international migration rate exerted a strong effect on shaping the rate of population increase during the entire colonial period.

Internally, the massive exodus of farmers also stimulated urbanward migration in the early transitional stage. A large segment of the population out of the rural areas moved to urban areas in the peninsula, resulting in a rapid rate of urbanization. In particular, harbor cities that functioned as bridgeheads for Japanese invasion and exploitation experienced rapid growth. Some industrial cities also developed in the later colonial period.

It is noteworthy that the massive migration in this stage resulted in a rising age at marriage because many young migrants leaving rural areas had to postpone marriage. After migrating to the place of destination, they also tended to postpone marriage until they settled down and got stabilized economically.

Figure 1.2 Population Increase Rate and Its Components in Korea, 1910-2000



3. The Chaotic Stage

Due to its apparent uniqueness in the pattern of the demographic evolution, the next stage is called the chaotic stage (1945-1960). In the middle of the 20th century, Korea experienced a series of events of special significance to demographic transition: liberation from Japanese colonial rule and partition of the country (1945), and the Korean War (1950-1953). Population data for North Korea after partition is not widely available or reliable, thus, the following discussions on the demographic transition after 1945 are limited to South Korea. It should also be noted that the boundary between North and South Korea was changed from the 38th parallel to the demilitarized zone.

The population of South Korea at the time of liberation in 1945 is estimated to be 16,136,000 (Table 1.1). Despite political turmoil, social unrest, and immense destruction of the economy, the population of South Korea increased drastically at this stage. This was largely due to the massive influx of repatriation from overseas after liberation and refugee migration from the North to the South during the war. The magnitude of the repatriation movement from Japan, Manchuria and North Korea for the period of 1945-1949 after liberation is

estimated to have been 2.1-2.5 million, which composes 10-12 percent of the South Korean population as of 1949. The net gain of population in South Korea due to migration during the Korean War (1950-1953) was estimated as 350,000: 300,000 were kidnapped to North Korea, and 650,000 refugees fled to the South (T.H. Kwon and D.S. Kim, 2002: 254-255).

Seoul and large cities in South Korea witnessed remarkable population growth at this stage. Although the repatriates from overseas had mostly originated from rural villages, their connection to their home-villages was weakened when they repatriated from overseas. Thus, they did not return to their home-villages, but tended to settle down in nearby urban areas. The absolute majority of refugees also settled down in Seoul and nearby cities in Gyeonggi and Gangwon provinces. The concentration of medical and other relief activities in urban areas after liberation and the war may have contributed to their urban settlement.

The annual rate of population growth peaked at 60.8‰, the highest recorded in the history of Korea, from 1945 to 1949. The population continued to increase rapidly from the late 1950s, and reached an annual growth rate of 28.6‰ from 1955 to 1960.

The mortality situation was quite unusual in the chaotic stage. Direct and indirect casualties during the Korean War were extremely heavy: the total number of deaths reached 1.29 million. The CDR was estimated to be around 32‰ for the period of 1950-1955. However, due to antibiotics and other new medicines introduced during the Korean War by the United Nations forces, Korea experienced a marked decline in mortality, especially infant and child mortality, after the war. The CDR declined to 16.1‰ from 1955 to 1960, revealing a 51.2 percent reduction from the CDR of 1950-1955.

In the chaotic stage, fertility remained at a relatively high level despite socioeconomic and political disturbances. Separation of many couples, postponement of marriage, and a marked increase in the proportion of widowed women should have lowered the level of fertility to some degree during the Korean War years. However, as shown in Figure 1.2, no drastic decline in fertility occurred during this period. The CBR was estimated as 42‰ and 40‰ for 1945-1950 and 1950-1955, respectively.

Korea witnessed a post-war baby boom after the end of the war. Birth rates continued to rise in the second half of the 1950s and the early 1960s. Despite the economic insecurity of the period, many couples did have births which they had postponed during the war. Figure 1.2 clearly shows that fertility actually went up before it started to decline. The level of CBR during this period was equivalent to or even higher than the level observed for the period of 1925-1945. This pattern is also reflected in the TFR (total fertility rate). The estimated TFR was 5.6 from 1950 to 1955, and it increased to 6.3 from 1955 to 1960 (D.S. Kim, 1992).

It is interesting to note that birth rates rose before people could adjust their reproductive behavior to meet the new situation of low mortality. A similar pattern can be observed in the course of the demographic transition in England. After the decline of mortality rates, with fewer families broken by death and with earlier marriages, English fertility had increased substantially for almost 30 years before it started to decline in the late 19th century (Weeks, 1989: 138). This also leads to the possibility that there may be a threshold level of population pressure below which major fertility decline is not easily triggered.

4. The Late Transitional Stage

The year 1960 marked an important turning point in the demographic transition of Korea. The population of Korea entered the late transitional stage (1960-1985). A very rapid and drastic reduction in fertility and a continued decline in mortality took place from 1960 to 1985. As a result, a rapid decline in the rate of population growth was recorded at this stage. The annual rate of population growth for 1980-1985 was 15.5‰, showing a reduction of 11 points from that of the intercensal period 1960-1966 (Table 1.1).

Since the government adopted population control policies in 1962, a family planning program became an integral part of government development plans in Korea. The government's adoption of population control policies along with socioeconomic development undoubtedly caused a very significant decline of fertility in the late transitional stage. A significant reduction in infant and child mortality, economic hardship after the war, increasing educational costs of

children, and changing socioeconomic structure, particularly of cities, contributed to the reduction in fertility (D.S. Kim, 1987a). The CBR for 1960-1965 was estimated to be 41.7‰ and the TFR reached 6.0. The corresponding figures declined to 16.2‰ and 1.67 in 1985 (T.H. Kwon and D.S. Kim, 2002: 264; KNSO, 2003a).

Mortality also showed a substantial decline in the late transitional stage, although the pace of the decline became modest after the late 1970s (Figure 1.2). Life expectancy for men and women, which was at the level of 48.5 and 55.9 years, respectively, from 1960 to 1965, increased to 65.9 and 72.7 years in 1985. The level of infant mortality also declined rapidly from 87‰ for the period of 1960-1965 to 23.7‰ in 1985 (T.H. Kwon and D.S. Kim, 2002: 267). It can be regarded as an outcome of the expansion of health and medical services, both of which began to improve in the early 1960s along with socioeconomic development. The launch of the family planning program also contributed to the decline of female death rates, directly and indirectly.

International migration became negligible after the Korean War. A slight increase in emigration was observed after 1970, but the number of emigrants was estimated at only 30-40 thousand per year. In Table 1.1, the annual rates of international migration did not exceed -1.0‰ in the late transitional stage (1960-1985). The net loss of population due to international migration is estimated as 630,000 from 1962 to 1985 (T.H. Kwon and D.S. Kim, 1990: 317). This implies that the size and growth of population was not seriously affected by international migration in the late transitional stage. Thus, the population of Korea can be regarded as almost "closed" after 1960.

5. The Re-stabilization Stage

There is little doubt that the year 1985 marked another important turning point in the history of Korean demography. The population of Korea entered the re-stabilization stage, and has been approaching a stable population with negative growth potential. Table 1.1 shows that the annual growth rate was 6.3‰ for 1995-2000, revealing a 78.0 percent reduction from the growth rate of 1955-1960. According to the 2000 census, however, the Korean population

reached 46.0 million, representing a growth of 113.9 percent in the past 45 years.

According to KNSO (2001a) projections, the population of Korea will exceed 50 million in 2013, and reach a peak of 50.7 million in 2023. The population is then likely to begin declining in absolute numbers, and could fall to 44.3 million by 2050. However, considering the recent trend in the reduction of fertility rates, the change to population decline is likely to come even earlier than the timing projected by the KNSO. The downward trend in the annual rate of population increase is presented in Table 1.2. It is also projected that, along with rapid population ageing, the female population will exceed the male population by 2024. The sex ratio is expected to decline to 96.3 in 2050.

Korea has witnessed a continued decline in the level of fertility in this stage, even though a slight upturn was noticed in the early 1990s. Since then, the fertility transition has continued to accelerate recently (Figure 1.3). Despite prevailing gender inequality and preference for sons, small-family-oriented values, attitudes and norms have been disseminated widely along with recent socioeconomic development, and have accelerated the fertility transition. The underlying key factors are a rising standard of living, strong motivation for upward mobility, and the rising educational costs of children. A similar phenomenon has also been observed in Taiwan and Singapore.

According to recent vital statistics, as of 2001, the CBR and the TFR were estimated to be 11.6‰ and 1.30, respectively (KNSO, 2003a). As shown in Figure 1.3, the total number of births was estimated as 557,000 in 2001, down from 1,007,000 in 1970. The TFR has recorded at 1.17 in 2002, the lowest level in the history of Korea. The pace and extent of the ongoing fertility decline have turned out to be well beyond most demographer forecasts. The current level of fertility in Korea is now way below the replacement level, and is lower than those in developed countries including the United States.

Facing an unprecedented decline in fertility, the Korean government abolished anti-natal population policies in 1996, and adopted an approach enhancing the quality of life and welfare services. In response to very low levels of fertility and the socioeconomic consequences of the resultant population ageing, many demographers and policy makers are expressing concern about

Table 1.2 Projected Population of Korea, 2000-2050

Year	Total Population	Male Population	Female Population	Sex Ratio	Annual Rate (%) of Population Increase
2000	47,008,111	23,666,769	23,341,342	101.4	-
2010	49,594,482	24,932,771	24,661,711	101.1	5.4
2020	50,650,260	25,377,186	25,273,074	100.4	2.1
2030	50,296,133	25,046,468	25,249,665	99.2	-0.7
2040	48,204,474	23,836,935	24,367,539	97.8	-4.2
2050	44,336,997	21,751,590	22,585,407	96.3	-8.4

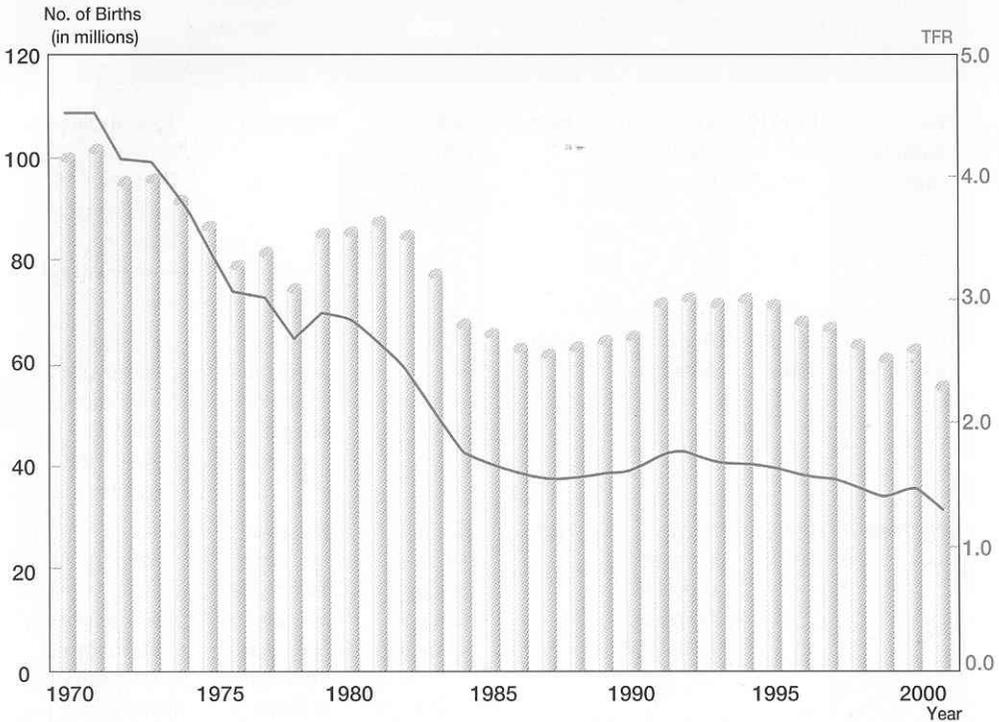
Source: KNSO (2001a).

the profound shift in the composition of the dependent and working-age populations. The Korean government is now ready to shift to pro-natal policies aimed at boosting the very low level of fertility and delaying the speed of ageing. Plausible policy options focus on helping families by providing child allowances, childcare leave, a childcare system, and tax incentives based on the number of children. Another set of policy options is to consolidate the role of women as both mothers and workers by improving the flexibility of the labor market. A new direction of policy measures aims to improve women's social status and gender equality.

Although the pace has not been so marked, the CDR continued to decline in the re-stabilization stage, and became stable at a low level (Figure 1.2). The modest reduction in the pace of CDR decline can be attributed to the changing age structure of the population, i.e., a rapid increase of the elderly population. The CDR declined from 6.0‰ to 5.2‰ from 1985 to 2000. The life expectancy for men and women was estimated to have reached 72.1 and 79.5 years, respectively, in 2000 (KNSO, 2001a). The government's adoption of a national medical insurance system and the widening accessibility of medical facilities are expected to lead to a substantial further decline of mortality in Korea.

Finally, the international migration of the Korean population has been almost negligible in the re-stabilization stage, and the Korean population remained "closed". According to government statistics, a net loss of a mere 10,000 people was recorded from international migration in 2000. As far as the destination was

Figure 1.3 Trend in the Number of Births and the Total Fertility Rate in Korea, 1970-2001



concerned, the overwhelming majority (95.0 percent) of emigrants were found to have moved to Canada and the United States (MOFAT, 2001).

So far, we have examined the nature and characteristics of the demographic transition in Korea. The demographic transition in the Korean Peninsula started in the early 1910s. It is generally agreed that Korea completed the full pattern of demographic transition by the mid 1980s. Considering that it took 150-200 years to complete the demographic transition for most European countries, Korea passed through the demographic transition within a short period of time. The main discussion on each stage in the course of the transition is summarized in Table 1.3.

Table 1.3 Demographic Transition and Related Factors in Korea

Stage	Period	Population Growth	Fertility	Mortality	International Migration	Political and Socioeconomic Factors
The traditional stage	to 1910	Very low and stable increase	High	High with fluctuation	Negligible	Typical agrarian society/ Mortality fluctuated due to famine, epidemics and war
The early transitional stage	1910-1945	Rapid increase	High	High/ Rapid decline began	Massive emigration of farmers to Manchuria and Japan	Japanese colonial rule/ Introduction of medical facilities and medicine
The chaotic stage	1945-1960	Rapid increase except for the period 1949-1955	High	Medium but high mortality from 1949-1955	Massive influx from Manchuria and Japan/ Refugees from North to South Korea during the War	Liberation, partition of the country, the Korean war, social turmoil, economic hardship
The late transitional stage	1960-1985	Continued decline in growth rate	Rapid decline	Continued decline	Slight increase in emigration after 1970	Modernization, economic development, urbanization, family planning program
The re-stabilization stage	1985 to present	Approached stable stage with negative growth potential	Under replacement level	Further substantial decline	Maintained low level	Sustained economic growth, social development, expansion of education, changes in life-style, medical insurance

Source: T.H. Kwon and D.S. Kim (2002: 260); D.S. Kim (1991, 1992, 1993).

III. Causal Mechanisms of Demographic Transition¹⁾

1. Determinants of Fertility Decline

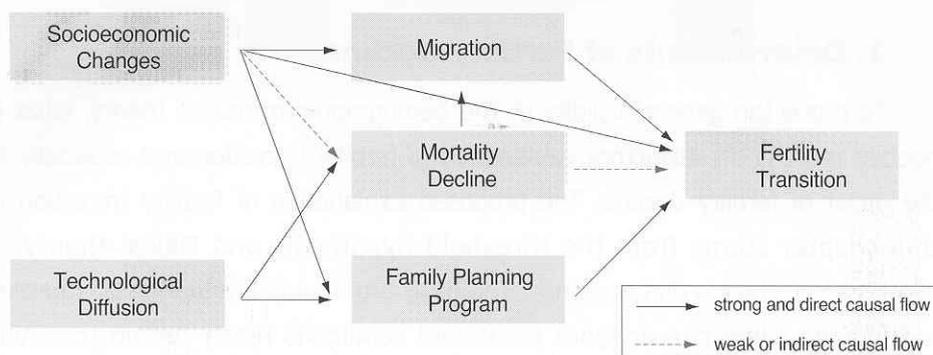
To prove the general validity of the demographic transition theory, what is needed most is a satisfactory explanation of fertility transition and especially of the onset of fertility decline. The proposed explanation of fertility transition in this chapter stems from the threshold hypothesis and Davis' theory of demographic change and response. The basic arguments are that fertility decline is triggered when one or more associated conditions reach certain threshold values, and that people under heavy population pressure tend to use every demographic means possible to maximize their new opportunities (Davis, 1963). Figure 1.4 presents the key concepts and the causal mechanism of the fertility transition in Korea.

The most prominent conditions for fertility decline are economic development, and changes in social values, norms and socioeconomic institutions (Srikantan, 1982: 267). In the literature, socioeconomic change emerges as a sufficient cause of fertility decline in Europe, though not a necessary one. The underlying assumption of demographic transition theory, at least as originally conceived by Notestein (1953), is that industrialization and its concomitant urbanization are preconditions to fertility transition (Caldwell, 1982).

Other factors to be emphasized as determinants of fertility transition are migration and mortality decline. In most societies under heavy population pressure, either international or internal out-migration seems to be preferred over marital fertility control, and results in a delayed decline of fertility (Friedlander, 1969; Mosher, 1980a). The onset of mortality decline is also taken to be the major determinant of fertility transition. Although there are disagreements among demographers about the causality between mortality and fertility, a downward trend in mortality is generally regarded as the starting point in the analysis of fertility transition. The causal relationship between these two has been widely acknowledged in many empirical studies (Nerlove and Schultz,

1) An earlier version of this section was published in D.S. Kim (1992).

Figure 1.4 Causal Mechanism of Fertility Transition in Korea



1970; Schultz, 1973; Gregory and Campbell, 1976; Mauldin and Berelson, 1978).

A third set of arguments centers on the roles attributed to technological diffusion and family planning programs. The experience of developing countries suggests that the principal force accounting for mortality decline has been the diffusion of western technology. Imported technology has made disease control, sanitation measures and medical care possible regardless of internal socioeconomic changes. In the past several decades, many governments in underdeveloped countries have introduced various family planning programs with financial and technological help from international organizations. Undoubtedly, the process of fertility transition was greatly prompted by these programs.

The proposed model in Figure 1.4 is intended to explain the movement of fertility rates from the early transitional stage to the late transitional stage in Korea. During the early period of modernization (1910-1945), declining death rates and sustained birth rates resulted in a rapid natural increase. This increase occurred in the context of urban-industrial expansion under Japanese colonial rule. The dominant rural demographic response was migration to the expanding urban areas. The pace of urbanization had been very rapid during this period. The annual urban growth rate was estimated to be 129.4% from 1935 to 1940 (Table 1.4). Labor surplus in rural areas also induced international migration. As previously mentioned, Koreans responded to population pressure by migrating to

Manchuria and Japan.

Koreans used out-migration as their main response in the early transitional stage (1910-1945). Out-migration, both internal and international, was preferred to marital fertility control, which requires a re-definition of traditional sex and marital roles. Demographic observations suggest that early marriage continued to prevail, and fertility remained at a high level in this stage (T.H. Kwon et al., 1975; D.S. Kim, 1987b).

Despite political and socioeconomic turmoil, fertility continued to be stable at a high level in the chaotic stage (1945-1960) in Korea. Figure 1.2 discloses a mild downward pattern of the CBR from 1945 to 1955, but the trend was reversed by the post-war baby boom in the late 1950s. It was not until the early 1960s that the socioeconomic conditions appeared to have matured sufficiently for the onset of fertility transition in Korea.

Substantial marital fertility declines occurred in the early 1960s, approximately one-half century after the initiation of mortality reduction. The shift from "natural fertility" to "controlled fertility" was made as the following three prerequisites were met: first, fertility was within the calculus of parental choice; second, reduced fertility was seen as advantageous; and finally, effective techniques of contraception were widely available at minimal cost (Coale, 1974; Jones, 1990).

The initial fertility decline was a joint product of favorable socioeconomic conditions and the national family planning program. In the early 1960s, Korea had already achieved a relatively low level of infant mortality and a high level of educational achievement. Income, female labor force participation, and all the other development indicators rose steadily throughout the fertility transition and the subsequent period.

Davis (1963) argued that fear of relative deprivation, rather than the threat of famine or absolute deprivation, is a subjective stimulus to limiting fertility. It is important to note that, in Korea, the rising standard of living gave rise to declining fertility by raising expectations of upward mobility as well as creating fears of social slippage. With an increase in population concentration in the urban areas, a larger proportion of the population was exposed to a modern industrial

environment, and the high child costs associated with it provoked low fertility-oriented norms, values and attitudes. In other words, socioeconomic conditions in the early 1960s became favorable for shifts to social and administrative pressures bearing on fertility-related attitudes and behaviors.

As far as the demographic responses were concerned, emigration outlets were no longer available after the end of the Korean War. In addition, remaining single has never been culturally supported in Korea. Fertility control, therefore, seems to have been the only alternative for the Korean population in the 1960s. This meant that Koreans were fairly ready to accept and practice contraception. In fact, even before the launch of national family planning programs, induced abortion was widespread in urban areas as a method of birth control, and women's age at marriage continued to rise (T.H. Kwon and D.S. Kim, 2002: 262, 306).

Government-organized family planning efforts have been vigorous and successful in providing contraceptives. From its initiation in 1962, the strategy of the program was to begin in rural areas, then move to the cities in the 1970s, and finally to specific target groups in the 1980s (D.S. Kim, 1989). The message in the high-profile propaganda campaign changed over the years from "plan your family" or "three-children families" at the beginning to "girl or boy: one is enough" in the 1980s. The program also introduced financial, legal and other disincentives to childbearing. Due to these efforts as well as changing socioeconomic conditions, Korea experienced a drastic decline in fertility unprecedented in other countries.

It is argued that the diffusion of contraception, rising age at marriage, and the increase in induced abortion were three major factors causing the fertility transition in Korea. Contraceptives became available in Korea in the early 1960s mainly through the family planning program. During the first half of the 1960s, contraception was mainly practiced by women in their late reproductive age who already had a sufficient number of children and, particularly sons (T.H. Kwon, 1981: 28-29). Contraception, therefore, contributed relatively little to fertility decline during the first half of the 1960s. However, since 1965 the diffusion of contraception has been the most responsible for changes in the level of fertility (D.S. Kim, 1987a, 1992).

Rising age at marriage and an increasing number of induced abortions were the most important factors causing fertility decline in the early 1960s. The age of women at marriage has risen continuously, and contributed to the decline of the CBR and the TFR. The mean age of women at first marriage (SMAM) was 22.9 years in 1966 indicating an increase of 6.3 years since 1925 (D.S. Kim, 1987b). The relative importance of age at marriage and induced abortion has been substantially reduced since the second half of the 1960s. However, evidence shows that the contribution of rising age at marriage to the decline of fertility has been increasing since the mid 1990s.

Rapid urbanization²⁾ and the general transformation of family structure from the extended family to the nuclear family also contributed to the reduction in fertility. Women in the nuclear family were more likely to be relieved from pressure by the elderly, who generally have a stronger preference for sons and a large family than do younger couples, and thus were able to exercise control over their family size. Although its impact on the trend of fertility was relatively less important, the change in marital composition – declining incidence of widowhood and increasing divorce – also contributed to the changes in the level of fertility (D.S. Kim, 1986).

Finally, a change in the proportion of women at reproductive ages was also responsible for the CBR change. The change in age-sex composition of the population had lowered the CBR until 1970, while it contributed to increasing the CBR for the period from 1970 to 1975. The positive effect of age composition on the CBR is estimated to have been even stronger in the late 1970s and the 1980s as the post-Korean War generation commenced childbearing (D.S. Kim, 1991, 1992).

So far, we have attempted to highlight the causal mechanisms and its determinants of fertility transition in Korea. To provide a broader basis for the reformulation of the demographic transition theory, the nature of the relationship between fertility and other components of population growth, i.e., mortality and migration, needs further discussion.

2) Detailed discussion on the relationship between urbanization and fertility decline is provided in a later section.

2. Relationship between Mortality and Fertility

The experience of western countries indicates that mortality decline is closely related to socioeconomic development. In Korea, however, socioeconomic changes exercised little direct impact on changes in mortality, while the impact was found to have been considerable in the case of fertility and migration (T.H. Kwon et al., 1975: 24). Mortality decline during the colonial period and the post-war years appears to be less related to economic development or the rising standard of living of the population. Industrial development in the colonial days was based on the exploitation of Korean labor and was achieved at the cost of deteriorating living conditions for the Korean population. Therefore, it did not contribute greatly to the reduction of mortality.

It is also generally accepted that economic conditions after the war were not favorable for controlling mortality. The country was devastated during the war and the economic restoration was very slow. This clearly suggests that the introduction and dissemination of health and medical systems as well as new medicines contributed most significantly to mortality decline in Korea.

One of the major controversies concerning the demographic transition theory is whether the decline in mortality preceded the decline in fertility, and whether any causal relationship exists between the two declines. Based on the equilibrium model, demographic transition theory states that mortality declines first, followed by reduced fertility. In contrast, several empirical studies note that a decline in mortality does not always precede a decline in fertility (Coale, 1974; Ware, 1972; Goldscheider, 1971).

Now the question is whether the rapidly declining mortality in Korea, brought about by the introduction of western techniques for controlling epidemic diseases, induced the fertility decline. If mortality played a major role in the decline of fertility, this relationship should have been observed at aggregate levels. And there should be a positive temporal association in the amount of decline in mortality and fertility. However, it is difficult to produce an example where a prior improvement in adult or infant mortality was a major factor encouraging parents to restrict their fertility within marriage.

It is clear from Figure 1.2 that mortality declined in Korea before fertility

started to decline. It is also true, however, that fertility increased from 1910 to 1925, probably due to improved health conditions, when mortality was declining. A similar pattern may be observed in the late 1950s.

It has been argued that there is a threshold level of mortality above which fertility decline does not occur (Ware, 1972). Alternatively, it could also be argued that mortality and fertility are associated with each other rather than being causally linked. In other words, the causal relationship between mortality and fertility is not unidirectional, but rather a mutual one (D.S. Kim, 1992).

To conclude, the causal connection between mortality and fertility in the course of Korean demographic transition seems to be tenuous and spurious. Mortality has no necessary direct effect on fertility. If there is a connection between mortality and fertility, it is likely to be an indirect one. They are interdependent processes, and should be analyzed within the context of a given social structure.

3. Relationship between Migration and Fertility

During the course of demographic transition, most European countries have undergone rural-urban migration and international migration, even though the extent of migration has varied over time. However, in the original formulation of demographic transition theory, migration was not considered as an integral part of the population change process. Migration was treated as an exogenous variable along with industrialization and urbanization, and as a determinant of the "vital" transition from high to low fertility and mortality (Goldscheider, 1981).

Davis (1963) introduced migration into his theory of demographic change and response as an important determinant of demographic transition. It is argued that people, when faced with persistent population pressure, tend to use every possible demographic means to maximize their economic opportunities, or at least to maintain their standard of living and aspirations. The main responses are remaining single, delayed marriage, contraceptive use, abortion and internal or international migration. Among the responses, migration is considered to be more efficient and to have a more rapid response.

Migration can be a substitute for other demographic responses and forces.

In other words, migration is viewed as a short-term safety valve relieving population pressure and delaying the onset of fertility decline (Goldscheider, 1981). Friedlander (1969) examined the interaction between migration and fertility change in the process of demographic transition using data from England (1800-1940) and Sweden (1750-1860), and concluded that the timing and rate of fertility decline correlate negatively with migration opportunities. Mosher (1980a, 1980b) also reached the same conclusion from his research on Puerto Rico and Sweden.

As discussed above, in Korea, international migration governed the population growth trend from 1925 to 1955. It can be argued that the massive emigration of farmers to Manchuria and Japan during this period retarded the onset of fertility transition. If out-migration outlets had not been available, the Korean population might have been forced to reduce its natural increase through delaying marriage, abortions, and/or marital fertility controls. Since the late 1950s, the magnitude of international migration has been minimal, and Korean population growth has again become a function of fertility and mortality.

Internal migration is also of important significance to the timing and pace of the fertility transition in Korea. Along with a large exodus of Korean farmers to Manchuria and Japan, rural-urban migration progressed substantially during the colonial period. From 1925 to 1944, the urban population (excluding Japanese and foreign residents) increased from 3.2 to 11.7 percent of the total population and the number of cities grew from 12 to 21 (Table 1.4).

There are wide disagreements among demographers about differences between the fertility level of urbanward migrants and that of urban natives. But it is generally agreed that those who migrate to urban areas have lower fertility than those who remain behind (Goldstein and Tirasawat, 1977). By transferring a large segment of the population out of rural areas that were faced with a rapid and high growth rate of population, rural-urban migration during the colonial period reduced population pressure considerably and retarded the initiation of fertility reduction.

Table 1.4 shows the increasing trend of the growth of urban population and cities. Since the Korean War, Korea has transformed rapidly from an agricultural society to one in which the majority of the population lives in urban areas. The

Table 1.4 Growth of the Urban Population in Korea, 1910-2000

Year (Month, Day)	Population (in 1,000s)	Number of Cities	Urban Pop. (in 1,000s)	Percentage of Urban Pop.	Annual Rate of Increase (%) of Urban Population
Prepartition Korea					
1910 (10.1)	17,427*	-	-	-	-
1915 (10.1)	17,656*	-	-	-	-
1920 (10.1)	18,072*	-	-	-	-
1925 (10.1)	19,020	12	608	3.2	-
1930 (10.1)	20,438	14	889	4.4	76.0
1935 (10.1)	22,208	17	1,245	5.6	67.3
1940 (10.1)	23,547	20	2,377	10.1	129.4
1944 (5.1)	25,120	21	2,933	11.7	68.4
South Korea					
1945 (9.1)	16,136*	15	2,081	12.9	-
1949 (5.1)	20,167	19	3,458	17.1	135.4
1955 (9.1)	21,502	25	5,263	24.5	66.3
1960 (12.1)	24,989	27	6,997	28.0	54.2
1966 (10.1)	29,160	32	9,780	33.5	57.4
1970 (10.1)	31,435	32	12,929	41.1	69.8
1975 (10.1)	34,679	35	16,770	48.4	52.0
1980 (11.1)	37,407	40	21,409	57.2	48.0
1985 (11.1)	40,420	50	26,418	65.4	42.0
1990 (11.1)	43,390	73	32,290	74.4	40.1
1995 (11.1)	44,554	73	34,992	78.5	16.1
2000 (11.1)	45,985	79	36,642	79.7	9.2

*Estimated.

Note: Foreign residents are excluded from this table.

Source: Table 1.1; Censuses from 1925-2000.

rapid rate of urbanization has proven to be an important factor in the fertility transition (T.H. Kwon et al., 1975; C.B. Park, 1978; L.J. Cho et al., 1982). It is interesting to find a negative relationship between population increase rates and urban growth rates for about twenty years after the end of the Korean War.

Particularly noteworthy is the slowdown in the rate of urbanization during the baby boom period around 1960 (D.S. Kim, 1987a; T.H Kwon, 1990). These observations lead to conjecture that when migrants are removed from the traditional milieu of an agricultural population, their urban exposure and adaptation tend to reduce fertility.

Without a doubt, migration is one of the underlying forces for socioeconomic changes. Migrants are more prone or receptive to change processes, and in the process of moving, are likely to accept low-fertility oriented norms and attitudes and a realignment of social ties. One of the links between migration and fertility changes may be through uprooting and changing kin dominance over resources (Goldscheider, 1981). When migration results in the decline of kin dominance over economic resources and affects the role and status of women, it creates the conditions necessary for fertility reduction.

In sum, the role of migration in Korea's demographic transition can be considered as a substitute process in the short-run and as part of the multiphasic responses in the long-run in areas under heavy pressure of population growth. However, the complexity of the migration process does not easily allow for a broad generalization of the impact of migration on fertility change.

IV. Status of the Korean Population in the World

Various regions of the world show great differences in population growth and structure. Developed and underdeveloped societies show relative differences in demographic transition, current growth rate, and issues that can cause problems in the future. Even within underdeveloped societies, one can observe regional differences in the population process. Therefore, comparing the major characteristics of the Korean population to those of other regions in the world is helpful to understand the growth and transition of the Korean population. In Table 1.5 various indicators related to the size, structure and growth of the Korean population are compared to those of world, developed and developing countries.

The distribution of the world population is extremely disproportional. Sixty

percent of the current world population belongs to 11 countries: China, India, the United States, Indonesia, Brazil, Russia, Pakistan, Bangladesh, Japan, Nigeria, and Mexico. As of July 1, 2000, the Korean population was estimated at 47 million, 26th out of 193 countries. Among 30 OECD countries, Korea has the 9th largest population after the United States, Japan, Mexico, Germany, Turkey, France, the United Kingdom and Italy (KNSO, 2001a). Table 1.5 shows that, in 2000, the Korean population composes 0.78 percent of the world population.

The density of the world population, as of 2000, is 45 persons per 1 km². Population density among less developed countries has been tabulated to be 59 persons per 1 km² and this is 2.5 times that of more developed countries. Korea is one of most densely populated areas in Asia. Korean population density in 2000 was 472 persons per 1 km². Excluding city states and island nations, Korea is the third most densely populated country in the world after Bangladesh and Taiwan.

According to Table 1.5, the proportion of the world urban population rose to 47.0 percent in 2000. The urban population of more developed countries and less developed countries has been estimated as 76.0 and 39.9 percent, respectively. This means that the absolute difference between the urban populations of more developed and less developed countries has remained the same. Regional differences have continued to exist. North, Central and South America, as well as Europe and Oceania show high urban population proportions of 70-77 percent while Asia and Africa still have 60 percent of their populations residing in the countryside (T.H. Kwon and D.S. Kim, 2002: 232-233). Due to rapid and sustained industrialization since the 1960s, Korea has raised its urban population proportion up to 81.9 percent as of the year 2000. This is far higher than the average urban population proportion of developed countries.

The median age is often used as an indicator to understand the level of modernization, the phase of demographic transition, and various problems related to these two factors. In general, a population with a median age of 25 or lower is referred to as a "young population" and one with a median age of 30 or above is referred to as an "aged population". A young population is usually found in a society with high birth and death rates and an aged population is found in a

Table 1.5 Status of the Korean Population in the World, 2000

Demographic Indicators	World	MDCs	LDCs	Korea
Population (in millions)	6,057	1,191	4,865	47
Population Density (per km ²)	45	23	59	472
% of the Urban Population	47.0	76.0	39.9	81.9
Median Age	26.5	37.4	24.3	31.8
Dependency Ratio	58.4	48.3	61.1	38.7
Ageing Index	23.1	78.2	15.5	35.0
Population Increase Rate (1995-2000,‰)	13.5	3.0	16.2	7.8
Total Fertility Rate (1995-2000)	2.82	1.57	3.10	1.51
Life Expectancy at Birth (1995-2000, years)	65.0	74.9	62.9	74.3

Notes:1) Dependency Ratio = $\frac{\{(Pop. Aged 0-14) + (Pop. Aged 65+)\}}{(Pop. Aged 15-64)} \times 100$.

2) Ageing Index = $\frac{(Pop. Aged 65+)}{(Pop. Aged 0-14)} \times 100$.

Source: UN (2001).

society with low birth and death rates. As can be observed in Table 1.5, there is about a 13.1 year difference in the median ages of more developed and less developed countries as of the year 2000. The median age of the Korean population is 31.8 years, 7.5 years higher than the overall average of less developed countries but 5.6 years lower than the overall average of more developed countries.

The dependency ratio represents the ratio of the combined population of children and the elderly to the working-age population. Table 1.5 shows that the dependency ratio for more developed countries is 48.3, far lower than the 61.1 for less developed countries. The dependency ratio for Korea in 2000 was 38.7, even lower than that of more developed countries. Usually, the dependency ratio tends to be lower in more developed countries, while significantly higher in less developed countries. In some of the newly industrializing countries like Korea, the dependency ratio has a temporary tendency to be low due to rapid declines of fertility and mortality.

Recently a phenomenon most notable in the population structure of more developed countries is population ageing. Societies with the most aged population are in northern Europe and Japan with around 15-19 percent of the

population over age 65. On the other hand, regions with proportionately young populations include Africa, South America, and Southeast Asia, mostly in economically less developed countries. In Korea, fertility and mortality rates have steadily declined since the early 1960s, resulting in a population pyramid with a relatively high proportion of the population over 65. As of the end of 1999, Korea became an ageing society with a population more than 7 percent of the total population over age 65. Experiencing an unprecedented pace of population ageing by the year 2019, Korea is expected to be an aged society with an elderly population of over 14 percent of the total population (KNSO, 2001a). Estimating from the ageing index given in Table 1.5, however, the age structure of the Korean population in 2000 is still closer to that of less developed countries, but it will become closer to that of more developed countries by 2020.

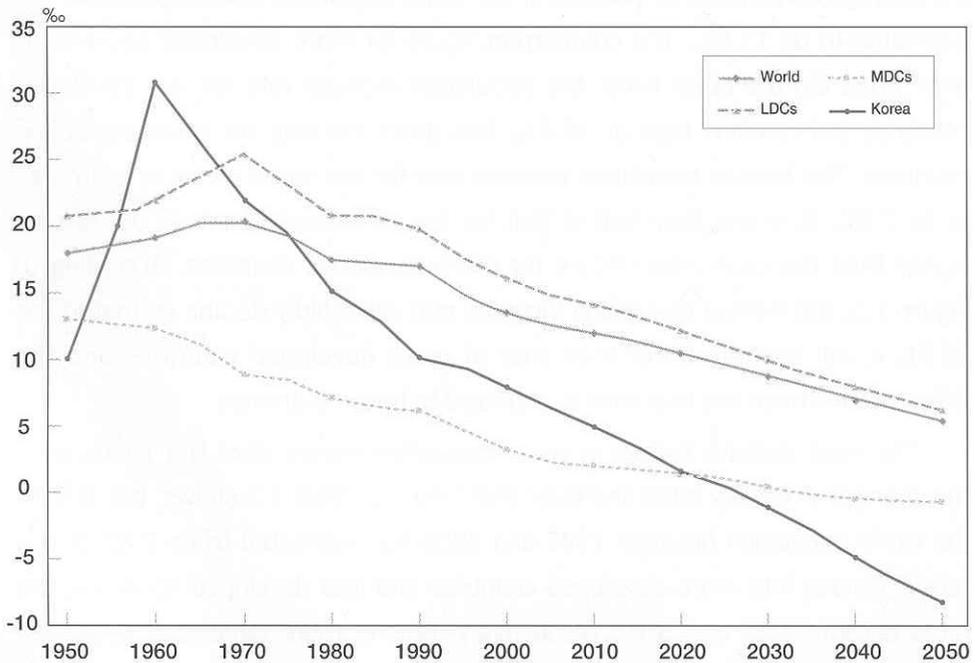
Figure 1.5 shows the increasing trends of the world population and the Korean population. Korea experienced a remarkably high rate of population growth during the late 1950s, but since the beginning of the 1960s there has been a continual steep decrease in the rate of population growth. In Table 1.5 the average annual rate of increase of the world population from 1995-2000 was estimated to be 13.5‰. The counterpart figure for more developed countries is only 3.0‰. On the other hand, the population increase rate for less developed countries still remains high at 16.2‰, five times the rate for more developed countries. The Korean population increase rate for the same period is estimated to be 7.8‰. It is less than half of that for less developed countries but still far higher than the counterpart figure for more developed countries. According to Figure 1.5, the Korean population increase rate will rapidly decline so that in the 2020s it will become lower than that of more developed countries and the difference between the two rates is expected to become greater.

The most decisive factors in world population trends since the 1960s were the changes in fertility rates and their aftermath. As Table 1.5 shows, the TFR for the world population between 1995 and 2000 was estimated to be 2.82. If this rate is divided into more developed countries and less developed countries, the rates become 1.57 and 3.10, respectively. Among more developed countries, there was a remarkable decrease in the TFR from 1960 to 1975, and after the mid 1970s the TFR fell below the replacement level. On the other hand, the

decline in the TFR for less developed countries was drastic after the late 1970s. Regionally, Korea and other East Asian countries experienced the most rapid decline, falling to the level of more developed countries by 2000. Korea's TFR for the period 1995-2000 was calculated to be 1.51, even lower than the average level of more developed countries.

The world-wide average life expectancy at birth has risen from 46.5 to 65.0 years during the period 1950-2000. However, in spite of the rapid decline in mortality in less developed countries in the last half a century, the regional differences in life expectancies remain large. As indicated in Table 1.5, the average life expectancies for more developed and less developed countries were estimated to be 74.9 and 62.9 years respectively, for the period 1995-2000. The East Asia region has experienced the most rapid decline in mortality levels during the last half a century. Recently the average life expectancy of this region is approaching the level of more developed countries. Korea's average life

Figure 1.5 Annual Increases in Korean and World populations, 1950-2050



Note: Annual increase rates for the Korean population from 2000 to 2050 are based on KNSO projections. The remaining data are from the UN population database.

Source: UN (2001); KNSO (2001a).

Table 1.6 Trends and Prospects of the Korean and World Populations, 1950-2050

(in millions, %)

Region	1950	1975	2000	2025	2050
World	2,519 (100.0)	4,066 (100.0)	6,057 (100.0)	7,937 (100.0)	9,322 (100.0)
MDCs	814 (32.3)	1,048 (25.8)	1,191 (19.7)	1,219 (15.4)	1,181 (12.7)
LDCs	1,706 (67.7)	3,017 (74.2)	4,865 (80.3)	6,718 (84.6)	8,141 (87.3)
Korea	20.4 (0.81)	35.3 (0.87)	47.0 (0.78)	50.7 (0.64)	44.3 (0.48)

Note: Estimates of the Korean population for 2025 and 2050 are based on KNSO projections. The remaining data are from the UN population database.

Source: UN (2001); KNSO (2001a).

expectancy for the period 1995-2000 was calculated to be 74.3 years, indicating no apparent difference to that of more developed countries.

The less developed regions have a notably higher level of fertility and population increase when compared to more developed regions, and therefore the more developed regions' proportion of the world population is expected to continue becoming smaller. If the current low level of fertility continues, a decrease in the population size will become inevitable in most of the more developed countries. In Table 1.6, the more developed countries' proportion of population was 32.3 percent in 1950, but it was reduced to 19.7 percent in 2000. By 2050 it will be further reduced to 12.7 percent. By the middle of this century, 8.1 billion people, 90 percent of the estimated world population of 9.3 billion, will be living in less developed regions.

As has been noted above, the Korean population will begin to decrease from the early 2020s due to a fertility rate way below the replacement level, and by 2050 the total population is projected to be 44,337,000 (KNSO, 2001a). Because the Korean fertility rate and the population increase rate are both substantially lower than the world average, the proportion of the Korean population compared to the world population shows a slight but steady decline. In terms of population

size, Korea was ranked 25th in the world in 1995, but as of 2000 its rank was lowered to 26th. This trend is expected to continue at least until the middle of this century. As can be seen in Table 1.6, the proportion of the Korean population compared to the world population was 0.87 percent in 1975, but this is expected to be reduced to 0.48 percent by 2050.

V. Concluding Remarks

The Korean demographic transition has not followed the general pattern that has been observed for a long time in most western countries. It is clear, however, that Korea experienced all the stages of demographic transition in the twentieth century. Death rates began to drop in the 1910s, and continued to decline with the noticeable exception of high mortality during the Korean War years. The departure from the traditional fertility pattern started between 1910 and 1920 when the Korean population entered the early transitional stage (1910-1945) with a gradual decline in mortality. But birth rates did not have a sustained drop until almost 50 years later. It was in the early 1960s when fertility began to drop drastically.

Socioeconomic changes in the early 1960s resulted in the use of contraception, induced abortion, and a rise in the age at marriage. When the fertility transition began in the early 1960s, Korea had already achieved a relatively low level of infant mortality. Socioeconomic changes, especially urban-industrial expansion, have altered the costs and benefits of children in ways that have been well described by many microeconomists. Along with these developments, the transformation of family structure to the nuclear family and the westernization of attitudes have altered perceptions of women's roles and loosened traditional controls on young women.

In this context, the family planning program has played an important reinforcing role. Undoubtedly, Korean fertility underwent a drastic decline unprecedented in other countries. It should also be stressed that Korea has experienced a relative uniformity of fertility decline irrespective of socioeconomic status and region. This reflects the overwhelming influence of the family

planning program and the pervasiveness of changes in fertility-related factors.

It is clear that, in Korea, the decline in mortality preceded the decline in fertility. However, it is difficult to produce an example of a direct causal relationship between the two transitions. Mortality reduction in Korea seems to have exercised little direct impact on the changes of fertility. If there has been a connection between mortality and fertility, it is likely to be a tenuous, spurious or indirect one.

The impact of migration on fertility varies greatly according to the type of migration and the sociodemographic context within which migration occurs. In the early transitional stage, population pressure on land intensified due to a decline in mortality. Population growth was checked to a considerable extent by international migration and, therefore, the initiation of a substantial reduction in fertility was retarded. After the Korean War, international migration became almost negligible, and has not played a significant role in shaping the growth rate of the Korean population.

The internal urbanward migration in the early transitional stage (1910-1945) tended to reduce population pressure in rural areas considerably and retarded the onset of fertility decline. However, there is little doubt that massive rural-urban migration in the late transitional stage (1960-1985) set up the conditions for fertility reduction and has expedited the pace of the transition.

There appears to be no general or universal rules for patterns in the demographic transition to lower fertility. There has been a great degree of evolutionary pluralism and dissimilarities as well as similarities in the determinants and paths of demographic transition. In sum, Koreans reacted in ways that were consistent with Davis' theory of demographic change and response. They responded to population growth by migrating, by delaying marriage, by having abortions, and then, only when these options were exhausted, did marital fertility decline sharply.

This chapter has tried to shed light on the principal factors that have affected the transition of the Korean population and the attainment of low fertility. Korean fertility during the last 10 years has shown an extremely remarkable decline that has been beyond everyone's expectations. Even until

the mid 1980s, the theory that the demographic transition of Korean society would come to an end and a new period of stability would begin was widely accepted. However, we are now expected to witness a radical pace of population decline in the near future, and will have to tackle its profound and pervasive consequences. At present Korean fertility is far lower than the replacement level and lower than that of the United States and other developed countries. Although the experts do not agree on whether the fertility rate will continue to decline or how much further it will decline, it is generally accepted that the Korean population will begin to decrease in absolute numbers in about 20 years.

Currently very rapid population ageing is under way in Korea basically due to low fertility and a prolonged life span. Although population ageing is a global phenomenon, the pace is much faster in Korea than in any other country. The size of the elderly population has increased five times over the last 50 years. It will be increasing almost five times again over the next 50 years. The rapid increase of the elderly population, both in absolute numbers and in relation to the working-age population, will give rise to various social strains and burdens. First of all, a large increase in the expense of supporting the elderly population will seriously burden social welfare systems like pensions and medical insurance. Furthermore, there will be a manpower shortage in the labor market due to the lack of a young labor force, and this may hinder the economic growth of Korean society.

The Korean government is currently taking a step further from the simple discontinuation of its population control policies to pro-natal policies encouraging more births: extending childcare leave and child allowances, increasing coordination between child rearing and the employment of women, etc. However, the pro-natal policies will probably not be very effective. It will be difficult for young couples, who have strong desire to maintain a reasonable standard of living in a very competitive society with high educational costs, to suddenly turn around and decide to have more children. Ultimately, unless overall improvements in the educational system and the conditions of working women happen, Korean fertility will continue to remain at a low level and population decline will be unavoidable in the near future.

POPULATION CENSUS AND OTHER DATA SOURCES

Min-Kyung Kim

I. Introduction

It is essential to identify and understand the size, structure, and socioeconomic characteristics of populations in establishing, implementing, and evaluating various policies and plans for a country. In general, there are two kinds of population statistics: static and dynamic. The former is concerned with the status of a population at a certain time, while the latter examines the change or flow of a population during a certain period of time. In Korea, the population census, resident registration, and population projections are sources of static population statistics. Dynamic statistics are typically vital statistics covering birth, death, marriage and divorce.

The population census is one of the most important demographic sources. Thus, knowledge of the population census is a prerequisite to gaining a better understanding of the current status and changes of population. This chapter aims to introduce the evolution of the census in Korea as well as the main characteristics of censuses in general. More specifically, it deals with the development of data collection methods, sampling and the major types of questions asked on the census. Important characteristics of other demographic

data such as vital registration, resident registration and population projections are also briefly discussed in this chapter.

II. Principles of the Population Census

The population census conducted in most countries has the following four basic principles: individual enumeration, universality within a defined territory, simultaneity, and defined periodicity (UN, 1998). "Individual enumeration" comprises enumerating an individual survey unit such as a person or household in the population census. This concept contrasts with that of the collective survey and allows the population census to provide the specific information on population and household in detail. "Universality" means that, within a defined territory, the population census enumerates the entire population and households rather than a specific group or place. Under this principle, the population census can produce statistics on the whole population either within a given region or for the entire country. "Simultaneity" means that the information is gathered at a single point in time. Lastly, "periodicity" means that the census needs to be repeatedly conducted at an interval of regular time such as every five or ten years. Such periodicity makes it possible to compare the characteristics of a population across time.

As in many other countries, the population census in Korea has followed these basic principles. In Korea, the population census defines an individual household as a survey unit and enumerates the characteristics of each individual in the household within the territory of Korea, with a given time reference (November 1) of every five years.

III. Evolution of the Population Census

The first population census in Korea was conducted in 1925 under Japanese colonial rule. Originally, the first census in Korea was designed to be conducted in conjunction with the first census of Japan in 1920. Preparation for this census was made by enacting the Population Census Council Regulation in 1918.

However, the first census scheduled in 1920 was cancelled due to the March 1st Independence Movement in 1919 and the subsequently unstable situation. Following the Population Census Act promulgated in 1902, the first population census for the Korean Peninsula was conducted on a *de facto* basis as of October 1st, 1925. Its legal basis was the 1925 Simplified Population Census Ordinance (the Chosun Governor Ordinance No. 66) as promulgated in May 1925.

After 1925, the population census was conducted every five years under Japanese rule. The last, that is the fifth census, conducted by Japan was in 1944. This particular census was done one year prior to regular years ending in "0" or "5" by the Resource Survey Act with the purpose of identifying human resources for conscription during World War II. The population censuses conducted under Japanese colonial rule were aimed at the efficient and effective exploitation of the Korean labor force and economy. Thus, the results of the population censuses, specifically of 1940 and 1944, were kept confidential and restricted for public use.

The first census after liberation from Japanese rule in 1945 was conducted as of May 1st, 1949. It was done one year earlier than the regular census year because the new government established in 1948 immediately required population statistics for various policies and plans. This census was supported legally by the Population Census Act (enacted on January 27, 1949) and the First Population Census Local Administration Regulation (enacted as a Prime Ordinance in February 1949). It was administered by the Population Census Division within the Bureau of Statistics, Office of Public Information. All census data, however, were lost during the Korean War with the exception of the preliminary report which only provides the size of the total population.

The second census after the establishment of the new government was conducted as of September 1, 1955. This census was a simplified one, of which the main purpose was to identify the human and material resources needed for reconstructing the whole nation after the Korean War. The local administrative organizations under the Ministry of Home Affairs were mobilized to conduct the population census. However, there were serious defects with the census planning, operation, and management due to a large amount of social disorder and population movement. Nonetheless, from this census, the size of the total

population was obtained more accurately than before, which enabled the first population projections to be forecast.

The population census in a more modern sense began with the 1960 census. This census was conducted according to the UN World Census Program. For this census, the UN Statistical Advisory Commission visited Korea to provide technical advisory support. The Population Census Committee was established in 1959 and the Population Census Ordinance (Cabinet Ordinance No. 19) was enacted on November 3, 1960. The Population and Housing Census as of December 1, 1960 and the Agriculture Census as of February 1, 1961 were conducted. The distinctive features of the 1960 population census were that it was conducted on a *de jure* basis as in many other countries and conducted in a form combined with the housing census for the first time. In this census, a post enumeration survey was also conducted. The tabulation was made based on a 20 percent sample to produce prompt results. Thus, the 1960 census could be deemed the first modern census in Korea, which provided a basis for the further development of the population census at all stages involving planning, data processing and evaluation.

The 1965 census was postponed to 1966 due to an insufficient budget in the First Five Year Economic Development Plan. Even the 1966 census as of October 1 was confined only to the enumeration of the population excluding housing. It adopted, for the first time, a sampling technique in an enumeration process. The 1966 census marked the first use of computer technology (IBM 1401) for the processing of census data.

The 1970 census again included the enumeration of the housing units and thereafter both population and housing censuses have been conducted in combination. Since the 1980 census, the census date has remained November 1. The 1985 census which included surname and origin of family name for the first time, was characterized by its coverage of the whole household for all survey items. However, a 10 percent sample was adopted in the 1990 census and thereafter in all censuses. The key entry method has been replaced by the optical mark reader (OMR) method in data capture, which reduced the data processing time and minimized data input errors.

In the 1995 census, the scanned raster map was introduced for the

Table 2.1 History of the Population Census in Korea

Census Date	Title of Census	Major Features
Oct. 1, 1925	Simplified Population Census	First census
Oct. 1, 1930	Population Census	Included job as an item for the first time
Oct. 1, 1935	Population Census	Included usual place of residence
Oct. 1, 1940	Population Census	Included military service; designated skills and job 3 years ago for the first time
May 1, 1944	Population Survey	Conducted for the purpose of resource mobilization according to the Japanese Wartime Mobilization Act
May 1, 1949	Population Census	First census after establishment of the new government; included migration for the first time
Sept. 1, 1955	Simplified Population Census	Included occupancy and type of household (farm or non-farm) for the first time
Dec. 1, 1960	Population and Housing Census	First housing census, adopted the labor force approach, and tabulation of 20% of questionnaires for economic activity and fertility items
Oct. 1, 1966	Population Census	Adoption of 10% sampling for economic activity and fertility items; excluded housing items
Oct. 1, 1970	Population and Housing Census	Adoption of 10% sampling for economic activity, fertility, migration and part of housing items
Oct. 1, 1975	Population and Housing Census	Adoption of 5% sampling for economic activity, fertility, migration and part of housing items
Nov. 1, 1980	Population and Housing Census	Adoption of 15% sampling for economic activity, fertility, and migration items
Nov. 1, 1985	Population and Housing Census	No sampling technique; included origin of family name
Nov. 1, 1990	Population and Housing Census	Adoption of 10% sampling for economic activity, fertility, and migration items; introduced OMR
Nov. 1, 1995	Population and Housing Census	Adoption of 10% sampling for economic activity, commuting, and migration items; used raster map
Nov. 1, 2000	Population and Housing Census	Adoption of 10% sampling for economic activity, fertility, migration, commuting, and information society related items; used digital map and decentralized data processing

demarcation of the enumeration area. This replaced the blue print used in previous censuses. In the 2000 census, to save time in data processing, some parts of the data processing such as the data capture and editing of the

surveyed questionnaires were decentralized into 12 regional offices of the Korea National Statistical Office(KNSO) where they used personal computers. A digital map was used for the demarcation of the enumeration area, which enabled the census results to be accessed by a GIS (geographic information system).

IV. Population Census System

1. Organization

In general, the organizational structure for the operation of the population census consists of the hierarchical system of a headquarter and subordinate agencies. The KNSO as a headquarter takes a responsibility for the overall operation of the census-taking including census planning, data processing, analysis, and publication. The general administrative system of local governments as subordinate agencies has been used to recruit enumerators, supervise surveys in the field, collect and return the questionnaires. The enumerators are selected from those people who meet the specified requirements such as age and educational attainment. Each enumerator, after special training, visits and surveys those households assigned to him or her.

The system above is confined to ordinary households but a disparate organizational structure is adopted for special enumeration areas including military camps, prisons, juvenile detention centers, police stations and overseas missions where the entry of the public is limited. For these areas, the Ministry of Defense, Ministry of Justice, Police Agency, Maritime Police Agency, and Ministry of Foreign Affairs and Trade directly survey the inmates or diplomats and their families by request from the KNSO.

Thus, the roles of the local governments have become of greater importance in achieving a successful census-taking. Nevertheless, the statistical organization in local governments as a counterpart to the KNSO continues to be downsized, which makes the effective operation of the census more difficult. In the past, the Population Statistics Section under the Statistics Division accounted for the population census operation at the level of the province. From 1994, the Statistics and Computer Division, which combined statistical affairs and

computer affairs, and from 1997 the Planning Division or Information Division replaced the Statistics Division. The Statistics Section consequently took responsibilities for all kinds of official statistics including the population census, despite the continuing reduction of personnel. Moreover, since 2000 the statistical function of the lowest administrative units such as *Eup*, *Myeon*, and *Dong* has been transferred to the upper administrative units such as *Si*, *Gun*, and *Gu*. As a result, the Statistics Section at the *Si*, *Gun*, and *Gu* level has accounted for all statistics related affairs as well as other administrative tasks.

2. Legal Basis

Population censuses impose a burden on the people in terms of individual privacy and hence a legal basis should be established for the protection of the people's rights as well as the imposing of the people's compulsory duty to comply. In the United States, population census-taking is legislated in the constitution. However, the legal bases for census-taking can be in general classified into the following: the Statistics Act, generally applied to the population census; the census related act; the regulation for every census; and special legislation for each census-taking.

The legal basis for the four population censuses from 1925 to 1940 under Japanese rule was the Population Census Act promulgated in 1902 and the Population Census Ordinance (Chosun Governor Ordinance). The last census undertaken by Japanese colonial rule in 1944 was legally supported by the Resource Survey Act as proclaimed in December 1929.

In 1949, after the establishment of the new government, a special law, the "Population Survey Act" was enacted as a legal basis for conducting a population census. Additional legal support was made for every census from 1949 to 1960, which was the population census ordinance regulating the date, coverage, and method of the census. For example, the Population Census Act for the 1949 census was enacted on January 27, 1949 (No. 18) and the First Population Census Local Administration Regulation was enacted as a Prime Ordinance in February 1949.

The Population Survey Act was annulled in 1962 when the Statistics Law

was declared. Instead, the Population Census Regulation was in effect for the population censuses from 1966 to 1990. However, the revision of the Statistics Law annulled such regulations in 1993. Accordingly, the only legal support for the 1995 population census was the Statistics Law, which appointed the population census as the designated statistics. With increased opinion backing a consistent and comprehensive population census, the Population and Housing Census Decree was enacted for the 2000 population census.

V. Methodology of the Population Census

1. Concept

1) Population

The census enumerates population either on a *de facto* or on a *de jure* basis. The former rules that people are counted in the area where they are found at the time of the survey. The latter principle calls for enumerating persons at their usual residence and identifies them as the population of that area regardless of the place where they stay during the census-taking.

In the history of the Korean census, the population censuses from 1925 to 1955 adopted the *de facto* principle. But the censuses after 1955 adopted the *de jure* concept. In the case of the 1955 population census, military personnel in service were recorded as part of the population of the region where they were enumerated. As a result, Gyeonggi-do and Gangwon-do appeared to have a disproportionate number of younger people. In general, the result of the population census on a *de facto* basis could not exactly reflect the population distribution and structure of regions, so that it could not be used appropriately for policy development and administrative purposes. Since the 1960 population census, the *de jure* concept, which was recommended by the UN Advisory Committee, has been adopted to enhance the quality and usefulness of the census.

2) Household

Household has been a unit of enumeration in the Korean census. Household can be defined either as a housekeeping unit or as a household-dwelling unit. The Korean census has regarded the household as a housekeeping unit in which the household is the place for one person or more to eat, sleep, and share their livelihood together. Statistics at the household level are available as of the 1960 population census. However, it should be noted that the classification and name of households has varied from one census to another.

In the population censuses from 1925 to 1955, the household was classified into ordinary and quasi ones. The latter included military barracks, jails and prisons, school or factory dormitories, inns or hotels, hospitals, social welfare institutions, juvenile detentions, and so on. In the 1960 population census, the household was divided into individual and collective households. Individual households included households of persons having kinship, households of unrelated persons of four or less, and one-person households. Collective institutions and households of persons of five or more without a blood relationship are typical examples of collective households.

In the 1966 population census, the household was classified into ordinary and quasi households as was in censuses prior to 1960. However, the ordinary household included households of persons with a blood relationship and one-person households with independent cooking and eating facilities. But one-person households without independent cooking and eating facilities in a separate kitchen, and collective institutions were classified as a quasi household. In both the 1970 and 1975 censuses, the household was classified into ordinary and quasi households, as was in the 1966 census. Households of persons sharing kinship and one-person households were included in the former, while collective households and households of persons of non-blood relationships were defined as the latter. The classification of the household in the census as ordinary or collective has been maintained since 1980: households of persons with a blood relationship, households of five or less persons of a non-blood relationship, and one-person households belong to the former; collective institutions and households of persons of six or more having a non-blood relationship are typical instances of collective households.

Table 2.2 Classification of Household in Population Censuses in Korea

1960 Census	1966 Census	1970-1975 Censuses	1980-2000 Censuses
Individual Household(HH) - HH of persons having a blood relationship ¹⁾ - One-person HH	Ordinary Household(HH) - HH of persons having a blood relationship - One-person HH with a separate kitchen	Ordinary Household(HH) - HH of persons having a blood relationship - One-person HH	Ordinary Household(HH) - HH of persons having a blood relationship - HH of persons of 5 or less with a non-blood relationship - One-person HH
Collective Household(HH) - Institutions - HH of 5 or more members with a non-blood relationship	Quasi Household(HH) - One-person HH without a separate kitchen - Others	Quasi Household(HH) - Institutions - HH of persons having a non-blood relationship	Collective Household(HH) - Institutions - HH of 6 or more persons with a non-blood relationship

Note: 1) HH of 4 or less of a non-blood relationship belongs to the ordinary HH.

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

Frequent changes in the definition and classification of the household up to 1975 are likely a result of rapidly changing family and household structures. Consistent definition and classification of the household since the 1980 census may reflect the stabilization of the family and household structure. A time-series analysis of household structure using population censuses has been possible with the consistency of the definition of the family and household in population censuses.

2. Data Collection Method

Along with the development of general statistical survey methods, the method of data collection in census canvassing has been diversified. There are generally two methods for data collection in a census. One is the interviewing method and the other is the self-enumeration method.

In the censuses conducted under the Japanese colonial rule, a self-enumeration method was adopted. The head of the household or the household

member appointed by the enumerator filled in the questionnaire for his or her household. Enumerators, composed of civil servants, personnel of public organizations, and so on as an honorary post without any payment, were responsible for distributing, collecting, reviewing, arranging, and returning census questionnaires.

For the 1949 and 1955 censuses after the establishment of the newly liberated government, the self-enumeration method was also adopted but the enumerator was supposed to write for a household on the questionnaire as if he or she had authority to fill in the questionnaire. The reason for the continuing adoption of the self-enumeration method might be that the public perceived filling in the census questionnaire as their duty.

The 1960 population census was marked as the first census that adopted the interviewing method to improve the quality of the census. In this census, the self-enumeration method was also partially applied to some households.

The environment for census-taking has deteriorated as the number of households where all eligible persons were absent during the daytime has increased. In addition, the significance of personal privacy and information has been increasingly recognized along with urbanization and industrialization. Besides, female participation in the labor force has more than doubled. With all these changes in Korean society, the self-enumeration method in the census has been increasingly preferred to the interview method. In recent years, both the increase of one-person households and the widespread desire for personal privacy protection have threatened the accuracy and coverage of the census. This has necessitated more appropriate data collection methods in census-taking.

3. Adoption of Sampling Techniques

The increase in the number of question items on the census is likely to burden the respondents as well as the enumerators. It can also result in lower accuracy and untimeliness. In order to overcome such problems, sampling techniques have been developed in population censuses worldwide. In general, basic items are asked for all households. But questions other than basic ones are

Table 2.3 Adoption of Sample Techniques in the Population Census in Korea

Enumeration	Census Year
Complete enumeration	1925, 1930, 1935, 1940, 1944, 1949, 1955, 1960, 1985
Complete & sample enumeration	
· 5% sample	1975
· 10% sample	1966, 1970, 1990, 1995, 2000
· 15% sample	1980

asked only for some sampled households. By adopting the sampling techniques, the time, cost and burden on respondents and enumerators have been reduced. But statistics for small areas and specific clusters cannot be fully produced for those items surveyed in sampled households.

Sampling techniques in population census-taking were introduced in the 1966 population census in Korea to reduce the cost. It is noteworthy that the adoption of the sampling technique was, in reality, made in the 1960 population census but only for the tabulation of 20 percent of households on the items of economic activity and fertility. Sampling techniques have been applied to subsequent censuses up to 2000, but with varying sample sizes such as 5 percent for the 1975 census, 15 percent for the 1980 census and 10 percent for other censuses (see Table 2.3). The only exception was the 1985 census where all items were surveyed for all households.

VI. Content of the Population Census

The United Nations (1998) recommended the following in selecting census questions: i) national and local government needs, ii) international comparison, iii) feasibility and adequacy of response, iv) availability of resources needed for all processes of census-taking such as canvassing, data processing, etc. Thus, the questions for population censuses should be selected after taking into full consideration the feasibility of response, utilization of results, burden on people, budget resources, timeliness and accuracy of results. The consistency of items is of great importance to enable the confined use of time-series analysis

for comparative purposes.

1. Changes in Survey Items

Table 2.4 presents the historical change in survey items in Korean censuses, which reflect the changes in society.

There were only five questions in the first population census in 1925. Because the size and age structure of the total population were the major concern, the basic items such as name, sex, age (month and year of birth)¹⁾, marital status, and nationality were asked. In the 1930 population census, nine items were asked adding four items to the items for the 1925 census: relationship to the head of the household, occupation, place of birth, and literacy. However, the number of items for the 1935 census was reduced to six, by adding a new item, place of usual residence, to those items for the 1925 census. The number of items for the 1940 census increased to eleven adding military service and occupation. In this census, industry and status of worker (including employer and unpaid family worker) were asked at two different reference times: census date and 3 years ago. The 1944 census, the last census taken under Japanese rule intended to collect information on human resources to mobilize for war, and thus asked about special skills (driving license) in the occupational item and educational attainment.

The first census in 1949 by the new government after liberation surveyed eleven items including sex, age, marital status, education, place of civil registration (origin of family line), occupation, special skills, place of residence at the time of liberation, military service experience (branch of the military service, etc.), and conscripted labor (months drafted). The place of residence at the time of liberation was the first item concerning migration in Korean census history. It was designed to identify the repatriation of overseas Koreans after liberation and movement within the country. The experience of being drafted for military service and work was included to identify the number of repatriates that could be used as a basis for requesting reparations from Japan. In the 1955 census, twelve items were asked including disability, year of in-migration and place of

1) For the 1930 census and thereafter, the date of birth included date, month and year of birth.

Table 2.4 Number of Items in the Population and Housing Census in Korea

	Total			Complete Basis			Sample Basis		
	Population	Household & Housing		Population	Household & Housing		Population	Household & Housing	
1925	5	5	-	5	5	-	-	-	-
1930	9	9	-	9	9	-	-	-	-
1935	6	6	-	6	6	-	-	-	-
1940	11	11	-	11	11	-	-	-	-
1944	10	10	-	10	10	-	-	-	-
1949	11	11	-	11	11	-	-	-	-
1955	12	10	2	12	10	2	-	-	-
1960	35	17	18	35	17	18	-	-	-
1966	14	14	-	7	7	-	7	7	-
1970	31	17	14	14	7	7	17	10	7
1975	28	19	9	11	6	5	17	13	4
1980	40	25	15	22	7	15	18	18	-
1985	28	16	12	28	16	12	-	-	-
1990	45	21	24	33	11	22	12	10	2
1995	28	16	12	17	7	10	11	9	2
2000	50	29	21	20	8	12	30	21	9

Source: GGK/MHA/EPB/KNSO (*Population and Housing Census Report, various years*).

previous residence, occupancy (type of tenure), and type of household (farm or non-farm) in addition to the basic items.

The number of items jumped in the 1960 population census because the housing census was conducted in conjunction with the population census. The number of items was 35 among which 17 items were for population and 18 items for household and housing. As for the population section, the item on fertility such as total number of children ever born was included in the census for the first time. Economic activity was surveyed according to a labor force approach.

The 1966 population census was concerned only with population not housing. It adopted sampling techniques for data collection for the first time. Seven basic items were asked for all households in the short form questionnaire. Seven items on fertility and economic activity were asked for only 10 percent of households.

Table 2.5 Items Asked in Censuses, 1925-1955

Items Covered	1925	1930	1935	1940	1944	1949	1955
Demographic and social characteristics							
· Name	○	○	○	○	○	○	○
· Relation to head of household		○		○		○	○
· Sex	○	○	○	○	○	○	○
· Date of birth	○	○	○	○	○	○	○
· Marital status	○	○	○	○	○	○	○
· Citizenship/Nationality	○	○	○	○	○		○
Education							
· Educational attainment				○	○	○	○
· Literacy		○					
Migration characteristics							
· Place of civil registration				○	○	○	
· Place of birth		○		○			
· Place of usual residence			○				
· Time of in-migration & place of previous residence							○
· Place of residence on Aug.15, 1945						○	
Economic characteristics							
· Occupation		○		○	○	○	○
· Status of worker					○		○
Other population characteristics							
· Disability							○
· Military service				○	○	○	
· Months of enforced draft						○	
Household characteristics							
· Type of tenure							○
· Farm or non-farm household							○

Source: GGK/MHA (*Population Census Report*, various years).

The 1970 census surveyed 31 items, among which 17 items were for population and 14 items were for households and housing. As the high concentration of the population in urban areas became a social problem, the item on migration, such as place of residence 5 years ago, was included for the first time in the Korean census. The 1975 census was concerned with the identification of under-employment. Therefore, total time worked, expectation for additional employment, and personal income were asked in addition to activity status, work experience, status of worker, industry, and occupation. The total number of items in the 1975 census was 28 (19 for population and 9 for household and housing). Age at first marriage was also included.

Table 2.6 Items Asked in Population Censuses, 1960-2000

Items Covered	1960	1966	1970	1975	1980	1985	1990	1995	2000
Demographic & social characteristics									
· Name	○	○	○	○	○	○	○	○	○
· Origin of family name						○			○
· Relation to head of household	○	○	○	○	○	○	○	○	○
· Sex	○	○	○	○	○	○	○	○	○
· Date of birth (Age)	○	○	○	○	○	○	○	○	○
· Marital status	○	○	○	○	○	○	○	○	○
· Religion						○		○	
· Nationality	○								
Educational characteristics									
· Educational attainment	○	○	○	○	○	○	○	○	○
· Years of schooling	○								
· Field of study					s				s
· Literacy	○	○	○			○			
Fertility characteristics									
· Age at first marriage				s	s		s		
· Number of children ever born	○	s	s	s	s	○	s		s
· Number of children surviving		s	s	s	s	○	s		
· Number of children deceased		s	s	s	s	○	s		
· Number of births in the last year		s							
Migration characteristics									
· Place of birth	○		s		s	○	○	s	○
· Place of residence one year ago					s	○	s		s
· Place of residence 5 years ago			s	s	s	○	s	s	s
Economic characteristics									
· Activity status	○	s	s	s	s	○	s	s	s
· Working or not	○		s	s	s				
· Type of work				s	s				
· Hours worked in preceding week				s					
· Months worked in previous year			s						
· Years worked at present job									s
· Additional work wanted or not				s					
· Seeking work or not	○			s	s				s
· Industry	○	s	s	s	s	○	s	s	s
· Occupation	○	s	s	s	s	○	s	s	s
· Status of worker	○	s	s	s	s	○	s	s	s
· Personal income				s					
Commuting status									
· Place of work or school					s		○	s	s
· Time spent in commuting							○	s	s
· Mode of transportation					s		○	s	s

Note: ○-Complete enumeration items; s-Sample enumeration items.

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

Table 2.6 Items Asked in Population Censuses, 1960-2000 (continued)

Items Covered	1960	1966	1970	1975	1980	1985	1990	1995	2000
Other population characteristics									
• Disability					○				
• Children's residence, means of living, major supporter, activities in daily life (for persons aged 60 or over)									s
• Daytime child care									s
• Use of computer/Internet, mobile phone or pager									s

Note: ○-Complete enumeration items; s-Sample enumeration items.

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

In the 1980s, traffic problems became a serious social issue as a result of rapid urbanization and industrialization. The 1980 census included for the first time traffic related items for sampled households, which resulted in an increase of the number of total items to 40 (25 items for population and 15 for household and housing). In the 1985 census, surname and origin of family name were asked for the first time in censuses for a total of 28 items (16 for population and 12 for household and housing).

The 1990 census surveyed commuter related items in a short form questionnaire. In this census, household income was asked for the first time, but the income data collected could not be published because of inaccuracies. The number of questions soared to 50 items in the most recent census conducted in 2000. The increase in survey items was mostly due to the demand for new information on ageing, and the information- and knowledge-based society. With the transformation of the society, the demand for this information became urgent. Twenty nine items were devoted to population related information and 21 items to household and housing related information.

2. Evolution of Major Items

1) Basic items

Basic items such as name, sex, age, relationship to the head of the household, marital status, and educational attainment have been repeated on

every census. The exceptions are relationship to the head of household and educational attainment, which have been repeated since the 1930 and the 1940 censuses, respectively. However, the concept of and approach toward age, relationship to the head of the household, and educational attainment has varied from one census to another.

The relationship to the head of the household was asked for the purpose of identifying the structure of the household. In the Korean census, the household head was defined as the specific person whom the other persons of the household assumed or perceived to be the head. In the census, the head is not necessarily the person who takes a responsibility for the economic livelihood of the family or members of the household. In this sense, young or female members of the household are less likely to be the head of household even if these people support the household members economically. Rather the eldest male member of the household is more likely to be the head. For this reason, the head of the household in the census may be different from that in other surveys such as the Economically Active Population Survey.

Until the 1990 census, the relationship to the head of the household was asked in detail. As the result, 39 categories of the relationship to the head were used to determine the structure of the household in the 1990 census, for instance. But respondents since the 1995 census can select the relationship among the pre-coded categories. The relationship to the head was classified into 13 categories to save time and data processing costs in the 1995 and 2000 censuses.

The Korean census has had various approaches to determine the age of respondent. Up to the 1955 census, the date of birth was the only item concerning age. In the 1960 census, people were directly asked about their "Korean way of counting" age in daily life, which is usually one or two years higher than the demographic age. It resulted in no population aged zero in the census. This also made it almost impossible to compare age structure to that of other censuses. In order to enhance the accuracy of age reporting, four items such as "Korean (way of counting) age", date of birth, lunar or solar calendar date of birth, and zodiacal sign have all been asked in censuses since 1966. In particular, the enumerator was requested to calculate age based on censuses

from 1975 to 1990. Although the accuracy of age reporting has been enhanced by incorporating various items on age, it is still questionable whether we need to keep so many items on age in a census.

Questions on educational attainment have been repeated in censuses since 1940. Not only the level of regular education, but the current status of education such as graduation, attending or dropout has been asked. The level of schooling was classified into never attending, primary school, middle school, high school, junior college, college or university, and graduate school in recent censuses. Questions for educational attainment were limited to 7 years old or higher "Korean" age in the 1960 census, to 6 years old or higher "Korean" age in the 1995 census, and 5 years old or higher in the censuses from 1975 to 1990. But it was not limited in the censuses of 1966, 1970, and 2000. However, educational attainment was always tabulated only for those aged 6 or more. Other items other than educational attainment included in the census were literacy (ability to write and read) in the censuses of 1930, 1960, 1966, 1970, and 1985 and major (or field of study) for college graduates on a sample basis in the 1980 and 2000 censuses. Years of schooling was asked in the 1960 census.

2) Migration and Commuting

Commonly asked items on migration in censuses are questions such as place of birth, place of previous residence, duration of residence, and place of residence prior to a particular year. Place of residence was asked in the 1930 and 1940 censuses, place of residence at the time of liberation in the 1949 census, and year of in-migration and place of previous residence in the 1955 census.

Since the 1960 census, place of birth, place of residence one year ago, and place of residence five years ago have been the main items repeated for migration statistics. Place of birth has been repeated up to 2000 except the 1966 and 1975 censuses: in the short form questionnaire for the 1960, 1985, 1990, and 2000 censuses and in the long form questionnaire for the 1970, 1980, and 1995 censuses. The administrative unit for place of birth was shifted to a smaller unit: from *Si* and *Do* in the 1960 census to *Si*, *Gun*, and *Gu* since the 1970 census. Place of residence five years ago and one year ago were asked in the long form questionnaire; the former was introduced in the 1970 census and the

latter in the 1980 census with the exception of the 1985 census where all items were asked in the short form questionnaire.

Despite all the information on the items above, frequent changes of administrative area make a time-series analysis on migration difficult. In particular, a huge change in administrative areas occurred in the 1990s makes it almost impossible to distinguish urban and rural areas.

The heavy increase in traffic has become a serious social problem in modern society. Many countries have designed a questionnaire to survey commuting in the census. In Korea, the 1980 census was the first to ask respondents aged 12 or more about commuting related items such as whether the respondent commutes or not, place of work or school, time commuting and modes of transportation. Place of work or school was surveyed up to the level of the lowest administrative units, *Eup*, *Myeon*, and *Dong*. Only one main mode of transportation was surveyed in the 1980 census, but all modes in the 1990 census, and two main modes in the 1995 and 2000 censuses were asked. Time commuting has been repeated since the 1990 census. These items were surveyed on a sample basis with the exception of the 1990 census.

3) Fertility

The population census has provided fertility related information such as the number of children ever born, and the number of children born during the previous year, on a sample basis. Fertility related data are of great importance particularly when vital statistics are absent or poor in quality.

The number of children born during the previous year was asked only in the 1966 census, which aimed at measuring the fertility level. The number of children ever born was included from the 1960 census on a complete basis in 1960 and 1985 and on a sample basis in other censuses. Specifically, the number of children ever born with the distinction of still living and deceased children was asked to measure infant and child mortality rates from the 1966 to 1990 censuses. Sex of children has also been asked since the 1975 census.

The fertility items were excluded only in the 1995 census because the quality of vital statistics improved and fertility was maintained at a lower level. However, the mean number of children ever born by age of mother and by

region was no longer compiled. The cross-sectional analysis for fertility and other relevant socioeconomic conditions necessary for formulating the childcare policies, could not be continued with the population census. Thus, the 2000 population census added the fertility related items again (T.H. Kim, 1997b).

4) Economic Activity

The economic activity of a population can be measured by a variety of approaches. The current status approach, which is also called the labor force approach, measures the status of economic activity by asking about activity during a relatively shorter period of one week or one day. The usual status approach measures the economic activity status by asking about activity for a longer duration of, for example, one year. The gainful worker approach, which was mainly adopted before the introduction of the labor force approach, measures economic activity status by asking only about occupation and industry without a specific reference period.

Population censuses up to 1955 adopted the gainful worker approach through which occupation, industry and status of worker were asked for those who had a job. In the population censuses from 1960 to 1980, however, the labor force approach was adopted with a reference period of one week prior to the census date. By this approach, every person at a certain age or older was asked about his or her economic activity status for a reference period and thereby, he or she was classified into employed, unemployed or economically inactive. For the employed, industry, occupation, and status of worker were also asked additionally.

However, different approaches from that up to 1980 were applied to the 1985, 1990, and 1995 population censuses. As the Employment Structure Survey was conducted on a large scale sample at three year intervals from 1983 to provide employment data by region,²⁾ the population census was regarded as the only source for the cross-sectional analysis of occupation and industry with socio-demographic factors. For this reason the three population censuses

2) The Employment Structure Survey was a large scale sample survey to identify labor flow among regions, occupations or industries. This survey was conducted every three or five years from 1983 but after the fifth survey in 1997 it was stopped because the extension of sample size and survey items in the Economically Active Population Survey could provide various employment data, specifically by region.

adopted different approaches to economic activity surveys. However, as the result, a time-series analysis of the economic activity using the population census became impossible. Also the census could not play the role of a benchmark for the Economically Active Population Survey on a sample and monthly basis with the labor force approach (M.K. Kim, 1996). The 2000 population census returned to the labor force approach³⁾ for the economic activity survey. It included items on economic activity status, seeking jobs for the reference period, and whether job seekers were currently available for work or not.

Occupation, industry, and status of worker have been asked for the employed since the 1960 census with the exception of the 1985 census where only industry and occupation were asked. All industries and occupations of the respondents were classified according to the Korean Standard Classification of Industry and the Korean Standard Classification of Occupation. But the 1960 census applied its own classification of industry and occupation.

Since the 1980 census, with the exception of the 1985 round, status of worker has been classified into employer with employees, employer without employees, paid employees, and unpaid family workers. However, such a classification was not applied to the censuses prior to the 1980 census. For the 1970 and 1975 censuses, the paid employees were classified into regular workers with employment of one year or more, temporary workers with employment of one month to less than one year, and daily workers according to employment contract duration. In the 1966 census, the classification was made with the self-employed including employers with or without employees, unpaid family workers, regularly employed, temporarily employed and daily employed, and in the 1960 census, self-employed, employees and unpaid family workers.

A classification of the status of workers into self-employed, employees and unpaid family workers makes a time-series analysis possible with census data. However, because of the varying approaches, reference period, and structure of the employed by industry in censuses, we should be very cautious in a time-

3) According to the labor force approach, the employed are determined as persons engaged in work for profit during the reference period. The unemployed are persons who satisfy the following three conditions during the reference period: i) not working for profit, ii) seeking jobs, and iii) currently available for work (KNSO, 2001i).

Table 2.7 Approaches and Items on Economic Activity in Censuses, 1930-2000

Year	Approach	Reference Period	No. of Items	Description of Items
1930	Gainful worker	-	1	Occupation
1940	Gainful worker	-	1	Occupation (w/ industry & status of worker)
1944	Gainful worker	-	2	Occupation (w/ industry & status of worker), License
1949	Gainful worker	-	1	Occupation (w/ industry & status of worker)
1955	Gainful worker	-	1	Occupation (w/ industry & status of worker)
1960	Labor force	Nov. 24-30	7	Activity status (4), whether working or not, whether seeking work or not, reason for not seeking work, occupation, industry, status of worker
1966	Labor force	Sep. 22-28	4	Activity status (7), industry, occupation, status of worker
1970	Labor force	Sep. 21-27	6	Activity status (4), whether working or not, industry, occupation, status of worker, months worked
1975	Labor force	Sep. 22-28	9	Activity status (8), whether working or not, whether seeking work or not, industry, occupation, status of worker, type of sector, hours worked, whether additional work wanted or not
1980	Labor force	Oct. 25-31	6	Activity status (5), whether working or not, seeking work, industry, status of worker, occupation,
1985	-	-	3	Activity status (8), industry, occupation,
1990	-	Previous 1 year	4	Activity status (10), industry, status of worker, occupation
1995	-	Oct. 1-31	4	Activity status (9), industry, status of worker, occupation
2000	Labor force	Oct. 22-28	5	Activity status (7), industry, status of worker, occupation, years worked at present work

Note: Figures in parenthesis indicate the number of categories of activity status.

Source: M.K. Kim (2000: 138).

series analysis of economic activity using census data.

Probing questions on the status of being employed were asked in all censuses from 1960 to 1980 except the 1966 census in which the number of items were strongly restricted due to budget limitations. A question on whether applicants were seeking jobs was also asked to distinguish accurately the

unemployed in the 1960, 1975, 1980, and 2000 censuses.

Censuses on economic activity were done on a sample basis except the 1960 and 1985 censuses. The lower age limit for the respondents on items related with economic activity in population censuses was 14 years until the 1980 census and has been 15 years since the 1985 census.

VII. Other Sources of Demographic Data

1. Vital Registration

One of the most representative sources of population statistics other than the population census is the vital statistics based on the vital and civil registration systems. The vital events of birth, death, marriage, and divorce must be registered in the administrative agencies⁴⁾ within a defined period of time after their occurrence as regulated by the Civil Registration (*Hojeok*) Act and the Vital Registration Act. The vital registration system yields vital statistics on birth, death, marriage, and divorce in the form of frequency and vital rates.

The KNSO compiles vital statistics with raw data collected at local governmental levels regularly. The Annual Report on Vital Statistics provides the details of vital events in Korea. Meanwhile, a copy of the civil register including vital registration is sent to the lower unit of local government which is identical to the place of birth to revise the original civil registry. A copy of the register is also sent to the place of current residence to revise the resident registry.

Vital statistics in modern form were first compiled in Korea in 1910. Under Japanese colonial rule, the Chosun Governor collected the civil registers and compiled vital statistics. In the beginning, the vital statistics were compiled with considerable omissions at the place of civil registration (original place of family line) rather than the place of current residence or place of occurrence of vital events. It was not until 1937 when the Vital Survey Regulation was enacted that

4) The informant, as legalized by the Civil Registration Act, should register the vital event such as birth, death, marriage, and divorce at *Eup*, *Myeon*, and *Dong* (town level), which is the lowest unit in the Korean administrative system.

vital statistics were compiled on a regular basis and published annually in the Chosun Vital Statistics. However, the reliability of vital statistics was evaluated as low in the period between 1943 and 1948 because of political and social disorder (Ishi, 1972).

In 1949, after the establishment of the new government, the Population Survey Act and the Vital Survey Ordinance were in effect, so that every vital event had to be reported on the vital survey report form, apart from the civil registration form. The place as the reference for compiling vital statistics also changed from the place of family origin to the place of registration or of occurrence of vital event. In 1962, the Bureau of Statistics, Economic Planning Board, specified vital statistics as designated statistics No. 3 according to the Statistics Act. And the Vital Survey Regulation was promulgated to regulate the method of the survey and the duration of registration.

In 1970, vital registration and civil registration were unified to one registration form as it is currently. This reform was brought by the improvement of the registration system itself and the development of various social systems including the health insurance system. In fact, the health insurance system has played a key role in improving the registration of vital events and the quality of vital statistics. For example, the reporting of vital events in the corresponding year of occurrence of vital events has improved considerably; the registration rate for birth increased from 56.2 percent in 1975 to 95.2 percent in 1990 and to 99.7 percent in 2000; the registration rate for death increased from 72.3 percent in 1975 to 94.5 percent in 1990 and 99.5 percent in 2000; the registration rate for marriage and divorce rose from 39.2 percent and 68.7 percent in 1975 to 78.2 percent and 75.1 percent in 1990 and to 80.0 percent and 80.1 percent in 2000, respectively. Thus, the completeness of registration of birth and death was almost attained, solving the problems of delay and omission of registration. The vital statistics on cause of death have also been produced since 1983. The rate of classifiable cause of death was only 77.2 percent in 1981, but increased to 84.2 percent in 1991 and 99.2 percent in 2001.

It has been possible since 2001 to confirm the total number of vital events per year by a comparison of the accumulated number of vital events registered

Table 2.8 Comparison of Population Size in Different Sources

(Unit: thousand persons, %)

	Population Census (as of Nov. 1st)	Projected Population (A) ¹⁾ (as of Dec. 31st)	Resident Registration (B) (as of Dec. 31st)	B/A (%)
1995	44,609	45,308	45,982	1.49
2000	46,136	47,175	47,977	1.70

Note: 1) After adjustment of the census population.

late up to 16 months after their occurrence because of the rapid increase in the completeness of vital registration. In the past, we had to consider the pattern of delayed registration for the past 10 years to confirm the number of vital events. The time reference for compiling marriage and divorce statistics changed from the time of occurrence to that of registration (report).

2. Resident Registration

Population statistics can also be made by referring to the resident register. The resident register is managed by the lowest administrative units, Eup, Myeon, and Dong, according to the Resident Registration Act. The resident register is updated by the civil registration for birth, death, marriage and divorce and by the in-migration report for the place of residence. Thus, the resident register is maintained within the legal framework of the Civil Registration Act and Resident Registration Act. The population statistics through the resident registration system have been produced annually since 1992, which replaced the population statistics by the Year-end Current Residents Survey that had been maintained for about 80 years since 1910.

The resident register includes various demographic and socioeconomic characteristics of population such as sex, age, education attainment, and occupation. However, most information has been rarely updated since its first registration, so that the population statistics through the resident registration system are confined to quite basic characteristics such as sex, age, and administrative area.

Unfortunately, resident registration is known to suffer from low reliability because of widespread disguised migration, for instance, for the purpose of

purchasing real estate, arrangement of schools, tax or non-tax (family allowance) incentives of dependent family, employment, and voting. It is also very frequent to delay or omit reports in case of education or employment overseas. Thus, the size and structure of the population in one area as counted on the basis of the resident register might be different from that of the actual population. As a result, the size and structure of the whole registered population is likely to be over-counted. It is explicit in Table 2.8 that the population size for the whole country, counted from the resident registration appears bigger than that of the population census or population projections.

3. Population Projections

Population projections are used as an important source of population studies. The projected population comes from a comprehensive analysis of demographic data from various sources such as the population census, vital registration and resident registration. The first population projections using the results of the population census were made in 1961 by the Ministry of Home Affairs. The population from 1955 to 1975 was projected with the 1955 census population as a base population by applying the cohort component method. In 1962, the population projections for the period between 1960 and 1980 were made by the Bureau of Statistics, Economic Planning Board. Thereafter the population has been officially projected every five years in conjunction with the quinquennial population census. However, population projections by province have been made only since the 1995 census.

The population projections start from the adjustment of duplication and/or omission of the census population, for which the post enumeration survey and demographic analysis are carried out. The post enumeration survey is taken to measure both coverage errors and content errors. The net omission rates (undercount rates) of the population censuses as measured by the post enumeration survey and demographic analysis are presented in Table 2.9.

In population projections, the base population and the previous five years' population after the previous population census, are revised as the final population. In 2001, the future population from 2000 to 2050 was projected for

Table 2.9 Net Omission Rates in Population Censuses, 1960-2000

(Unit: %)

	Post Enumeration Survey	Demographic Analysis
1960	1.20	-
1966	2.40	1.33
1970	4.80	2.86
1975	3.70	2.02
1980	1.77	1.96
1985	0.82	1.40
1990	-0.04	-1.22
1995	1.25	1.43
2000	1.56	2.11

Note: Net omission rate=Omission rate-Duplication rate.

Source: KNSO (2001a).

the whole country and in 2002, from 2000 to 2030 for the provinces. It is generally known that the projected population is more likely to differ from the actual one as the projection period becomes longer.

4. Relationship between Sources of Population Statistics

The population census plays the role of benchmark for other demographic sources. The census presents the status of the population as of the census reference year (or time), which becomes the criterion for compiling other demographic statistics. For example, the result of the census provides a population for various sample surveys. The change of population in both size and structure between two consecutive censuses can be explained by the combination of vital statistics such as birth and death, and migration statistics. For population estimates or projections, the census result functions as the base population after some possible corrections

The vital statistics can explain the change of population for the five years between two consecutive censuses. Theoretically, the difference in population between two censuses should be identical with the change in vital statistics in an intercensal period. Practically, there is, however, no exact match between the population census and vital statistics, due to errors from one or both sources. For this reason, a comprehensive demographic analysis using both the population census and vital statistics is conducted to measure the accuracy of

the census population and thereby adjust the census result.

Resident registration can produce population statistics every year, whereas the population census can every five years. The population projections can give annual population data but only for the whole country or at most by province. However, resident registration can provide the annual population data even by the lowest administrative units of Eup, Myeon and Dong. From this viewpoint, resident registration has advantages of being timely and having a small area for statistical purposes. For this reason, population data derived from the resident registration system is widely utilized in many fields of administration. In particular, the resident population is recognized as official population statistics and is applied to the administration of military affairs, school enrollment, elections, social welfare, and restructuring of the organization of governments at both central and local levels. One of the most important functions of resident registration is to produce migration statistics. The KNSO has reported the number of in-migrants through administrative channels and compiled migration statistics by month, quarter, and year. To exactly measure migration flows and population size by small areas, the population census and resident registration compensate each other.

VIII. Conclusion

The population census has contributed to socioeconomic development as indirect capital in tangible and intangible forms. The population census has changed in terms of content and methodology to meet contemporary demands that reflect changes in society. Changes or reforms in the population census should be made to adapt to the new census environment, although some maintain that the census itself is inappropriate in a rapidly changing society. The following recommendations for future Korean census are suggested based on a review of its past evolution.

Firstly, the organizational structure for the population census should be more systematic and powerful for efficient census-taking in the future. The number of two-paycheck couples has increased along with the increase of female

participation in the labor force. One-person households, specifically with an elderly or young single person, have increased partly due to the breakup of the household or family. A temporary segregation from a stable settlement will also increase as lifestyles change into leisure-centered ones. Moreover, the issue of protection of privacy will be shared with a growing tendency to avoid interruption by external agencies and circumstances. Such changes may make census-taking difficult despite improvements in data collection methods.

To overcome these undesirable but unavoidable circumstances, the function and role of local government in the administrative hierarchy should be strengthened more and more by increasing partnerships between the KNSO and local governments. In this regard, the functions of local governments need to be legislated for future censuses. The substantial role of census-taking needs to be transferred from the central government to the local government. The central government or relevant organizations need to be responsible for the overall and basic tasks such as designing the census, securing the budget, and directing standard guidance for surveys. Local governments need to be responsible for the majority of work related to printing the questionnaires and other requirements: recruiting and training enumerators, publicity, data processing, tabulation of results, and the analysis for their regions according to standard directions. This may contribute to the activation of the local economy and to positive utilization of the census data by local governments.

Secondly, a reform or improvement in census methodologies including data collection methods is necessary for future censuses. Improvement in data collection methods should be related to elevating the efficiency of census operations and reliance of the respondents, taking comprehensive considerations into census related circumstances and developments in technology. Developed countries such as the United States, Canada, and Australia have already undertaken reforms to overcome problems in conventional censuses such as protection of privacy, timeliness of census results, etc. The United States has tested the adoption of the American Community Survey to cover items to be included in the long form of the census questionnaire, by which only basic items will be covered on a complete basis in the 2010 census. The American Community Survey will increase timeliness to identify rapid changes in social

phenomena and reduce the burden of response and the possibility of omission in data collection when compared with the census.

New technology, specially related to information and communication, should be included for future censuses. For example, Canada is trying to adopt an internet survey for the 2006 census. Such efforts will contribute to reducing census costs and the respondents' burden in the long run. However, new technology such as the internet should be introduced after taking its feasibility and applicability into consideration. The register-based census has been developed or tried in European countries. Such registration censuses can be introduced in the Korean population census, since many registration systems including resident registration, land and building registration, and other administrative statistics have already been developed in Korea. The introduction of a register-based census in Korea will contribute to improving timeliness in the quality of statistics, reduce costs, and reduce the burden on the respondents. However, the register-based census cannot be undertaken only by the effort of the KNSO and needs extensive work such as integrating various administrative registration systems and improving partnership between related agencies. The KNSO should be authorized to link with and utilize registration data from various agencies.

Thirdly, determining the items to be covered in the population census should be regulated. Items to be covered in the population census may change by addition or deletion. The number of items are a trade-off with regard to the survey burden and hence a basic principle should be established. The basic items need to be fixed within some range and therein a selection can be made possible according to the population census. The principle for the selection of items should be made between a complete and sample base and their periodicity. On the other hand, items with difficulty in response or feasibility for a sample survey need to be excluded in the population census. When the concept or criterion of the items are changed, a comparative analysis with a time series becomes very difficult.

Fourthly, data processing methods must be improved. Data capture and editing needs to be automatic. The OMR (optical mark reader) as a data capture method was used for the 1990 and 1995 population censuses but the data input

and editing was done by personal computers in 12 regional statistical offices for the 2000 population census. In the 2000 round of the population census, many countries adopted the OCR (optical character recognition) method as a data capture method, which is efficiently linked to the automatic coding system of occupation and industry classification. Evolution in data processing technology for the 2000 census in Korea was an outcome of efforts to reduce the census budget and to consider a reduction in data processing time. The decentralized system of data processing needs to be improved further in future censuses, combined with testing the introduction of the OCR.

Lastly, comprehensive research, on a systematic and continuous basis, must be carried out for future censuses, by establishing important issues of census-taking and securing the needed budget. From this viewpoint, the networking of both governmental and non-governmental experts related to issues facing the census should be established and fully utilized. The government should secure the budget appropriate for census-taking including research activities related to the improvement of the censuses. For efficient investment in censuses, research on cost-benefit analysis of census methods needs to be conducted.

FERTILITY

Kwang-Hee Jun

I. Introduction

The major aim of this chapter is to present a broad outline of the fertility transition from uncontrolled to below-replacement levels in Korea. More specifically, it has three purposes. First, it will discuss the process of fertility change from the first to the second transition. Second, it will examine the transition mechanisms, such as the intermediate variables, proportion married, marital fertility, and the imbalances in sex ratio at birth. Finally, it will discuss the future course of current fertility, or whether or not the currently very low fertility rates will stretch into the first half of the twenty-first century.

In Korea, the total fertility rates (TFRs) had sharply dropped from 6.3 births per woman from 1955-1960 to 1.17 births per woman in 2002, which is far below the 2.1 replacement level. The TFRs between 1985 and 2000, which are not higher than 1.6 births per woman, i.e., an average value for the developed countries of Europe, the United States, and Japan, are expected to exert heavily adverse impacts on the future of Korean society and the economy as a whole. In other words, the currently low level of fertility will not only bring with it an abrupt reduction of the total number of births in the short-run but also become a

predominant factor in causing a severe shortage in the labor force and the rapid ageing of the population in the long run.

The fertility transition in Korea has been closely associated with modernization and other tremendous socioeconomic changes during the second half of the twentieth century. As the society shifted from an agrarian subsistence economy to a modern, urban-based service one, real income per capita is steadily on the rise and poverty in absolute terms came to disappear almost completely. A large-scale social transformation has occurred along with a high rate of industrial development. This includes the expansion of mass education as well as improvements in literacy and an increase in the social participation of the population. Such a demographic revolution in Korea has made a substantial contribution to the economic miracle in the second half of the twentieth century (Bloom and Williamson, 1997; Williamson, 1998).

In Korea, population policies have had a remarkable influence on the fertility transition. The government adopted a national family planning program based on the belief that rapid population growth and a high ratio of child dependency would be a barrier to economic development. There was no doubt that the program was needed to improve the quality of life among the population. In the late 1990s, the government discarded policies adopting fertility control, and began to show interest in new population policies to improve the quality of life. Such new approaches of the Korean government to population policies can be understood as a response to the change of social environment: an increase in the proportion of the elderly population and the wide disparity in sex ratios at birth. The government now wishes to mitigate the negative influence of the low-fertility values and attitudes that are key to the rapid decline of actual fertility performance to 1.2-1.6 births since 1995.

This chapter begins with a brief description of fertility change that the Korean population has experienced in the twentieth century. After discussing the broad spectrum of fertility transition, the chapter will move to the transition mechanisms, such as proximate variables of fertility, proportion married and marriage ages, marital fertility, and the implication of sex preference for the transition. Finally, it will incorporate some speculation about the future course of the currently low fertility rates using the Bongaarts model, which seeks to

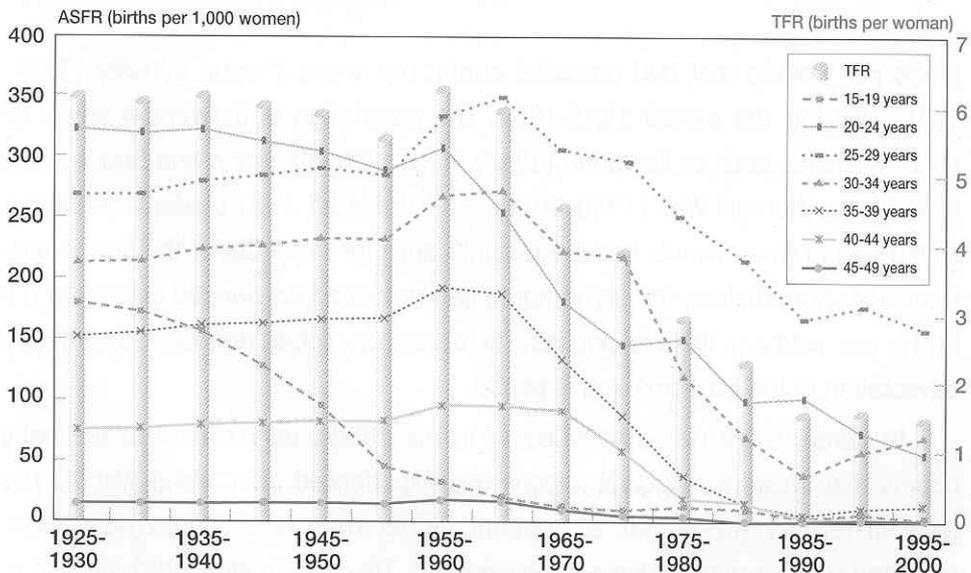
decompose the ratio of the total fertility rate relative to desired family size into a limited set of fertility-promoting and fertility-depressing factors.

II. An Outline of the Fertility Transition

1. The Pre-transition

Figure 3.1 and Table 3.1 presents TFRs and age-specific fertility rates (ASFRs) in Korea between 1925 and 2000. In Korea, the incubation period for the onset of the first, or classical, fertility transition extended nearly 50 years between 1910 and 1960. During the colonial period of Japan (1910-1945), TFRs were at around 6.0 births per woman, while the annexation heralded the beginning of the modern mortality transition. In brief, there had been few changes in age-specific fertility rates, even when compared with the TFRs of 6.0

Figure 3.1 TFRs and ASFRs in Korea, 1925-2000



Note: The five-year TFRs and ASFRs from 1970-2000 are estimated through calculation of the five-year moving averages of the KNSO data for the period concerned.

Source: T.H. Kwon and D.S. Kim (2002), and T.H. Kwon and K.H. Jun (1999) for the data prior to 1970, and KNSO (2003a) for data after 1970.

Table 3.1 TFRs and ASFRs in Korea, 1925-2000

(Unit : births per woman, births per 1,000 women)

Year	Total Fertility Rate(TFR)	Age-Specific Fertility Rate (ASFR)						
		15-19	20-24	25-29	30-34	35-39	40-44	45-49
1925-1930	6.44	189	324	269	214	153	75	14
1930-1935	6.13	173	321	270	216	155	77	14
1935-1940	6.22	58	323	281	226	161	80	15
1940-1945	6.08	128	313	286	228	164	81	15
1945-1950	5.96	96	305	292	234	167	83	15
1950-1955	5.60	45	289	287	233	168	83	15
1955-1960	6.30	38	308	335	270	194	96	18
1960-1965	5.99	20	255	351	274	189	92	17
1965-1970	4.64	12	180	309	223	134	59	10
1970-1975	3.96	10	146	301	220	88	19	7
1975-1980	3.00	13	152	253	122	38	17	5
1980-1985	2.38	11	160	216	72	15	2	0
1985-1990	1.62	4	103	168	39	6	3	0
1990-1995	1.64	4	74	177	58	12	2	0
1995-2000	1.55	3	56	159	72	15	5	0

Note: The five-year TFRs and ASFRs from 1970-2000 are estimated through calculation of the five-year moving averages of the KNSO data for the period concerned.

Source: T.H. Kwon and D.S. Kim (2002), and T.H. Kwon and K.H. Jun (1999) for the data prior to 1970, and KNSO (2003a) for data after 1970.

births per woman that had prevailed during the entire Chosun dynasty (1392-1910). During the period 1945-1960, the population underwent a series of political events, such as liberation (1945), bipartition into North and South Korea (1948), the Korean War (1950-1953), and the April 19th student revolution (1960). All of these events had great significance for the onset of the first fertility transition. Nonetheless, fertility in Korea had remained unchanged at around 6.0 births per woman, despite political disturbances, social uneasiness, and the devastation of the economy in this period.

In Korea, there was a baby boom in the 1950s, very similar to the baby booms that Western industrial nations had experienced after World War II. The level of fertility was about 10 percent higher than what might have been expected under a normal demographic regime. This baby boom, which peaked in 1959, played the role of more than compensating for the loss of infants during the Korean War. Unlike the baby boom in Western industrial countries, the Korean baby boom took place in settings where there had been few methods of

fertility regulation except the use of unsafe or unhygienic abortions (T.H. Kwon, 1977; L.J. Cho et al., 1982).

2. The First Transition

The first phase of the fertility transition, or classical transition, began in the 1960s: the TFRs had declined sharply from 6.3 births per woman from 1955-1960 to 2.4 births per woman from 1980-1985. The years between 1960 and 1975 refer to the early part of the first fertility transition in which fertility decline is an adjustment of the past population to new circumstances rather than a direct result of modernization and other socioeconomic changes. During this period, fertility decline and a massive rural exodus occurred as a response to the population pressure, extreme poverty, and widespread unemployment that took place in the middle of the newly evolving demographic exigencies, particularly a remarkable improvement in life expectancy at birth.

Due to the national family planning programs, the TFRs began to drop from 6.0 births per woman from 1960-1965 to 4.6 births per woman from 1965-1970. In 1966, fertility dropped more sharply in Seoul and other metropolitan cities because Korean couples tried to avoid childbearing in the "white horse" year (T.H. Kwon, 1977).¹⁾ Induced abortions were prevalent in urban areas, and contraceptives began to be supplied through market channels from the early 1960s. The tempo of fertility decline was more rapid in rural areas than in urban areas because, beginning in the late 1960s, the Korean government invested more resources in family planning in rural areas than in urban ones. In the early 1970s, the tempo of fertility decline slowed down to around 4.0 births per woman, but it later gained momentum leading to the end of first fertility transition by dropping sharply to 3.0 births per woman in the late 1970s.

The later phase of the first fertility transition began in the early 1970s when

1) The "horse" year, which repeats once every twelve years, is part of the Chinese zodiac calendar. The "white horse" year, which appears once every sixty years, is the worst of the "horse" years. In Korea and Japan, it foreshadowed the bad fortune of a Japanese Empress for girls born in the year. The usual "horse" years also influenced Korean fertility in 1978 and 1990. The Chinese zodiac impact was a quantum reduction in fertility before the first transition (1960-1983), while the same effect was apparently more revealed by a high distortion of the sex ratio at birth in the process of the second transition (1983-2002).

Korean couples internalized the concepts of desired family size (DFS), fertility regulation, and the value of children. This later phase has implications entirely different from that of the early phase of the first transition. Before 1975, traditional family norms had exerted strong constraints on Korean couples. Until then, most Korean couples did not internalize the idea that they would be able to achieve their desired family size through contraception and induced abortion. Indeed, they had to participate involuntarily in government-sponsored family planning programs in situations of extreme poverty, unemployment, and the difficulty of supporting a large family resulting from improved infant mortality and an increasing number of surviving children. In the meantime, young men and women married after 1965 played an important role in leading the later phase of the first fertility transition. They began to participate in voluntary fertility regulation at the end of their childbearing from 1975. From a broad perspective of the first transition, it is a plausible argument that the idea of modern reproductive behavior found root in the thinking of Korean couples in the mid 1970s. A sharp drop in fertility in the 1980s was a direct result of behavioral adjustments made by the more recent married cohorts who grew up to adopt small-family-related norms and attitudes.

3. The Second Transition

In the late 1980s — more precisely, the years after 1983 — is the period in which the assumption that the fertility level would stabilize in the long run at a 2.1 replacement level turned out to be incorrect. As will be seen later in this chapter, the progression of this second transition illustrates that the expectation of fertility rebounding to its replacement level appears to be too optimistic.

Fertility had dropped sharply from 2.38 births per woman from 1980-1985 to 1.47 births in 2000, 1.30 births in 2001, and 1.17 births in 2002. The emergence of below-replacement fertility was far beyond the expectations held by most demographers and policy makers of that time. The rapid transition from high fertility to near- or below-replacement fertility is an extremely rare and unprecedented episode in the entire history of fertility transitions all over the world.

Some demographers and opinion leaders had often argued that sex preference is a strong impediment to a continuous drop in fertility in a male-centered society like Korea. However, there has been no strong evidence supporting this argument. Rather, the mainstream argument is that child preference by sex and birth order has made a substantial contribution to the accelerated tempo of fertility transition after the second half of the 1980s (T.H. Kwon, 1997; T.H. Kim, 1997a; D.S. Kim, 1997).

Many field surveys and research reports suggest a variety of factors responsible for the rapid transition to very low fertility in the years between 1985 and 2000 (T.H. Kwon, 1997). Among the most important reasons are the intense competition for upward mobility as well as the education of children, the arrival of a high mass consumption society, and the conflict between women's childbearing and their paid employment in Korea.

According to previous fertility surveys, respondents mention several reasons why they end up having no more than the DFS (KIHASA, 1997, 2000). These include the high cost of childbearing, physical and psychological pressures from parenting, and overcrowded housing conditions. Of course, these responses do not identify any details concerning the financial and psychological burden related to the college entrance examinations of children. Nonetheless, it can be surmised that the currently very low fertility or a rapid drop in fertility reflects the harsh competition in Korean society.

Another factor responsible for very low fertility or a further reduction of its current level is the emergence of a mass consumption society. The income level of Korean workers has steadily improved since the mid 1980s, despite several turns and twists after the outbreak of financial crisis of 1997. Most Korean families have high demand for consumer goods and services. Many Korean couples face numerous exigencies of life, but it is essential for them to maintain the life style, status, and prestige of their fellow middle class citizens. In such a situation, the two-child norm is the standard for every family and household in Korea: the rearing of more than two children is a completely outmoded custom, and it is very difficult for Korean parents to have more than two children prepare for high school or prestigious colleges.

III. The Transition Mechanisms

1. Intermediate Variables

Table 3.2 shows the major components of change in the TFR over the past four decades of 1955-2000. An increase in marriage age, induced abortion, and contraceptive use played dominant roles to an equal degree in the first fertility transition between 1960 and 1985. Marriage postponement and increasing incidence of induced abortion were two major components of fertility change from 1960-1965, whereas contraception and induced abortion were two critical variables responsible for the decline in fertility from 1965-1970.

In the second transition between 1985 and 2000, however, the relative importance of those components has changed significantly. The fertility-inhibiting effect of contraceptive use as well as sterilization became most conspicuous from 1975 to 1990, but levelled off significantly from 1990 to 1995. In the meantime the fertility-inhibiting effect of the rising age at first marriage of women

Table 3.2 Components of TFR Changes, 1955-2000

Year Components	1955- 1960	1960- 1965	1965- 1970	1970- 1975	1975- 1980	1980- 1985	1985- 1990	1990- 1995	1995- 2000
TFR changes (%)	5.6	-16.8	-17.6	-13.4	-24.6	-25.7	18.3	1.2	-5.4
(a) Marital Composition	-3.9	-6.3	-3.7	-3.5	-5.6	-6.4	-6.5	-5.8	-9.9
Proportion Married	-6.9	-7.6	-3.4	-3.7	-4.9	-6.7	-7.9	-5.6	-9.6
Divorce & Widowhood	3.0	1.3	0.5	0.2	0.7	0.3	1.4	-0.2	-0.3
(b) Age-Specific Marital Fertility Rate	9.5	-10.5	-14.1	-9.9	-19.1	-19.3	-11.8	7.0	4.5
Contraception	-	-1.7	-9.5	-5.9	-23	-23.9	-13.4	-5.3	-7.4
Induced Abortion	-3.1	-5.1	-4.6	-4	3.9	4.6	1.6	12.3	11.9
Others	11.0	-3.8	-	-	-	-	-	-	-

Note: See K.H. Jun (1997) for details on decomposition analysis.

continued to increase between 1975 and 2000. The decreasing incidence of induced abortion apparently boosted fertility in the same period, particularly in the decade from 1990 to 2000.

The level of fertility has paralleled the shift in the value placed on children or the demand for children. This is perhaps a result of the ever increasing role of family-size norms for the actual practice of fertility regulation. The DFS was about five children (3 sons and 2 daughters) around 1960, but began to drop to 3.9 in 1966, 3.6 in 1971, and 3.1 in 1973 (Table 3.6). The DFS is currently a little more than two children, according to the National Fertility and Family Health Survey of 1997 and 2000 (KIHASA, 1997, 2000). On the other hand, son preference still remains strong enough to boost the size of families completed by the individual couples. However, it does not pose any practical barrier against the maintenance of below-replacement fertility, given the potential for adopting induced abortion as a means of preventing the birth of an undesired daughter (T.H. Kwon et al., 1997a; D.S. Kim, 1997; T.H. Kim, 1997).

2. Marriage Proportion

In Table 3.3, the average age at first marriage had risen from 21.5 to 26.5 years over the last four decades from 1960-2000. The gradual rise in age at marriage had slowed down in the later 1960s, but it has accelerated continuously since that time. In this regard, having reliable forecasting where the terminal point in the increasing ages at marriage would be will have tremendous implications for the accurate prediction of TFR changes during the second transition and the size of population in the twenty-first century Korea (Bongaarts and Potter, 1983; Bongaarts, 1998, 2002).

A gradual rise in the mean age at marriage has resulted from a continuous rise in the proportion of single women in their 20s. For example, the proportion of women aged 20-24 who are currently married has dropped sharply from 64.8 percent in 1960 to 10.7 percent in 2000. Similarly, the corresponding figure among those aged 25-29 has dropped from 93.1 percent in 1960 to 59.1 percent in 2000. However, the proportion married among those aged 30-34 has increased from 91.7 percent in 1960 to 94.5 percent between 1970 and 1975,

Table 3.3 Proportion of Women Currently Married and Age at Marriage, 1960-2000

(Unit: %, years)

Year Age	1960	1966	1970	1975	1980	1985	1990	1995	2000
15-19	0.070	0.038	0.028	0.026	0.017	0.009	0.005	0.008	0.007
20-24	0.648	0.477	0.423	0.372	0.337	0.281	0.195	0.167	0.107
25-29	0.931	0.898	0.884	0.868	0.849	0.818	0.773	0.699	0.591
30-34	0.917	0.939	0.946	0.944	0.943	0.931	0.924	0.914	0.869
35-39	0.882	0.892	0.920	0.932	0.934	0.935	0.928	0.922	0.907
40-44	0.821	0.827	0.848	0.882	0.869	0.884	0.903	0.900	0.889
45-49	0.760	0.760	0.769	0.791	0.867	0.882	0.861	0.864	0.861
Singulated Mean Age at Marriage (SMAM)	21.50	22.90	23.30	23.70	24.10	24.70	24.80	25.40	26.50

Source: KNSO (*Population and Housing Census Report*, various years); T.H. Kwon and D.S. Kim (2002: 308-309).

and then dropped to 87.0 percent in 2000. Such a decrease in marriage for women aged 30-34 in recent years is mainly attributable to the expansion of female job or educational opportunities in the process of modernization and industrialization in Korea.

In Korea, there has been a great amount of pressure on women who remain single past the prime ages of marriage. The pressure from the society as well as from their own family has precipitated early marriages. In recent years, a rise in age at first marriage has been accompanied by a sharp increase in premarital sexual activity and a higher incidence of premarital pregnancy. Thus, the adoption of induced abortion has become the most prevalent way to avoid unwanted pregnancy. The analysis of single women's sexual behavior is of critical importance in the period of the second transition. Yet it is not an easy task to make a causal connection from largely unobservable sexual behavior to the fertility-inhibiting effects of marriage delay, contraception, and induced abortion.

For women aged 35 or over, the proportion married has increased somewhat. Between 1960 and 1980, the figure had been on the rise from 88.2 to 92.8 percent among those aged 35-39, from 82.1 to 90.3 percent among those aged 40-44, and from 76.0 to 86.1 percent among those aged 45-49.

During the second transition of 1985-2000, however, the proportion married for women aged 35 or over has slightly decreased or remained at the same level as the corresponding proportion between 1960 and 1980. The share of those widowed has been on the decline, but the steadily increasing share of those divorced has contributed to the declining proportion of those currently married.

In Korea, few adult men and women wish to live alone for their entire lives, despite a steady increase in the age at marriage. In recent years, women who wish to remain single during their lifetime are on the gradual increase. However, men and women expressing such a desire are estimated to be only 5-10 percent. This proportion is much smaller than the proportion found in Western industrial nations (6-17 percent).

It is obvious that a steady increase in the proportion of single women in their 20s is a prelude to the increase in the proportion of women never married for a lifetime. According to previous research, however, few men and women intend to remain single during their lifetime. There has been no strong ground to argue for the ever-growing tendency for men and women to adopt new lifestyles and freedom. In this sense, most men and women still continue to embrace the idea of universal marriage.

3. Marital Fertility

Table 3.4 presents age-specific marital fertility rates between 1960 and 2000. Comparison of this table with Table 3.1 reveals that the difference between age-specific fertility rates and age-specific marital fertility rates is wide among women aged less than 30 years, while it is negligible among those aged 30 or over. More than 90 percent of women aged 30 or over are exposed to the possibility of childbearing within marital union. This implies that nearly all women aged 30 or over are currently married and expect to have children.

The total marital fertility rate (TMFR) has dropped abruptly from 7.3 births per woman in 1960 to 3.4 births per woman in 1985, but began to increase slightly to 3.7 births per woman in the second transition of 1985-2000. Marital fertility rates are higher for younger ages than for older ages. This implies that women achieve their DFS during their early reproductive career, soon after the

Table 3.4 Age-Specific Marital Fertility Rate, 1960-2000

Age	Year	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24		442	456	456	478	404	423	426	377	364
25-29		368	367	363	304	286	194	219	253	255
30-34		297	265	218	154	121	44	55	76	97
35-39		217	181	113	62	43	10	10	16	19
40-44		114	91	47	24	17	2	2	3	3
45-49		23	18	17	6	7	1	0	0	0
TMFR (20-49)		7.27	6.88	6.07	5.14	4.39	3.37	3.56	3.63	3.69

Note: Total marital fertility rate (TMFR) is the sum of age-specific fertility rates (Table 3.1) divided by age-specific proportions married (Table 3.3) for ages between 20 and 49.

formation of marital unions, and limit their family size during a later stage of childbearing.

As shown in Table 3.4, the marital fertility rate for women aged 20-24 increased from 442 in 1960 to 478 in 1975, then decreased very rapidly to 364 in 2000. Such a trend found from 1960-1980 is also observed for those aged 25-39. The marital fertility rate for those aged 25-29 had dropped very quickly from 368 in 1960 to 194 in 1985, but rose up again to 255 in 2000. For those aged 30-34, their marital fertility had dropped drastically from 297 in 1960 to 44 in 1985, but increased to 97 in 2000. For those aged 35-39, the marital fertility rate had dropped very drastically from 217 in 1960 to 10 in 1985, then rose up again to 19 in 2000.

These trends of marital fertility rate over the last several decades seem to result from an increase in the proportion of women aged 20-29 who are never married as well as a continuous rise in age at marriage. However, it is not a groundless conjecture to argue that the recent increase in marital fertility among the higher age group may have resulted from a regulation of both the number of births and the spacing of births, both of which have been practiced by recent marriage cohorts during the second transition of 1985-2000. Related to this, the incidences of premarital pregnancy at the individual level need to be carefully examined in order to gain more insight into whether it has accelerated marriage timing and actual fertility behavior.

4. Imbalance of Sex Ratios at Birth

The imbalances in sex ratio at birth (SRB) in Korea are caused by two factors: biological and sociological (D.S. Kim, 1997; T.H. Kim, 1993; C.B. Park and N.H. Cho, 1995). First, biological influences occur when the improvement in health technology brings about a modification in the fetal mortality rates of boys, which is usually higher than that of girls by 12 percent. Second, sociological influences refer to the family-size limitation through sex-selective abortion, which is a means of achieving the values of a small family given the strong son preference. This is also related to the improvement in medical technology.

The SRBs had remained at around 105-106 boys per 100 girls before 1985. As shown in Table 3.5, however, these have been on the rise to 109-116 boys per 100 girls in the course of the second fertility transition. Before identifying the causes and effects, demographers and policy makers have blamed strong sex preference for the SRB imbalances. They indicated that one of the consequences will be the confusion of marriage markets in which men and women at marriageable ages have difficulty in finding spouses. It is, therefore, not surprising that the government has hastily tried to address this SRB imbalance by campaigning against sex preference and passing laws designed to curtail the incidence of sex-selective induced abortions.

Previous research has put more emphasis on the fact that the SRB imbalances were more serious at the third or higher order than at the first or second order (D.S. Kim, 1997). However, the effects of third or higher order births on the SRB as a whole are minimal or even negligible, since the proportion of total births that the third or higher order births takes has dropped to below 10 percent or remained at this level since the late 1980s. According to previous research, there had been notable variation in the SRBs depending on the period, region, or country, but the SRB imbalances did not further lead to the aggravation of social problems, partly thanks to the lessening differences of mortality between sexes. Some recent statistics show that there have also been signs of an improving SRB imbalance since 1997. These statistics suggest that the confusion in marriage markets is not so serious in 2000 as existing research has indicated (D.S. Kim, 1992, 1997; KNSO, 2003a); rather the worst problem results not from SRB imbalances, but from the tendency to remain single among

Table 3.5 Parity-Specific Sex Ratios at Birth, 1985-2000

Year	SRBs	1st Birth	2nd Birth	3rd Birth	4th or higher
1985	109.5	106.0	107.8	129.0	146.8
1986	111.7	107.3	111.2	129.0	149.8
1987	108.8	104.1	109.1	138.5	148.0
1988	113.3	107.2	113.2	134.7	182.0
1989	111.7	104.1	112.5	164.5	198.0
1990	116.5	108.5	117.0	188.9	209.3
1991	112.4	105.7	112.5	179.8	194.6
1992	113.6	106.2	112.5	192.0	213.1
1993	115.3	108.5	117.0	189.2	235.8
1994	115.2	106.5	114.7	202.6	224.9
1995	113.2	105.8	111.7	177.5	204.3
1996	111.6	105.3	109.8	164.2	185.1
1997	108.2	105.1	106.3	133.6	153.9
1998	110.1	106.0	108.1	145.0	153.5
1999	109.6	105.6	107.6	142.1	154.7
2000	110.2	106.2	107.4	141.7	154.9

Source: KNSO (*Vital Statistics Report* (2003a, KOSIS), various years).

marriageable age women who wish to work in entertainment industries, such as hostess bars and sex-trade operations.

As shown in Table 3.5, it seems apparent that the extent of sex preference has weakened. With the implementation of information programs and the passage of laws and regulations, the SRB imbalances began to improve gradually. However, many surveys indicate that there have been no significant changes in the proportion of women who have strong sex preference, as they say they would continue to give birth until they have at least one son. These responses are in marked contrast to weakening sex preference in recent years that may influence the practice of induced abortion through gender selection. In this regard, demographers and policy makers will have to exert their utmost efforts to dispel the deep-rooted sex preference in the minds of Korean men and women and stabilize the SRBs to natural ratios, or 105-106 boys per 100 girls.

IV. The Future Course of Current Fertility

Given the current situation where the second transition is under way, this section forecasts the future course of fertility using the Bongaarts model (Bongaarts, 1998, 2002).

In Korea, a critical issue in the recent introduction of new population policies relates to whether or not the currently very low, below-replacement fertility will stretch itself into the first half of the twenty-first century. One group of demographers points to the indisputable fact that fertility has dropped in nearly all countries. This is the case in the countries of Europe and North America, where fertility has been at below-replacement level since the mid 1970s, as well as in the newly industrialized countries in East Asia (Atoh et al., 2001). In a few instances, largely Catholic nations (e.g., Argentina and Chile), fertility has levelled off above replacement, but these are still considered exceptions. According to this group of demographers, replacement fertility is simply a theoretical abstraction that provides no guideline for young married couples building their families, and below-replacement fertility will operate as the behavioral norm of the twenty-first century.

Some optimistic demographers hold an opposite view. They argue that the currently very low fertility level is merely a transitory phenomenon and that fears of imminent depopulation prospects caused by this very low fertility are groundless in some countries. This perspective is based on the data on DFS, which has remained near or above two children in all nations with available data. In this view, the observed below-replacement fertility is largely attributable to a continuing shift in the timing of childbearing. Once this shift ends up—as it eventually must—the corresponding very low fertility will stop. Thus, fertility will be back near replacement level.

Both of these competing views are valid to some extent. The actual ongoing situation is more complicated than it appears. For a full assessment of the situation, a separate examination of the trends in DFS as well as individual factors linking DFS to total fertility rates is required.

Table 3.6 Period TFR, Desired Family Size, and Cohort TFR, 1960-2001

Period TFR		Desired Family Size (DFS)		Cohort TFR	
Year	TFR	Women aged 15-44	Women aged 25-29	Birth Year	TFR
1960	5.99	5.0	-	1935	5.14
1966	5.29	3.9	-	1940	4.31
1974	3.58	2.8	-	1945	3.21
1982	2.69	2.5	2.2	1950	2.50
1984	2.09	2.0	1.9	1955	2.17
1987	1.62	2.0	1.9	1960	2.07
1990	1.59	2.1	1.9	-	-
1993	1.67	-	-	-	-
1994	1.67	2.1	2.1	-	-
1997	1.54	2.2	2.1	-	-
1999	1.42	-	-	-	-
2000	1.47	2.2	2.1	-	-
2001	1.30	2.2	-	-	-

Source: T.H. Kwon (1997); KNSO (2003a, KOSIS).

(1) Desired Family Size (DFS)

In the course of the first transition, the potential supply of children or the biological capacity for childbearing of a couple, is one of the critical variables determining fertility. At the same time, the demand for children or DFS is one of the crucial factors influencing the fertility level in nations that are near or at the end phase of the first transition.

Table 3.6 presents period TFR, DFS, and cohort TFR between 1960 and 2001. As shown in Table 3.6, the period TFR was about 6.0 births per woman in 1960, while the DFS averaged 5.0 births per woman from 15-44 years. This means that the potential supply of children was larger than the demand for children by one or more births. The oversupply of children continued to last until 1983, the last year of the first transition (T.H. Kwon, 1997). Since 1984, however, the situation has reversed: demand has surpassed supply. In other words, Korean women born in 1955 and 1960 had cohort TFRs that nearly approached their DFSs, while the period TFRs have been far below the DFS of 2.1 children since 1985.

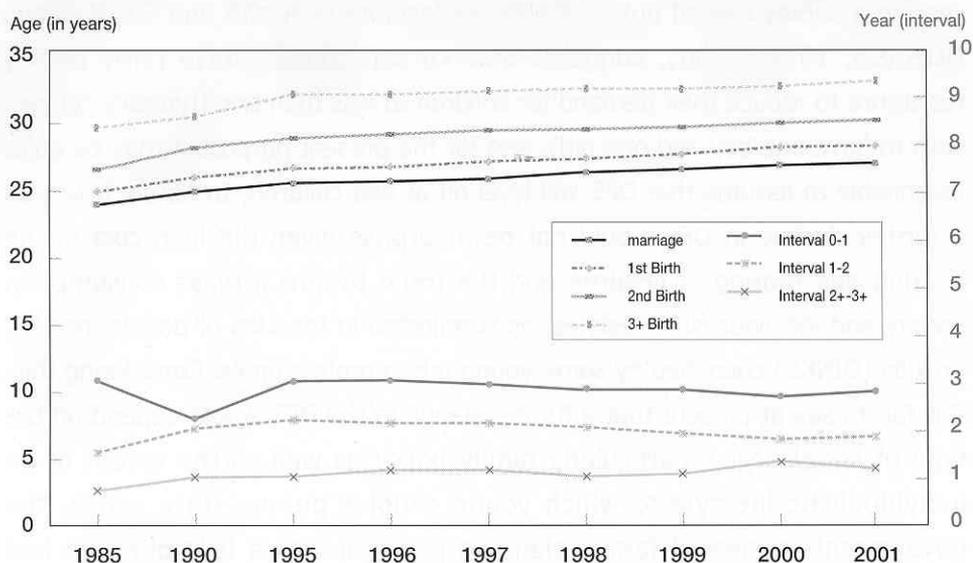
Existing fertility theories do not provide a satisfactory explanation of the relationship between the supply of children and the demand for children in the

course of fertility transitions (Bongaarts, 1998, 2002). The empirical data, as seen in a survey carried out by the Korea Institute of Health and Social Affairs (KIHASA, 1997, 2000), suggests that Korean couples have fairly strong resistance to reduce their demand for children to less than two (typically couples wish to have one boy and one girl), and for the present purpose it may be quite reasonable to assume that DFS will level off at two children. In Korea, however, a further decline in DFS would not be a surprise given the high cost of the bearing and rearing of children and the trend toward a mass consumption society and individualistic lifestyles, as is reflected in the idea of double income, no kids (DINKS) cherished by some young urban professionals. Considering this, it is fair to say at present that a future change in the DFS would depend on the type of social policy, particularly family policy as well as the extent of an individualistic lifestyle to which young couples pursue. In a sense, the government-sponsored family planning program was a leitmotif that had generated the fertility-depressing effects in the course of the first transition. However, in the course of the second transition, the fertility-promoting effects will depend heavily on child-friendly social policies, particularly feminist-oriented family policies with a stronger emphasis on gender equality inside and outside the home. Social and family policies, when newly formulated by the Korean government, will have to focus on the expansion of opportunities that are helpful for young couples to achieve DFS in the early stage of their family building.

(2) Unwanted Fertility (F_u)

In the later phase of the first transition, incidences of unwanted fertility typically decline as a consequence of a greater reliance on effective contraceptive and the use of fairly safe, hygienic induced abortion. In the course of the second transition, this trend is more likely to continue with the help of newly developed, innovative contraceptive methods. In Table 3.8, unwanted fertility dropped from 0.22 births in 1985 to 0.10 births in 2001. In the future, more efficient, safer contraceptive methods developed by innovative technology will increase the rate of contraceptive use while reducing contraceptive failure significantly. Although controversial, reliance on induced abortion will also increase as more convenient abortifacient are made easily available in a nation where young couples have

Figure 3.2 Age at Marriage, Childbearing Ages, and Birth Intervals, 1985-2001



fear of the adverse consequences of surgical abortion procedures (T.H. Kwon et al., 1997). As a result, an individual couple's ability to regulate fertility to the DFS level will almost certainly improve in the phases of the second transition. Correspondingly, unwanted fertility will be a rare phenomenon. However, an exception to this trend is highly plausible if the Korean government puts a severe restriction on access to abortion procedures, under the slogan of maternal protection and the restoration of SRBs to their natural ratios.

(3) Age at Childbearing (Ft)

As long as the ages at childbearing keep rising, this factor operates to depress current fertility. Table 3.7 presents the parity-specific TFR, mean age at first marriage and at childbearing between 1985 and 2001. As shown in the last panel of Table 3.7, the tempo-adjusted total fertility rates (TFRs) remove the fertility-tempo effects resulting from rises in age at childbearing. These are fairly higher than the TFRs actually observed at different points in time.

Indeed, it is fair to say that the period TFRs are not at extremely low levels if the fertility-distorting effects due to changes in ages at childbearing are removed. In principle, the rise in childbearing ages can persist for several

Table 3.7 Parity-Specific TFR, Mean Age at First Marriage, Mean Ages at Childbearing, and Tempo-Adjusted TFR, 1985-2001

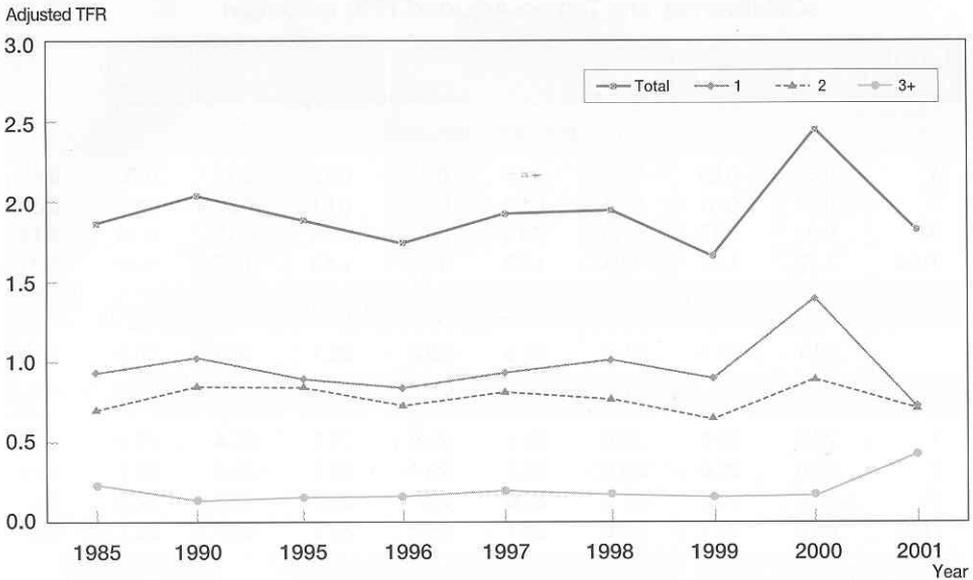
Birth Order	1985	1990	1995	1996	1997	1998	1999	2000	2001
TFR (per woman)									
1	0.85	0.83	0.79	0.76	0.75	0.72	0.72	0.70	0.63
2	0.64	0.61	0.71	0.67	0.65	0.61	0.57	0.62	0.55
3+	0.21	0.13	0.14	0.15	0.15	0.15	0.13	0.15	0.13
Total	1.70	1.57	1.64	1.58	1.55	1.48	1.42	1.47	1.31
Mean Age at First Marriage (in years)									
	24.1	24.8	25.4	25.5	25.7	26.1	26.3	26.5	26.8
Mean Childbearing Ages (in years)									
1	24.9	25.9	26.5	26.7	26.9	27.2	27.4	27.9	28.0
2	26.5	28.0	28.8	28.9	29.1	29.3	29.4	29.7	29.9
3+	29.6	30.3	31.9	32.0	32.1	32.2	32.3	32.4	32.7
Total	26.0	27.1	28.0	28.1	28.3	28.5	28.7	29.1	29.2
Tempo-Adjusted TFR (per woman)									
1	0.94	1.04	0.90	0.84	0.94	1.02	0.90	1.40	0.70
2	0.71	0.87	0.85	0.74	0.81	0.76	0.63	0.89	0.69
3+	0.23	0.15	0.16	0.17	0.19	0.17	0.14	0.17	0.43
Total	1.88	2.06	1.91	1.75	1.94	1.95	1.67	2.46	1.82

Source: KNSO (*Vital Statistics Report* (2003a, KOSIS), various years).

decades. However, it will eventually stop and at that time the period TFRs will have to rise as the fertility-inhibiting effects of rising childbearing ages are removed. In order to experiment with the plausibility of such an expectation, the Korean government will have to find new tools to implement the ideas of social and family policies that incorporate recent scholarly achievements in the feminist movement and social scientific disciplines: improving the welfare of working mothers, family allowances, tax exemption, tuition grants, and parental leave.

In conjunction with below-replacement fertility, rising ages at marriage are probably a result of interacting socioeconomic factors. As shown in Table 3.7, the vital registration data indicate that the mean age at first marriage rose from 24.1 years in 1985 to 26.8 years in 2001, with an average annual increase of 0.17 years. In addition, maternal age at first birth also rose from 24.9 years in 1985 to 28.0 years in 2001 with an increase of 0.2 years annually. Despite some variations in the extent of the increase, ages at childbearing also rose for the

Figure 3.3 Parity-Specific Adjusted TFRs in Korea, 1985-2001



birth of second order as well as the birth of third or higher orders. It is evident that the discrepancy between actual period TFRs and tempo-adjusted TFRs appears especially large for years with a great increase in ages at childbearing and ages at first marriage. Thus, recent rises in the age at marriage and childbearing contribute greatly to the current below-replacement fertility level.

Table 3.8 summarizes the effect of unwanted fertility and rising ages at childbearing on the current fertility rate, based on the Bongaarts model through which the period TFR is linked to DFS in the period between 1985 and 2001. In the bottom panel (7), (8), and (9), the variables promote current fertility when the coefficients are greater than 1.0, while the opposite is true when the coefficients are smaller than 1.0. The fertility-promoting effects of unwanted fertility were at a peak of 15 percent in 1985 and remain at nearly 8 percent from 1990-2001. This is in sharp contrast to the share of unwanted fertility being more than 20 percent out of total fertility in the first transition of 1960-1975 (T.H. Kwon, 1997; K.H. Jun, 1997). Should all Korean couples practice effective contraception and safer abortion, the fertility-promoting effects of unwanted fertility will almost disappear. Thus, in such situations, the course of fertility will end up with a further reduction in the currently very low fertility.

Table 3.8 Decomposition of TFR and DFS Based on the Bongaarts Model, 1985-2001

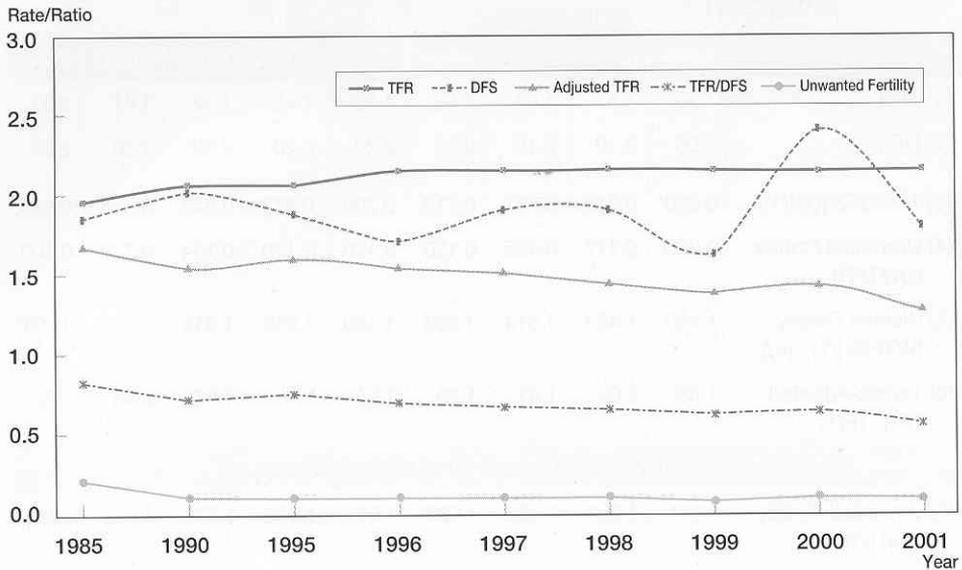
	1985	1990	1995	1996	1997	1998	1999	2000	2001
(1) TFR	1.70	1.57	1.64	1.58	1.55	1.48	1.42	1.47	1.31
(2) DFS	2.00	2.10	2.10	2.20	2.20	2.20	2.20	2.20	2.20
(3) TFR/DFS [(2)/(1)]	0.850	0.748	0.781	0.718	0.705	0.673	0.645	0.668	0.595
(4) Unwanted Fertility (UWTFR)	0.220	0.117	0.126	0.120	0.120	0.120	0.104	0.120	0.103
(5) Wanted Fertility (WTFR) [(1) - (4)]	1.490	1.453	1.514	1.460	1.430	1.360	1.316	1.350	1.207
(6) Tempo-Adjusted TFR (TFR')	1.88	2.06	1.91	1.75	1.94	1.95	1.67	2.46	1.82
Fertility-Inhibiting (or Promoting) Effects									
(7) Unwanted Fertility (Fu) [(1)/(5)]	1.141	1.081	1.083	1.082	1.084	1.088	1.079	1.089	1.085
(8) Fertility Tempo (Ft) [(1)/(6)]	0.904	0.762	0.859	0.903	0.799	0.759	0.850	0.598	0.720
(9) Other Variables (F') [(1)/(2) * (7) * (8)]	0.824	0.908	0.840	0.735	0.814	0.814	0.703	1.027	0.763

Note: The fertility-inhibiting or promoting effects due to unwanted fertility (Fu), rising childbearing ages (Ft), and other variables (F') were estimated on the basis of Bongaarts (1997) model. Refer to Table 3.1, Table 3.6, and Table 3.7 for the data on TFR, DFS, and adjusted TFR (TFR').

The fertility-depressing effects of rising age at childbearing become stronger when there are significant rises in the age at marriage as well as childbearing ages. For example, a temporal delay in childbearing reduced the period TFR by 40 percent in 2000, and by about 20-25 percent in 1990, 1997, 1998 and 2001. In the meantime the fertility-inhibiting effects of other residual factors reduced the period TFR by 25-30 percent in 1996, 1999, and 2001. However, in 2000, the residual factor increased the period TFR by three percent. Such a varying effect of residual factors implies that the variables that are not incorporated into the Bongaarts model contributed much to the rise of the fertility level in 2000.

The original Bongaarts model included the residual factors that might be decomposed into the fertility-inhibiting or promoting effects of infant-childhood mortality (Fr), sex preference (Fg), and involuntary family limitation and competing preferences (Fr). However, it has been agreed that there are no

Figure 3.4 Relationship between TFR and DFS in Korea, 1985-2001



reasonable ways of measuring these individual factors. The linkage between DFS and the three residual factors will be discussed very briefly.

(1) Infant-childhood mortality (Fr)

The improvement in infant-childhood mortality has been welcomed in developing countries. In Korea, the infant mortality rate is at below 10 per thousand, despite a moderate rise in recent years. Such an infant mortality rate is not high enough to influence the fertility rate through insurance effects or replacement effects. The death rate for children aged 1-4 is approximately one per thousand. This rate is quite low even when compared with those in Europe and North America. In Korea, the expectancy of life at birth has increased dramatically since the 1970s, currently reaching 71.7 years for males, 79.2 years for females, and 75.6 years for both sexes (KNSO, 2003a). Like in European and North American nations, only about 2-3 percent of newborns in Korea fail to reach adulthood. Such a low child mortality rate will not affect the future movement of current fertility in the first half of the twenty-first century.

(2) Sex preference (Fg)

In 1975, the Korean government used the slogan "beyond family planning" in order to ease strong son preference among Korean men and women. Many demographers, opinion leaders, and policy makers believed that the problem of sex preference would be an insurmountable obstacle to a further decline in fertility during the first transition in the late 1970s. Sex preference still remains a serious social problem in Korea, China, and other Asian nations with Confucian traditions. However, with the spread of feminist social movements in recent years, young Asian couples have begun to accept the idea that they should not discriminate against daughters in their reproductive behavior.

In Korea and other East Asian countries, however, it does not appear that son preference will be completely anachronistic in the near future. The distortion of natural SRB due to both son preference and sex-selective abortion has developed into one of the most serious social problems. However, it is also an undeniable fact that sex-selective abortion practices, together with a significant DFS reduction, is a critical factor in the decline in fertility below the replacement level. As was indicated earlier, as Korean couples reduce their DFS or the demand for children, they may practice sex-selective abortion at the first birth order, not to mention the second or third birth order. This will further suppress the period TFRs and accelerate them to 1.0 births per woman, which is the lowest-low fertility level in the world.

(3) Involuntary factors and other competing preferences (Fi)

With the onset of the second transition in 1985, age at giving first birth as well as the proportion of single women has been on a steady increase. It implies that there will be an ageing of fertility as well as the earlier stoppage of childbearing. The divorce rate is not an exception. These trends will reduce the likelihood that individual couples will achieve their DFS in the short period of their marital life. Informal living arrangements, like premarital contractual marriages, may gain popularity among young couples. But these are not a social institution that substitutes the conventional form of the marital institution. Particularly these days, a large number of individual men and women decide to remain single and defer marriage for the rest of their life. For these reasons, the

replacement-level DFS may not guarantee the likelihood that the TFR will rebound above replacement level.

V. Summary and Conclusion

Over the last half century, the Korean population has undergone a dramatic transition from the rate of natural fertility, i.e., 6.0 births per woman, to a level far below replacement, 2.1 births per woman. In the course of the second transition, TFRs dropped further to 1.70 in 1985, 1.57 in 1990, 1.64 in 1995, and 1.47 in 2000. According to recent KNSO (2003a) estimates, the downward movement is more dramatic: 1.30 in 2001 and 1.17 in 2002. Clearly, Korean fertility is becoming more similar to that of Southern Europe, Spain, Italy, and Greece, and lower than that of neighboring countries, Japan and China.

This chapter strongly suggests in-depth studies of changes in age at first marriage and fertility timing at different birth orders as well as changes in the DFS. Since the onset of the second transition in 1983, there have been no significant changes in the DFS and the proportion of men and women wishing to remain single in their lifetime. However, the age at first marriage has steadily risen mainly due to the expansion of higher education and job opportunities available to men and women in their early twenties. In this chapter, it has been clearly confirmed that the increasing trends in the age at first marriage will be more likely to continue until the first half of the twenty-first century.

A comparison of age-specific marital fertility rates with age-specific fertility rates in the first and second transitions indicates that there have been significant changes in women's behavior on marriage and childbearing: delays in marriage and the postponement of giving birth. Clearly, these delays in marriage and childbearing will contribute more significantly to the suppression of period fertility than the suppression of cohort fertility.

It is believed that the forty-year-long history of passage from the first transition in 1960-1985 to the second one from 1985 until the present represents an anecdotal episode, illustrating one of the most flexible adaptations in human behavior in response to a host of exigencies under different

socioeconomic circumstances. Currently, the reproductive pattern of Korean women is rapidly taking after the reproductive pattern of those in Europe and North America: Fertility rates have moved up and down at a sub-replacement level in the course of the second transition over the 15 years between 1985 and 2000. Demographers and policy makers will have to pay full attention to this phenomenon as needed to forecast the socioeconomic future of the Korean population. The DFS will remain as one of the critical variables pertaining to the future of reproductive behavior among Korean couples, particularly in situations where sex preference continues to be non-residual.

In Korea, the DFS has changed little but stayed at around 2.0 births per woman in the second transition over the past 15 years between 1985 and 2000. Even in countries with a DFS of two births, fertility will continue to remain at far below replacement if the fertility-suppressing effects of rising childbearing ages surpass the fertility-promoting effects of unwanted fertility. Fortunately, leaders in the field of welfare and labor in the Korean government are preparing an innovative population policy under the new leadership of President Roh Moo-Hyun. If they are successful in providing the policy instruments needed to slow down the rise in marriage and childbearing ages, the fertility rate will increase from the currently very low, far-below-replacement fertility observed since the beginning of the second transition in 1983. If they are able to set up a set of child-friendly social policy instruments in the area of female employment, child nursing programs, and tax collection laws, there might be no further increases in age at marriage and childbearing ages. These policies will help current fertility recuperate to the DFS, lessening the adverse impacts of the weakened bonds of the nuclear family, and the shrinkage of the working-age population as well as the rapid ageing of the Korean population.

MORTALITY

Tai-Hun Kim

I. Introduction

The attainment of longevity and the forestalling of death have always been among mankind's primary goals. The issues related to health and survival have moved from being a private to a public concern (Hansluwka et al., 1981: 170). Therefore, the Constitution of the World Health Organization specifically states that "Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures" (UN, 1973: 107).

The overall mortality level and the age-sex specific mortality pattern play an important role in determining population growth and age-sex structure trends; they also affect the level of fertility and population movement. However, now that mortality has been reduced to moderate levels in most developing regions of the world, the level of fertility, or conversely, of fertility control will increasingly become the decisive factor in population growth (UN, 1973: 107). Moreover, because of the perception of overpopulation and fears about further population growth, given limited natural resources as well as the stagnation of per capita income, population policies in many countries have emphasized fertility control

rather than the improvement of health and mortality.

High population growth in many developing countries is caused by relatively low mortality and continuing high fertility. Under these circumstances, it is hard to deny that fertility control is crucial for curbing very rapid population growth. Nonetheless, because the health status of the population has an obvious bearing on mortality, its importance as a variable affecting the quality of the population has also been recognized (UN, 1973: 107). Therefore, while fertility control is important in curbing population size, mortality (or health) control is required for the improvement of population quality.

This chapter analyzes the relationship between mortality and socioeconomic development and estimates a series of demographic indices indicating the effects of social development on people's health and quality of life. More specifically, this chapter investigates patterns of mortality and its changes to enhance our understanding of population change. Then it examines mortality differentials by the demographic and socioeconomic characteristics of the population. Finally, it traces the characteristics of healthy life based on an analysis of the causes of death.

The main sources of data for this study are as follows:

(1) Population census data since 1960: The census population has been enumerated based on the *de jure* principle since 1960 and there have been variations in the under or over enumeration rate among censuses. This causes problems in using the census population by age and sex directly for the calculation of mortality indices. Thus, the census population is used only for selected topics in this study.

(2) Vital statistics since 1970: The completeness of the death registration data has been estimated since 1970 (T.H. Kim, 1990). However, it was not until 1990 that the completeness of the death registration data was estimated to be 98 percent or higher (K.A. Park, 1995). Vital statistics since 1990 are used directly for the calculation of death rates in this study.

(3) Projected population based on 1995 and 2000 censuses: The estimated populations for the period 1960-1995 were included in the report of the 1995 population projection (KNSO, 1996). The 2000 population projection covers 55

years of population estimation and projections for the period 1996-2000 (KNSO, 2001a). In this study, the estimated populations from 1960 to 2000 are used as a base population for the calculation of mortality indices by year.

(4) Cause of death statistics since 1980: Death registration includes the items on causes of death. The changing pattern of cause of death in the 1980s is analyzed based on these data. In the early 1990s, the proportion of registered deaths with a physician's diagnosis on the cause of death became more than 50 percent. These data are used for the calculation of death rates by cause of death without any adjustment.

Census data since 1960, vital statistics since 1970, and cause of death statistics since 1980 are utilized in estimating the crude death rate (CDR) and the mortality changes by age and sex. In the analysis of mortality differentials, two demographic variables (sex and age) and two socio-demographic variables (educational level and marital status) are included. Life tables and other official statistics are also used in this study for the explanation of the changes in mortality trends and their characteristics.

The current study refers to numerous studies on mortality including T.H. Kwon (1986), T.H. Kim (1990), T.H. Kwon and T.H. Kim (1990). The details of the methods used in the process of estimating indices and analyzing data are given in the relevant sections.

II. Mortality Trends and Patterns

1. Mortality Transition

Historically, mortality declines in developed areas have resulted from economic growth leading to improvements in living standards, while modern medical technologies have been largely responsible for the mortality reductions in developing countries.

Omran (1971 and 1977: 10) grouped mortality changes into three models of epidemiological transition: The Classic or Western Model, the Accelerated Model, and the Delayed Model. The Classic or Western Model details the gradual

fall in mortality of most Western societies over the past 200 years. This decline originated from the improvement in living standards rather than medical measures. The Accelerated Model describes mortality transitions that started late but occurred at a faster rate than the mortality transition of the Classic Model. The decline resulted from the medical revolution as well as from social, economic, and environmental improvements. The Delayed Model applies to developing countries whose death rates have fallen rapidly since World War II owing to modern medical technology and preventive mass medicine but have not yet reached the low levels found in developed countries.

Pathak and Murty (1983: 259-260) explained the three phases of the mortality transition focusing on the factors of mortality decline. Mortality may decline as a result of improved health conditions and imported medical technology in the first phase. The second phase involves mortality decline brought on improvements in health conditions and the economic, nutritional status of people. In the third phase, mortality may continue to drop to the lowest levels through an overall improvement in health, socioeconomic development and the expansion and availability of modern medical facilities.

The above models of mortality transition are summarized in Table 4.1. As shown in this table, social, economic and environmental improvements brought about the first mortality decline even before the recognition of the germ theory of disease causation and the development of modern medical technology. Later on, advancements in medical science pushed mortality transition further, especially in more developed countries. However, the late but fast decline of mortality in most developing countries was initiated mainly by public health policies and/or the application of western medical technology. It then continued with socioeconomic development.

In Korea, mortality decline began around 1900 and has continued steadily: expectation of life at birth for both sexes rose from about 23 years between 1906-1910 to about 52 years between 1955-1960 (Ishi, 1972; Koh and Kim, 1964). Since then, the mortality decline has accelerated and expectation of life at birth for both sexes reached over 70 years in the late 1980s (KNSO, 1999: 54). This reduction of mortality was brought about mainly through the prevention of infectious and contagious diseases in the early period of the

Table 4.1 Typology of the Mortality Transition

	Types of Transition			
	I	II	III	IV
Area	W. Europe, N. America, Australia	E. & S. Europe, Japan	"Fast Declining" Developing Countries	Other Developing Countries
Major Determinants of Mortality Decline	Improved Living Standards	Socioeconomic Development First & Then Improved Public Health	Improved Public Health First & Then Socioeconomic Development	Modern Medical Technology & Its Widespread Dissemination
Beginning (30-50 years)	Late 18th to Early 19th Century	19th Century	Late 19th to Early 20th Century	Early 20th Century
Acceleration (50-70 years)	1920s to Early 1950s	1930s-1950s	After 1950	After 1950
Finish (70 years)	1950s	1950s-1960s	After 1970	In Progress

Note: The figures in parenthesis are the life expectancies at birth.

Source: T.H. Kim (1990: 143, Table 5.1).

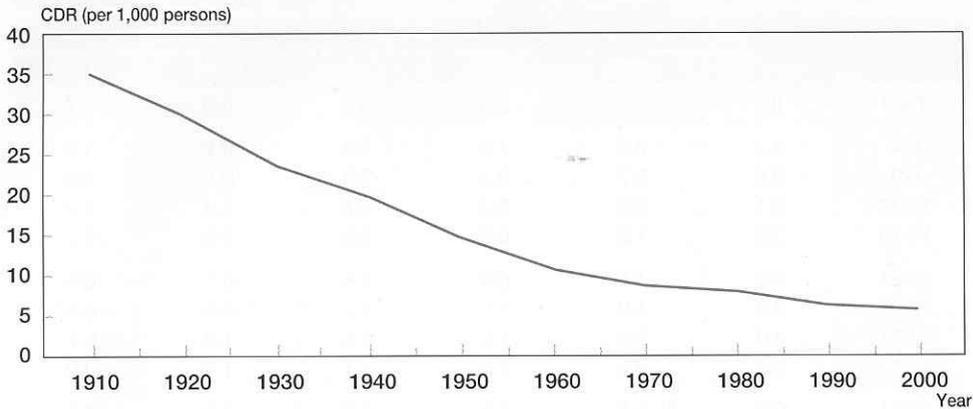
transition. Since around 1960, a more rapid decline resulted from rising living standards associated with socioeconomic development. Thus, the population in Korea can be viewed as belonging to Type III in the typology presented in Table 4.1.

2. Trends in the Crude Death Rate

The Korean mortality transition began around 1900. As shown in Figure 4.1, the crude death rate (CDR) from 1960-1965 was 10.5 per 1,000 persons, which was less than one third of the 33.7 in 1910-1915. When the highest birth rates after the baby boom decreased in the 1970s and 1980s, the CDR was lower than 10 per 1,000 persons. Since then, CDRs have continued to decline slowly and have reached 5.8 in 1990, and have kept falling after that.

The CDR is influenced by the sex and age distribution of the population. As the proportion of the population aged under 5 with a relatively high mortality rate gets smaller under conditions of low fertility, the CDR may decline. However,

Figure 4.1 Crude Death Rate Trends, 1910-2000



Source: For 1910-1965: Kong et al. (1983: 62); After 1970: KNSO(2001b: 28; 2003b).

the growth of the elderly population with a high rate of mortality offsets the effect of the shrinking number of infant and young children on overall mortality. As a result, the CDR may be stable or become even higher.

3. Age-Sex Specific Pattern of Mortality

1) Age-Specific Death Rate by Sex

Age-specific death rates (ASDRs) are estimated based on the death registration data are shown in Table 4.2. All of the ASDRs for both sexes are declining greatly. For 30 years since 1970 the CDRs declined by 37% (9.2-5.8/9.2) for men and 31% for women. The death rates for those in their 20s declined faster than the rate for those 30 or above. In terms of sex, the decline was faster for women than for men. However, the difference between men and women becomes smaller as age advances. The reduction rates of mortality for those aged 70-74 years are almost identical between men and women.

The extent of CDR reduction was smaller among women than among men, even though ASDR declined more rapidly for women than for men. This is due to the rapid ageing of the female population given the low level of mortality. In addition, the mortality patterns are different according to sex: the mortality for

Table 4.2 Age-Specific Death Rates by Sex, 1970-2000

(Unit: per 1,000 persons)

	Men			Women		
	1970	1990	2000	1970	1990	2000
Total	9.2	6.6	5.8	6.8	5.0	4.7
0-4	4.7	3.7	1.3	4.5	3.2	1.2
5-9	2.6	0.7	0.3	2.3	0.5	0.2
10-14	2.1	0.6	0.2	1.7	0.4	0.2
15-19	3.5	1.2	0.6	2.5	0.5	0.3
20-24	4.2	1.5	0.9	3.5	0.7	0.4
25-29	3.8	1.9	1.1	3.7	0.8	0.5
30-34	4.0	2.5	1.4	3.3	1.0	0.7
35-39	5.5	3.7	2.2	4.1	1.4	0.9
40-44	9.1	5.4	3.6	5.3	2.0	1.3
45-49	14.9	9.0	5.5	7.0	3.4	1.8
50-54	22.4	12.3	7.9	10.0	4.7	2.7
55-59	33.1	17.1	12.7	14.2	6.9	4.5
60-64	47.5	26.7	18.2	20.4	11.1	7.0
65-69	72.9	40.8	26.3	31.9	18.5	12.0
70-74	95.5	64.4	43.7	49.1	33.0	23.8
75-79	225.2 ¹⁾	97.0	74.6	179.2 ¹⁾	55.9	44.0
80+	-	187.0	152.1	-	137.1	121.2
IMR²⁾	40.8	14.3	6.1	39.9	13.0	5.9

Notes: 1) For 75 years of age or over.

2) The data for 1970, 1990 and 2000 were estimated in 1971, 1989 and 1999, respectively.

Source: KNSO (2001b, 2001e).

middle-aged adults is much higher for men than for women (T.H. Kim, 1990). However, the sex differentials of mortality become narrow and the mortality pattern of men approaches that of women (Figure 4.2).

The infant mortality rate (IMR) is considered a sensitive indicator of the overall health conditions of a community or a country (UN, 1982: 123; Rutstein, 1983: 7). However, data on infant mortality in Korea was not reliable until the 1970s. I.H. Kim and B.H. Choi (1988) estimated the infant mortality rates by applying monthly incidences of infant death in Korea to the infant death distribution by day and month in developed countries. N.I. Kim (1976) and T.H. Kim (1990) estimated the infant and child mortality rates indirectly using the data from the World Fertility Survey. Despite the improved accuracy of death registration data in recent years, the data for infants are still not suitable for the

direct estimation of infant mortality rates. The Ministry of Health and Welfare conducted Infant Mortality Surveys in 1993 and 1996. The KNSO (2001b: 3) estimated the infant mortality rates for alternate years from 1971 until 1999 using these survey data and constructed official life tables for Korea. According to the estimates of the KNSO, the infant mortality rates in 1999 were 6.1 for men and 5.9 for women. These rates belong to the lowest group in the world (Table 4.2).

2) Life Expectancy by Sex

Differences in the base data and estimation methods often make it difficult to directly compare life expectancies by age group. This is particularly true for the life tables constructed based on the data prior to the 1960s. Thus, the current study decided to utilize selected estimates for the 1950s and 1960s. For the years after 1970, it relies on the life tables provided by the KNSO (1999, 2001b). Table 4.3 presents life expectancy at birth for men and women between

Table 4.3 Life Expectancy at Birth for Men and Women, 1955-1999

(Unit: per 1,000 persons)

Year	Men	Women	Difference (M-W)
1955-1960	51.10	53.70	2.60
1960-1965	52.70	57.70	5.00
1966	59.70	64.10	5.60
1971	58.99	66.07	7.08
1973	59.61	67.03	7.42
1975	60.19	67.91	7.72
1977	60.75	68.74	7.99
1979	61.28	69.51	8.23
1981	62.28	70.54	8.26
1983	63.21	71.47	8.26
1985	64.45	72.82	8.37
1987	65.78	74.04	8.26
1989	66.84	75.08	8.24
1991	67.74	75.92	8.18
1993	68.76	76.80	8.04
1995	69.57	77.41	7.84
1997	70.56	78.12	7.56
1999	71.71	79.22	7.51

Source: For 1955-1960: Koh and Kim (1964); For 1960-1965: D.W. Lee (1973); For 1966: EPB (1971); and after 1971: KNSO (1999, 2001b).

1955 and 1999.

The life expectancy at birth in Korea was only 23 years for men and 24 years for women at the beginning of the 20th century (Ishi, 1972). For the period 1955-1960, life expectancy at birth was estimated to be 51 years for men and 54 years for women. The average life expectancy at birth for both sexes reached 70 years in 1989 and has increased continuously since then. Between 1971 and 1985, the increase in life expectancy was greater for women than for men (6.75 years vs. 5.46 years). However, since 1985, life expectancy has increased more rapidly among men than among women (7.26 years vs. 6.40 years). As a result, the difference in life expectancy between men and women has been decreasing over time.

4. Korean Mortality Patterns and Model Life Tables

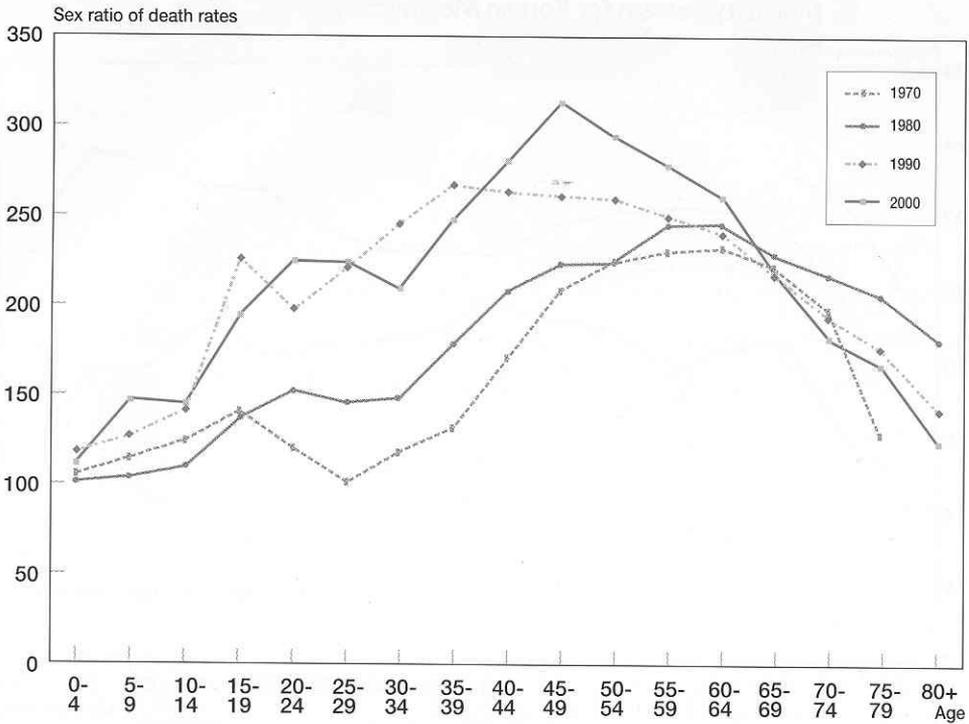
1) Mortality Patterns by Sex and Age

In most countries, mortality levels for women are lower than those for men across all age groups (UN, 1973: 7). However, the mortality pattern by sex in Korea somewhat deviates from such a general pattern. According to a study by T.H. Kwon and T.H. Kim (1990) on mortality in the early 1970s, the mortality rates for women were higher than those for men at two age groups: age 5-14 and age 20-34.

Figure 4.2 presents the sex ratios of the death rates for men relative to the death rates for women at given ages in the period 1970-2000. As shown in this figure, the sex ratios of the death rate in 1970 were low at ages 5-9 and ages 25-29. This is consistent with the findings from T.H. Kwon and T.H. Kim (1990). The low sex ratio of death rates at ages 5-9 is widely found in societies with a tradition of strong son preference. And the low sex ratios of death rates in the 20s results from high maternity mortality in societies with high fertility and poor medical services.

The low sex ratios at age 5-9 and age 25-29 found in 1970 disappear over time with the decline in fertility and improvements in quality of life. In Figure 4.2, the low sex ratio at these two particular age groups has not been observed

Figure 4.2 Sex Ratio of Death Rates, 1970-2000



Notes: 1) Sex ratio of death rates=(male ASDR/female ASDR)x100.
 2) 75-79 in 1970: 75 years of age or over.

Source: KNSO (2001f).

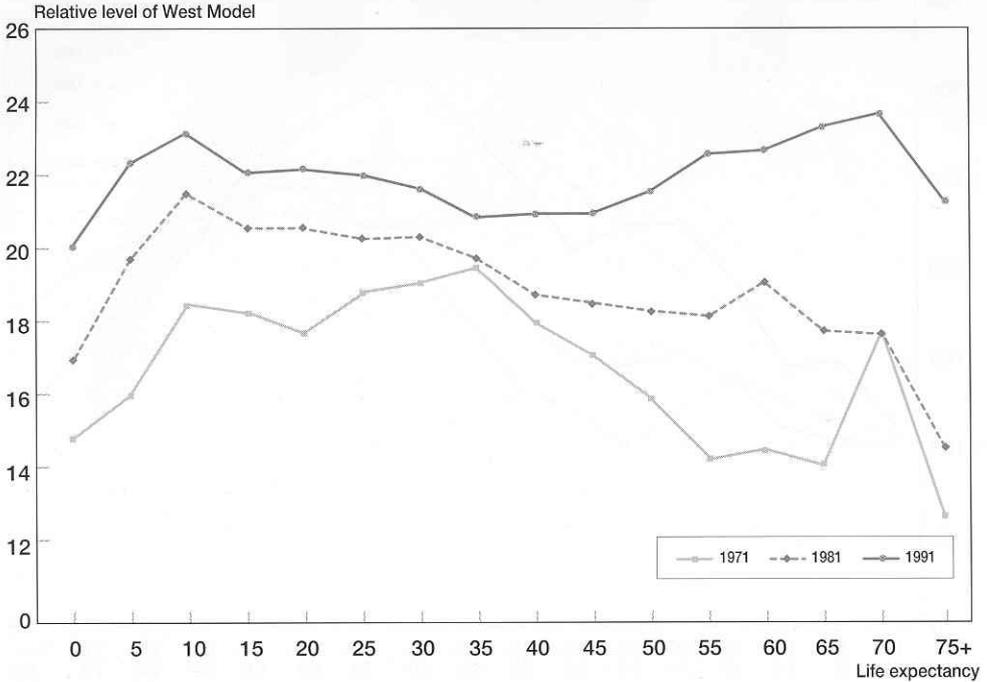
since 1980. In the meantime, the sex ratio of the death rates of those in their 40s and 50s has grown, and reached around 300 in 2000: the death rates for men in their 40s and 50s are three times higher than those for women of corresponding ages.

2) Mortality Patterns and Model Life Tables

It is widely known that mortality patterns in Korea are different from general mortality patterns found in most countries of the world. High death rates for men aged 40 or higher in Korea distinguish the Korean life table from the West Model of Coale and Demeny (1983) which is generally regarded as one world standard. The UN (1982) named such kind of mortality patterns "the Far Eastern pattern."

Figure 4.3 summarizes the relative levels of the West Model life tables

Figure 4.3 Comparison of the West Model of Coale and Demeny with the Mortality Pattern for Korean Men, 1971-1991



Note: Level for 75+ = T_{75}/T_{80} .

Source: KNSO (1999).

compared with the death rates for Korean men by 5 year age groups. The relative level of the West Model life tables in 1971 declined rapidly after 35-39 years of age and reached 14.2 for those in their 50s. This pattern changed when the overall level of mortality declined afterwards. In 1991, the relative level for those in their 50s or over became higher and matched the levels for younger age groups. Although Korean mortality belonged to the Far Eastern pattern by the late 1970s, the mortality pattern for Korean men has approached the general pattern of developed societies as mortality has declined further.

III. Mortality Differentials

Mortality differentials by socioeconomic characteristics are important in explaining the current mortality status and predicting its future. Furthermore, in

societies with low mortality rates, an additional decrease in mortality can be reached by reducing the mortality differentials among various social groups. In doing so, it is a prerequisite to identify social groups with a high death rate and provide the appropriate measures to improve their condition (Hansluwka, 1968).

Numerous studies on mortality conducted in a specific region or internationally have reported noticeable mortality differentials between sub-populations with a different socioeconomic status: Death rates are relatively high for the sub-population with a low level of education or occupational prestige. In terms of urban-rural differentials, death rates for those in rural areas are higher than for those in urban areas. In addition, death rates for single people are higher than the rate for married people (Benjamin, 1965; Antonovsky, 1967; Ruzicka, 1982; Kobayashi, 1984; UN, 1984). Such mortality differentials are also found in Korea (Yoon and Kim, 1989).

Even though the overall pattern of mortality differentials by socioeconomic characteristics had not changed between 1970 and 2000, the extent of the mortality differentials has changed (T.H. Kim, 1990). The decrease of inequality between groups with different characteristics in the future is expected to accelerate the decrease in the mortality level. Mortality for a given population is influenced by the changes in its composition along with socioeconomic development. This is because national mortality is an aggregation of the mortality levels of sub-populations distinguished by socioeconomic characteristics. This study will evaluate the compositional effect of selected socioeconomic characteristics of the population education and marital status on mortality declines at the national level.

1. Data and Methods of Analysis

1) Data

Vital statistics and the census population are used as the basic data for the study of mortality differentials. Death registration data has become available to public users since 1970. These can be an important source of data since more

than 75 percent of deaths have been registered on time since 1970 (Preston, 1984). Nonetheless, in using the death registration data for the analysis of socioeconomic differentials in mortality, caution is required regarding the extent of the completeness of registration and the differences in the definitions of socioeconomic variables in death registration data and the population census.

According to a study by Kong et al. (1983) on the quality of the 1980 death registration data, the completeness of the data by educational attainment and marital status was over 79 percent. In this study, to maintain the quality of data, those aged under 25 years, mostly single people and students, and those aged 65 years or over are excluded from the analysis.

2) Mortality Level by Population Characteristics

In the situation where an assessment of the extent of death registration can only be done by age and sex but no supplemental information on the socioeconomic characteristics of the population is available, it is not desirable to estimate the death rates for various social groups (Preston, 1980: 179-202; Bennett and Horiuchi, 1981, 1984). Nonetheless, if the under-registration rates are assumed to be similar among the sub-populations divided by sex and age, the ratios of the registered deaths and census results by such characteristics can be compared with caution.

Variations in annual data may be reduced by widening the observation period. The current study links the incidences of death between 1970 and 1972 with the estimated population based on the 1970 census. This approach is also applied to the analysis of 1980 mortality by linking the incidences of death between 1979 and 1981 with the estimated population based on the 1980 census. For the analysis of 1990 and 2000 mortality, death rates and mortality ratios are estimated from the single year death registration data and the estimated population. In addition, this study used 10 year age groups to reduce fluctuations by age. Since the absolute levels of observed death rates still include errors, mortality differentials are examined in terms of mortality ratios by population characteristics.

In summary, equation (1) is for the calculation of death rates by age of the sub-population i in period t . Equation (2) is for the calculation of average death

rates by age of the total population in period t.

$$ASDR_{ix}^t = D_{ix}^t / P_{ix}^t \dots\dots\dots(1)$$

$$ASDR_{.x}^t = D_{.x}^t / P_{.x}^t \dots\dots\dots(2)$$

Then, for the analysis of mortality differentials by population characteristics, the mortality ratio of the age-specific death rate of a given sub-population *i* to the national average is calculated by applying equation (3).

$$MR_{ix}^t = ASDR_{ix}^t / ASDR_{.x}^t \dots\dots\dots(3)$$

3) Mortality Changes Due to Changes in Population Composition

Mortality ratios and population proportions by educational attainment and marital status help to identify the extent of mortality changes resulting from the changes in population composition between 1980 and 2000.

If the proportion of the sub-population *i* in a given period (for example, since 1980) is constant and death rate of age group *j* in 2000, $R_{j(2000)}^{2000}$, is 1.0, the relative mortality ratio of age group *j* in 2000, $R_{j(80)}^{2000}$, can be estimated from equation (4).

$$R_{j(80)}^{2000} = \sum_i (W_{ij}^{80} \cdot r_{ij}^{2000}) \dots\dots\dots(4)$$

Where W_{ij}^{80} is the population proportion of characteristic *i* and age group *j* in 1980, and r_{ij}^{2000} is the mortality ratio of characteristic *i* and age group *j* in 2000.

Since $R_{j(2000)}^{2000} = 1.0$, the change (%) of mortality level P_j of age group *j* resulting from the change of the population proportion by characteristics from 1980 to 2000 becomes

$$P_j = (1.0 / R_{j(80)}^{2000} - 1) \cdot 100 \dots\dots\dots(5)$$

Therefore, the value of P_j tells how much the change of population proportion by characteristics affects the mortality level and how different the effects of age and sex are.

2. Mortality Differentials by Educational Attainment

According to Marthis (1969), and Kitagawa and Hauser (1973), mortality risk is relatively high for those with a low level of education. They also found that the death rate is inversely related to the level of education, and this appears more clearly for men than for women.

As shown in Table 4.4, mortality among adults (age 25-64 years) in Korea is negatively associated with their educational level. The inverse relationship between mortality and education shows strongly in all age groups except for those aged 55-64 years. Such a pattern, except for the age group 25-34 years, appears to be stronger for men than for women from 1970 to 2000.

Mortality ratios by educational level for men aged 25-34 years in 2000 decreased as the educational level rose. More specifically, in 2000, the mortality ratio of non-educated men aged 25-34 was 8.16, while the mortality ratio of men with a college or higher level of education in the corresponding age was 0.48. This indicates that the death risk for non-educated men is 17 times higher than that of college graduates. However, the differences in death rate by educational level decrease rapidly as age advances, and becomes approximately only twice high in the age group 55-64 years.¹⁾ Among women aged 25-34 years in 2000, death rate for the non-educated is 28 times higher than that of college graduates. As in the case of men, such differences in death rates by education get smaller as age advances.

There has been a great amount of changes in the mortality differentials by education over the last 30 years. The relative difference in death rates between

1) This seems related to the tendency of old people to report their educational level higher than the actual level. Such a tendency has been weakening over time.

Table 4.4 Mortality Ratios by Educational Level, Age and Sex, 1970-2000

Age/ Education	Men				Women			
	1970 ¹⁾	1980 ²⁾	1990	2000	1970 ¹⁾	1980 ²⁾	1990	2000
Age 25-34	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Never	3.41	8.51	6.48	8.16	2.20	8.55	14.77	15.58
Elementary	1.58	2.30	4.42	7.15	1.12	1.49	3.03	8.54
Middle or High	0.58	0.63	0.96	1.35	0.44	0.46	0.74	1.11
College or higher	0.35	0.32	0.40	0.48	0.29	0.38	0.50	0.57
Age 35-44	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Never	1.53	3.35	4.69	4.40	1.15	2.41	4.06	4.59
Elementary	1.38	1.77	2.81	4.64	1.09	1.07	1.64	2.86
Middle or High	0.60	0.58	0.78	1.07	0.50	0.51	0.67	0.89
College or higher	0.36	0.30	0.33	0.36	0.37	0.33	0.44	0.45
Age 45-54	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Never	0.96	1.47	1.77	2.41	0.95	1.17	1.28	2.07
Elementary	1.32	1.34	1.67	2.17	1.19	1.02	1.19	1.39
Middle or High	0.65	0.65	0.77	0.89	0.66	0.62	0.20	0.79
College or higer	0.41	0.39	0.43	0.43	0.52	0.55	0.49	0.54
Age 55-64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Never	0.84	0.92	1.08	1.32	0.89	0.91	0.95	1.09
Elementary	1.54	1.29	1.28	1.37	1.70	1.27	1.15	1.13
Middle or High	0.69	0.74	0.81	0.90	1.02	0.88	0.72	0.77
College or higher	0.45	0.50	0.57	0.57	0.46	0.78	0.64	0.52

Notes: 1) Average for 1970-1972.

2) Average for 1979-1981.

Source: KNSO (2002b); T.H. Kim (1990: 65).

those of various levels of educational attainment has increased over time, particularly for younger groups. For example, compared to the death rate of college educated men aged 35-44 years, the death rate of non-educated men of those ages was about 4 times higher in 1970, but 20 times higher in 2000. For women aged 35-44 years, the corresponding ratio increased from three times to 10 times between 1970-2000. It shows that, while mortality differentials by education have narrowed down as age advances, their magnitude has increased over time. This was found for both men and women.

Educational level is closely related to the level of quality of life. Thus, the mortality difference according to educational level is considered to result from the uneven distribution of medical care (Behm, 1980: 154). Some economists

regard education as the ability to maintain personal health. Education is understood to play a direct/indirect role in health: It helps people receive more and better medical care, maintain healthy habits, and choose low risk occupations (Feldstein, 1979).

Because education lowers the mortality level directly or indirectly, the death risk is lower for the more educated group than for the less educated group. The mortality gap gradually increases when the proportion of the less educated population to the total becomes smaller. The proportion of non-educated men among the total is lower than that of women. Thus, mortality differentials by educational level are much larger for men.

3. Mortality Differentials by Marital Status

It has often been noted that the death rate is lower among those married than among those unmarried (single, widowed, divorced, or separated) (Gove, 1973; Kobayashi, 1984). The difference in the death rate between the married and the unmarried is much larger for men than for women. It leads to the conclusion that men gain more benefit from marriage than women do. Also, it is reported that the "shock" (which shortens life) for those who experience the divorce or death of a spouse is much greater for men than for women (Gove, 1973: 59-60). In addition, Spiegelman argued that the low death rate for married men (vs. unmarried men) is due to the selection process in which men in poor health have difficulty finding spouses. Moreover, it has also been argued that married men are more likely than unmarried men to receive better care, particularly when they are ill (Fox et al., 1982: 76).

Mortality differentials by marital status in Korea show the advantage of being married. As shown in Table 4.5, the mortality level is definitely lower among those married than among those unmarried (single, widowed, divorced or separated). This is found for both sexes across all age groups.

Between 1970 and 2000, the mortality level among those who were single was the highest at age 35 or over for both sexes (with the exception of men aged 35-44 years in 2000). The extent to which the death rate for single people is different from those currently married, widowed, or separated has been much

Table 4.5 Mortality Ratios by Marital Status, Age and Sex, 1970-2000

Age/ Marital Status	Men				Women			
	1970 ¹⁾	1980 ²⁾	1990	2000	1970 ¹⁾	1980 ²⁾	1990	2000
Age 25-34	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Single	1.89	1.77	1.48	1.28	6.27	4.37	2.45	1.38
Married	0.65	0.64	0.67	0.68	0.61	0.57	0.64	0.75
Others	5.56	7.28	7.00	5.69	2.76	5.11	7.92	6.28
Age 35-44	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Single	13.57	8.25	6.09	3.07	42.01	23.78	8.49	2.92
Married	0.82	0.83	0.77	0.70	0.74	0.71	0.73	0.81
Others	4.88	5.18	4.38	3.65	1.81	2.36	2.70	2.50
Age 45-54	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Single	17.07	10.7	7.22	4.10	47.06	33.85	15.47	3.70
Married	0.88	0.87	0.87	0.83	0.84	0.78	0.78	0.85
Others	3.67	3.74	3.25	2.62	1.20	1.41	1.67	1.59
Age 55-64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Single	15.94	9.4	7.79	3.46	37.35	30.49	19.27	5.28
Married	0.87	0.87	0.89	0.92	0.90	0.85	0.78	0.84
Others	2.32	2.57	2.39	1.85	1.02	1.09	1.23	1.28

Notes: 1) Average for 1970-1972.

2) Average for 1979-1981.

3) Others includes widowed, divorced or separated.

Source: KNSO (2002b); T.H. Kim (1990: 67).

greater among women than among men.

While there has been a rapid increase in age at marriage since 1925, almost all adults in Korea get married. Under the persistence of universal marriage, single people even after age 35 may feel great pressure for marriage. Some may have problems with their physical or mental health and might not easily find spouses. Thus, the death rate for single people is higher than the rate for those married.

Death rates for those widowed, divorced, or separated were much higher than for those married. Because of the loneliness and anxiety that they may feel as well as the health problems that they may have, their death rate is higher than that of married couples.

As shown in Table 4.5, the pattern of mortality differentials by marital status in Korea has changed over the last 30 years. The difference in mortality level

between those married and those single is becoming smaller in all age groups and for both sexes. For men in 1970, the death rates of single people were 2.9 times higher than the death rate of those married; for women in 1970, 10.3 times higher. However, in 2000, the ratio of the death rates of single people relative to the death rates of those married was 1.9 times for men and 1.8 times for women. The decrease in mortality differentials between those married and those single is mainly due to the rapid decline of mortality among single people. The decline of mortality among single people occurred at a faster rate for women than for men. This is related to the fact that the proportion of single women increased more rapidly than the proportion of single men.

Mortality ratios for the widowed, divorced and separated are the highest for the age group 25-34 years. These ratios decrease as age advances, and the proportions of the widowed, divorced and separated have become larger. Divorce and remarriage are less frequent for women than for men. And the proportion of women divorced or widowed is lower than that of men divorced or widowed. Thus, the mortality ratio of divorced or widowed women is lower than the corresponding ratio for men in general.

Over the last three decades, the mortality ratio of the widowed, divorced or separated increased and then decreased. The mortality ratio for men reached its peak in 1980 and has decreased ever since. For women, the mortality ratio increased (except for 55-64 year olds) until 1990 and decreased in 2000. This is due to the fast changes in marriage and family values since the 1980s.

Educational attainment affects occupation, income and personal health behaviour. As the educational level gets higher, the mortality level becomes lower. However, in a society where most people get married, those who are unable to marry for reasons of economic hardship or health-related problems would remain single. The proportion of those divorced or widowed would increase when more people have difficulty in adjusting to the marriage. Given that single people past the marriage-eligible age tend to have a low level of education, the mortality differentials by marital status are assumed to be associated with the differences in educational attainment. The current study estimated the standardized death rates by sex and marital status after controlling the effect of education.

Table 4.6 Mortality Ratios of Observed Death Rates and Standardized Death Rates by Sex and Marital status, 2000

Sex/ Marital Status	Ratio of Observed Death Rates ¹⁾	Ratio of Standardized Death Rates ²⁾
Men Aged 45-54	1.00	1.00
Single	4.10	3.31
Married	0.83	0.85
Widowed or Divorced ³⁾	2.62	2.38
Women Aged 45-54	1.00	1.00
Single	3.46	4.39
Married	0.92	0.86
Widowed or Divorced ³⁾	1.85	1.50

Notes: 1) Calculated from registration data directly.

2) Standardized marital status-specific crude death rates for those aged 45-54 based on the population composition by educational level and sex.

3) Also includes those separated.

Table 4.6 presents the mortality ratios of observed death rates and standardized death rates by sex and marital status: the effects of educational attainment on mortality level are controlled in the standardized rates. The standardized mortality ratio of single people would be lower than the observed mortality ratio if the educational level of single people was relatively low. On the other hand, if the mortality ratio from the standardized death rate is higher, it implies that their educational level was higher than that of those married.

As shown in Table 4.6, for single men, the standardized ratio is lower than the observed mortality ratio. As for women, the difference between the observed mortality ratio and the standardized mortality ratio varies according to marital status. For single women, the standardized mortality ratio is higher than the observed mortality ratio. However, for widowed, divorced or separated women, the standardized mortality ratio is lower than the observed mortality ratio.

Among women aged 45-54 years, the educational level of single women is higher than that of married women. The educational level of widowed, divorced or separated women tends to be lower than that of married women. However, even after the compositional effect of education is controlled, death rates for single, widowed, divorced or separated people are higher than the rates for those married by 2-4 times. Thus, along with educational level, marital status has been a significant factor concerning mortality in Korea.

4. Effects of Population Composition on Mortality

Mortality transition in a society progresses along with the changes in the composition of population characteristics as well as the improvement of living status in a broader context of social development. While the improvement in living status tends to decrease the mortality level in general, the changes in the composition of population characteristics may either increase or decrease the overall mortality level. Since mortality differs according to education and marital status and the population compositions by these two variables change over time, this section examines the effect of compositional changes of educational and marital status on mortality.

Table 4.7 shows the relative ratios of estimated death rates to observed death rates for a given age and sex after standardizing the educational level and marital status in 2000. Here, the estimate was obtained under the assumption that the population composition by selected characteristics in 2000 is identical to the population composition in 1980. Table 4.7 also shows the proportional changes in relative mortality ratios due to changing population composition since 1980.

The ratios for those aged 25-34 years after standardizing the educational composition are 2.5 times for men and 4.1 times for women. As age advances, these ratios decline and reach 1.2 times for men and 1.1 times for women. For men aged 25-34, 60.3 percent of the mortality decline is attributable to changes in their educational composition between 1980-2000; for women aged 25-34, 75.5 percent of mortality declines are explained by changes in their educational composition. The extent of mortality decline attributable to changes in educational composition diminishes as age advances. It is found for both sexes. The huge decline of these ratios at younger ages reflects the great improvement in education for younger age groups.

Unlike the case of educational composition, the ratios after standardizing marital status were less than 1.0 for most age groups, except for women aged 45-64 years. The effects of changes in educational composition and the effects of

Table 4.7 Relative Mortality Ratios and Proportional Changes in Relative Mortality Ratios Due to Changing Population Composition, 2000

Age	Educational Attainment ¹⁾				Marital Status ²⁾			
	Men		Women		Men		Women	
	R _j ³⁾	P _j ⁴⁾ (%)	R _j ³⁾	P _j ⁴⁾ (%)	R _j ³⁾	P _j ⁴⁾ (%)	R _j ³⁾	P _j ⁴⁾ (%)
25-34	2.521	-60.3	4.083	-75.5	0.879	13.8	0.910	9.9
35-44	2.203	-54.6	2.363	-57.7	0.781	28.0	0.952	5.0
45-54	1.550	-35.5	1.531	-34.7	0.897	11.5	1.019	-1.9
55-64	1.220	-18.0	1.082	-7.6	0.986	1.4	1.049	-4.7

Notes: 1) Four classifications: Never Attended, Elementary School, Middle or High School, and College or higher.

2) Three classifications: Single, Currently Married, and Others (Widowed, Divorced or Separated).

3) Relative mortality ratios by age in 2000 under the assumptions that population composition by age in 2000 is the same as that of 1980 and that the ASDRs in 2000 are set at 1.0.

4) Proportional changes (%) in the relative mortality ratio (1.0) of ASDRs in 2000 from the relative mortality ratio for age group j (R_j) due to changing population composition since 1980.

changes in marital status composition are offset to some extent. The relative ratios under 1.0 indicate that the changes in the marital status composition of the sub-population at a given age and sex led the overall mortality rate to increase. Such an effect of marital status composition is prominent for men aged 35-44 years. Given that the mortality rate is lower for those married than for those who are single, the increase of single people at younger ages may have contributed to the rise of mortality at that age. The effect of changes in the composition of marital status also diminishes as age advances.

IV. Mortality by Cause of Death

1. Trends and Patterns of the Causes of Death

It is well known that the specific causes of death as well as the overall pattern of causes of death change in the course of the transition from high to low mortality. The UN (1984: 43) concluded that the higher the mortality level in a population, the greater the proportion of deaths from diseases of the digestive system; as mortality declines, deaths caused by such diseases diminish, while cardiovascular diseases and neoplasms (cancer) account for most deaths.

Early in the 20th century, the leading causes of death in Korea were

Table 4.8 Proportion of Deaths by Cause, 1938-2000

Cause of Death ¹⁾	1938-1942 ²⁾	1966 ³⁾	1980-1981 ¹⁾	1990 ¹⁾	2000 ¹⁾
Life Expectancy ⁴⁾	42.6	55.2	66.2	70.8	75.6
All Causes	100.00	100.00	100.00	100.00	100.00
I	14.38	11.39	4.41	2.86	2.53
II	0.79	4.57	11.87	20.15	24.10
III	0.19	0.23	0.17	0.17	0.19
IV	0.53	2.50	1.00	2.50	4.82
V	0.05	1.03	0.74	0.56	2.63
VI	15.77 ⁵⁾	11.52 ⁵⁾	1.41	1.09	1.17
VII	0.99	3.91	28.35	29.86	23.91
VIII	16.80	15.06	5.02	3.98	6.58
IX	19.46 ⁶⁾	15.10 ⁶⁾	8.42	8.10	6.08
X	3.38	1.21	0.97	0.82	0.16
XI	0.75	0.37	0.13	0.05	0.87
XII	0.17	0.03	0.06	0.02	1.28
XIII	0.23	0.37	0.36	0.44	0.02
XIV	0.01	-	0.25	0.61	0.54
XV	0.51	0.01	0.05	0.06	0.38
XVI	23.96	29.21	26.62	13.25	12.93
XVII	2.03	3.49	10.16	15.44	11.79

Notes: 1) The 1979 Korean Standard Classification of Diseases (KSCD) was revised based on the 9th Revision of the ICD (EPB, 1979). The diseases of eyes and ears were reclassified to VI. Diseases of the nerve system and sense organs in the 1995 KSCD (KNSO, 1995).

2) Originally classified based on the 5th Revision of the ICD (Ishi, 1972: 153) and reclassified based on the 1979 KSCD.

3) Classified based on the 1979 KSCD.

4) The corresponding periods and sources of life expectancy at birth are: 42.6 years (1936-1940), Ishi (1972); 55.2 years (1960-1965), D.W. Lee (1973); 66.2 years (1981), 70.8 years (1989) and 75.6 years (1999), KNSO (2001f).

5) Includes deaths due to "vascular lesions affecting the central nerve system" which was reclassified to Division VII in the 1995 KSCD.

6) Includes deaths due to Gastro-enteritis and colitis excluding diarrhea of the newborn, which was reclassified to Division I in the 1995 KSCD.

Source: For 1938-1942: E.H. Kwon (1968: 50); for 1966: EPB (1968: 84); for 1980-1981: EPB (1982b, 1983); and for 1990 and 2000: KNSO (1992, 2001f).

diseases related to the respiratory system, the digestive system and communicable diseases. These included smallpox, pneumonia and tuberculosis (S.B. Lee, 1980: 174-176). E.H. Kwon and T.R. Kim (1968) pointed out that infectious diseases such as cholera, smallpox and tuberculosis were the leading causes of death around 1920. When the causes of death in 1938-42 were classified according to the 7th revision of the International Classification of

Table 4.9 Ten Leading Causes of Death, 1966-2000

Rank	1966 ²⁾	1980-1981 ²⁾	1990 ³⁾	2000 ³⁾
1	Pneumonia	Malignant neoplasms	Malignant neoplasms	Malignant neoplasms
2	Tuberculosis ⁴⁾	Hypertensive diseases	Brain vein diseases	Brain vein diseases
3	Vascular lesions affecting the central nerve system	Cerebrovascular diseases	Heart diseases	Heart diseases
4	Malignant neoplasms	Accidents ⁴⁾	Traffic accidents	Traffic accidents
5	Gastritis, duodenitis, enteritis and colitis	Heart diseases	Hypertensive diseases	Chronic liver diseases and cirrhosis
6	Accidents ⁴⁾	Tuberculosis ⁴⁾	Chronic liver diseases and cirrhosis	Diabetes
7	Influenza	Chronic liver diseases and cirrhosis	Diabetes	Chronic bronchus diseases
8	Heart diseases	Bronchitis, emphysema and asthma	Respiratory system tuberculosis	Suicides
9	Measles	Pneumonia	Chronic bronchus diseases	Hypertensive diseases
10	Bronchitis	Suicide	Suicide	Pneumonia

Notes: 1) Based on the abbreviated list of 50 causes of death in the 7th Revision of the ICD.

2) Based on the list of 55 causes of death in the 9th Revision of the ICD.

3) Based on the list of 56 causes of death in the 1995 KSCD (KNSO, *Social Indicators in Korea, 2001*: 270-272).

4) Deaths per 100 thousand persons aged 5 years or over.

Source: For 1966: EPB (1968); for 1980-1981: EPB (1982b, 1983); and for 1990 and 2000: KNSO (2001f: 8).

Diseases (E.H. Kwon, 1968), the leading causes of death were those related to the digestive system (IX), the respiratory system (VIII), the nervous system (VI), and infectious and parasitic diseases (I) (Table 4.8).²⁾

In 1966, the leading causes of death remained the same as 1938-1942. However, there were some changes in the cause of death pattern between 1938-

2) The classification in Table 4.8 follows the 1979 Korean Standard Classification of Diseases and the 17 major classifications (EPB, 1979): I. Infectious and parasitic diseases; II. Neoplasms; III. Endocrine, nutritional and metabolic diseases and immunity disorders; IV. Diseases of blood and blood forming organs; V. Mental disorders; VI. Diseases of the nerve system and sense organs; VII. Diseases of the circulatory system; VIII. Diseases of the respiratory system; IX. Diseases of the digestive system; X. Diseases of the genito-urinary system; XI. Complications of pregnancy, childbirth and the puerperium; XII. Diseases of the skin and subcutaneous tissue; XIII. Diseases of the musculoskeletal system and connective tissue; XIV. Congenital anomalies; XV. Certain conditions originating in the perinatal period; XVI. Symptoms, signs and ill-defined conditions; XVII. Injury and poisoning.

1942 and 1966: deaths caused by these four major groups of diseases diminished, while deaths caused by neoplasms (II), diseases of the circulatory system (VII), and injury and poisoning (XVII) increased markedly.

After 1980, a great change in the pattern of causes of death took place. The three newly emerging major groups of diseases (II, VII and XVII) replaced the four major groups above. They explained 50 percent of total deaths between 1980-1981, and more than 60 percent of total deaths in 1990 and 2000.

The changes in cause of death are found in terms of the proportions of deaths caused by 10 leading causes. Table 4.9 shows the 10 leading causes of death between 1966 and 2000. It reveals that the leading causes of death in 1966 were pneumonia and tuberculosis. Of the ten major causes of death, six causes belong to diseases of the respiratory and digestive systems and infectious diseases. However, between 1980 and 1981, the five most important causes of

Table 4.10 Composition of Deaths by Cause, 1981-2000

Cause of Death ¹⁾	1981				1990				2000			
	35-54	55-64	65-74	75+	35-54	55-64	65-74	75+	35-54	55-64	65-74	75+
Men	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
I	5.91	4.71	2.74	1.22	4.31	3.64	3.01	1.94	3.47	2.73	2.77	3.04
II	16.16	16.90	10.36	3.63	24.35	34.34	25.58	10.98	24.86	38.04	36.59	20.42
VII	25.92	30.18	29.10	22.30	21.30	30.06	34.53	35.55	15.74	21.28	25.73	25.20
VIII	1.91	2.60	4.00	4.88	2.13	3.67	4.84	6.23	2.54	4.80	8.21	11.99
IX	14.34	10.59	6.68	4.24	18.57	12.24	6.88	4.49	16.05	9.87	5.48	3.84
XVI	18.30	26.81	42.45	60.64	0.59	0.77	15.27	33.43	3.65	1.84	4.70	21.59
XVII	13.23	4.99	2.32	1.12	23.51	9.93	5.29	3.25	25.28	11.93	6.51	3.72
Others	4.23	3.22	2.35	1.97	5.24	5.35	4.60	4.13	8.41	9.51	10.01	10.20
Women	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
I	4.86	2.52	1.47	1.11	3.25	1.81	1.50	1.27	2.57	2.01	1.93	1.94
II	22.00	17.22	8.83	2.83	33.69	31.79	19.14	6.47	39.32	36.36	26.45	10.72
VII	29.31	34.02	31.59	22.88	29.74	40.72	42.11	37.21	17.74	28.52	35.03	28.49
VIII	1.81	2.68	4.12	4.44	2.18	2.59	3.83	5.64	2.45	3.54	5.26	8.26
IX	8.75	7.64	5.08	3.96	7.72	6.43	4.44	3.59	6.24	5.23	4.06	3.01
XVI	19.42	28.00	43.90	61.98	0.51	0.75	17.32	38.80	2.24	1.50	5.45	31.16
XVII	8.26	3.92	2.33	0.96	15.75	8.48	4.82	2.52	20.55	9.63	5.54	2.90
Others	5.59	4.00	2.68	1.84	7.16	7.43	6.84	4.50	8.89	13.21	16.28	13.52

Note: 1) Based on the 1995 KSCD, and the diseases of eyes and ears were included in VI. Diseases of the nerve system and sense organs.

Source: For 1981: EPB (1982b); for 1990: KNSO (1992); and for 2000: KNSO (2001f).

death were diseases of the circulatory system, neoplasms and injury.

From 1990, the four most important causes of death were fixed on malignant neoplasms, brain vein diseases, heart diseases, and traffic accidents. Such changes in the pattern of causes of death indicate that the huge decline in mortality level since 1966 was mainly due to the reduction of mortality from diseases of the respiratory systems and infectious diseases such as pneumonia and tuberculosis.

2. Causes of Death by Age and Sex

Causes of death are different according to age and sex. During infancy, the leading causes are complications of pregnancy, child birth and the puerperium and congenital anomalies, but the proportion of deaths from injury and poisoning grows after infancy. After adolescent years, malignant neoplasms and brain vein diseases are the leading causes of death (KNSO, 2001f: 24-25). The leading causes of death are also different between men and women. For men aged 40-49 years, chronic liver diseases are the second leading cause. For women at these ages, it is the fourth. Table 4.10 shows the composition of death by cause for given age and sex, 1981-2000.

It should be noted that this table only covers deaths for those aged 35 or over. These age groups have high mortality rates and their causes of deaths are substantially different between men and women. The first leading cause of death in 1981 was diseases of the circulatory system (VII). This is true for both sexes and in all age groups. However, from 1990, the first leading cause was neoplasms (II) for younger age groups (35-64 years), and then diseases of the circulatory system (VII) became the first leading cause for older age groups. In 2000, the share of injury and poisoning (XVII) in cause of death was the greatest for men aged 35-54.

Diseases of the circulatory system were the first leading cause of death for all age groups in 1981. In 1990, neoplasms became the first leading cause for younger age groups as the overall mortality reached the level of mortality in developed countries. In 2000, for those aged 35-54, the first leading cause of death was injury and poisoning; For those aged 65-74, neoplasms became the

leading cause of death.

Although the general pattern of causes of death is similar for men and women, distinctive sex differentials by age and year are still found for causes of death. The sex differentials in the proportion of deaths caused by diseases of the digestive system are quite noticeable, particularly for those aged under 65 years. Such differentials continued until 2000. This is due to the persistence of a high rate of death caused by chronic liver disease for men, despite the reduction of deaths caused by diseases of the digestive system (Table 4.11).

The proportions of deaths caused by injury and poisoning for both sexes has increased rapidly. However, the proportion for men increased at a faster rate than for women. Injury and poisoning became the first leading cause of death in 2000 for men aged 35-54 years. The proportion of deaths caused by neoplasms (II) for both sexes increased with the decline in overall mortality. However, they

Table 4.11 Sex Ratios of Cause-Specific Death Rates by Selected Age Group, 2000

Age/ Causes of Death	Cause-Specific Death Rates ¹⁾		SR of Death Rates (Women: 100.0)	Relative SR (Av. SR=1.00)
	Men	Women		
Age 30-39 Total	179.0	77.2	231.8	1.00
1) Malignant neoplasms	25.3	23.8	106.3	0.46
2) Liver diseases and cirrhosis	16.4	2.1	780.9	3.37
3) Traffic accidents	32.7	8.2	398.8	1.72
4) Heart diseases	10.7	3.4	314.7	1.36
5) Brain vein diseases	7.8	3.8	205.2	0.88
Age 40-49 Total	441.0	148.7	296.6	1.00
1) Malignant neoplasms	98.2	57.1	171.9	0.58
2) Liver diseases and cirrhosis	68.4	7.8	876.9	2.95
3) Traffic accidents	43.9	11.1	395.5	1.33
4) Heart diseases	33.2	8.5	390.6	1.31
5) Brain vein diseases	31.0	14.6	212.3	0.71
Age 50-59 Total	1,007.3	355.6	283.2	1.00
1) Malignant neoplasms	341.8	136.7	250.0	0.88
2) Liver diseases and cirrhosis	117.3	19.1	614.1	2.17
3) Traffic accidents	61.1	19.2	318.2	1.12
4) Heart diseases	76.8	23.9	321.3	1.13
5) Brain vein diseases	99.7	53.1	187.7	0.66

Notes: 1) Number of deaths per 100 thousand persons calculated from the death registration data and the estimated population in 2000.

Source: KNSO (2001e, 2001f, 2001g).

increased faster for men than for women: Neoplasms became a leading cause of death for older age groups.

If the changes of death patterns continue, the leading causes of death for men and women aged 35-54 years will be injury and poisoning, and neoplasms for older age groups. Also, the proportions of deaths caused by diseases of the musculoskeletal system and connective tissue (XIII) will increase rapidly for older age groups (especially 75 years or over). Together with neoplasms (II) and diseases of the circulatory system (VII), diseases of the musculoskeletal system and connective tissue (XIII) will constitute the three main leading causes of death for the elderly.

The difference in life expectancy between men and women in Korea (7.5 years in 1999) is greater than the average sex differential in life expectancy (6.4 years) found in developed countries (KNSO, 2001b: 19). Through a comparison of mortality rates of the leading causes of death by sex and age, the study attempted to explain why the mortality patterns of Korean men belong to the Far Eastern pattern (Table 4.11).

The mortality pattern of Korean men is characterized as having a high rate of death after the 40s, compared to the death rate of men under 40 as well as that of women over 40. Table 4.11 provides an important clue to understanding the sudden increase in men's death rates after 40. In this table, the five leading causes of death for men aged 40-49 years were selected and compared with the death rates for men in their 30s and 50s as well as the death rate for women at various ages.

The death rate for men aged 40-49 years was 441.1 per 100 thousand persons. This is 2.9 times the death rate for women of that age (148.7). This age group shows higher sex ratios of death rate than any other age group. For men aged 40-49 years, the five leading causes of death were malignant neoplasms, chronic liver diseases, traffic accidents, heart diseases, and brain vein diseases. Among these causes, chronic liver diseases showed the highest sex ratio (876.9), followed by traffic accidents (395.5), and heart diseases (390.6). Similar patterns were found for the death rates of men in their 30s and 50s. The death rates for those in their 30s were low for both men and women. And the death rate for women in their 50s also grew rapidly. Accordingly, the sex

ratios of death rates for those in their 30s and 50s are lower than the sex ratios for those in their 40s. This leads to a conclusion that the high sex ratio of death rates of people in their 40s was caused by the three causes of death mentioned above.

If the sex ratio of death rates of those in their 40s was set at 1.0, the ratios caused by the causes of death mentioned above were higher than 1.3. In particular, the ratio caused by chronic liver diseases was three times the average ratio. However, such sex ratios became smaller than those caused by chronic liver diseases (4.17) and all accidents (2.81) at age groups of 35-44 years in 1980-81 (T.H. Kim, 1990: 80). This is why the Korean male mortality pattern is considered to have changed from the Far Eastern Pattern to the West Model since the 1980s.

V. Summary and Conclusion

This chapter reviewed patterns of mortality and their changes in Korea. The major findings are summarized as follows. First, the Korean mortality transition belongs to Type III and ended in the 1980s. The mortality decline was initiated with the improvement in public health administration, and was complete with the further socioeconomic development. Second, the crude death rate in Korea decreased rapidly, but has remained under 6.0 since the 1990s. The rate is projected to increase with further population ageing. Third, the deaths of women aged 5-14 years and women in their 20s were relatively high until the 1970s. However, it has substantially declined along with the increase in overall mortality. Such a decline is attributable to lowered fertility, which reduces the risk of death related to pregnancy. It is also related to the weakened preference for sons, which used to result in more privileges, better nutrition and more healthcare for sons than for daughters. Finally, the mortality patterns of men used to match the UN's Far Eastern Pattern until the 1980s. It has been approaching the Western standard since then. Changes in mortality patterns in Korea suggest that the Eastern Pattern is a phenomenon of incomplete mortality transition which is expected to disappear with the further decline in mortality.

This study was conducted in order to examine the causes and results of the mortality transition in Korea. The analysis of the mortality differentials by educational level and marital status reveals how the change in these characteristics affects the death rates by given age and sex. Since educational level serves as an indicator of the level of the standard of living, the mortality differences by educational level can be understood as a result of unevenly distributed medical care according to educational level. The extent of mortality differentials by educational level has changed over the last 30 years. The gap of mortality between different levels of education has increased for both men and women.

Mortality differentials by marital status were also quite significant, and the pattern has changed greatly over the last 30 years. Age at first marriage has gradually increased, and mortality differentials between married and single people are becoming smaller in all age groups and for both sexes. The proportion of single women increased at a faster rate than that of single men. This contributed to the rapid decrease in the death rate for women, compared to the death rate for men.

Given the relatively low educational level of those who are single, divorced or widowed, mortality differentials found by marital status can be caused by the educational composition of those married and those of other types of marital status. This study controlled the effects of educational level by comparing the standardized mortality rates for given age, sex and marital status with observed death rates. Even when the educational effects were controlled, the death rates of those unmarried (single, widowed, divorced, or separated) appear to be approximately 2-4 times higher than the death rates of those married. Thus, mortality differentials by marital status, along with differentials by educational level, are the primary factors affecting the mortality level in Korea.

Mortality differentials by educational level and marital status change over time. The educational level and the marital status of the population also changes with socioeconomic development. The analysis of the relationships between mortality levels and population compositions revealed that mortality decreases with the improvement in the educational level of the population. In contrast, changes in the marital status composition of the population have resulted in the

increase of the death rate because of the increase in the proportion of single people.

The specific causes of death have also changed in the process of mortality transition. Pneumonia and tuberculosis were the most important causes of death in 1966. However, between 1980 and 1981, the major causes of death changed to malignant neoplasms and hypertensive diseases. In the 1990s, malignant neoplasms, brain vein diseases, heart diseases and traffic accidents emerged as major causes of death.

The characteristic of the mortality pattern of Korean men is that the mortality rate of those over 40 is quite high compared to men of other ages and women of that age. Analysis of the causes of death for men aged 40-49 years reveals that the rates of deaths from chronic liver diseases, heart diseases and traffic accidents is particularly high. However, the mortality pattern of Korean men has been changing to that of the West Model in recent years.

The mortality transition in Korea is complete, as life expectancy at birth tops over 70 years and the infant mortality rate has dropped to less than 10 per 1,000 live births. Also, as the age-specific death rates of men are decreasing more rapidly than those of women, the characteristics of the UN Far Eastern Pattern are disappearing from the Korean mortality pattern. Nonetheless, persistent, intensive studies and countermeasures would be required to improve the mortality of men in their 40s, since they still show a high death rate.

The sex differentials of mortality are mainly caused by diseases related to the smoking and drinking behavior of men. These include chronic liver disease, hypertensive disease, and malignant neoplasms. In addition, while the overall death rates have declined rapidly along with the improvement in the educational level of the population, the mortality differentials by education have increased. Furthermore, there are still substantial differences in mortality by marital status: those who are single, divorced, or widowed still experience a high mortality level. This calls for more research on the mechanisms of mortality differentials as well as action programs aiming at lowering the mortality level of the more vulnerable sub-populations.

AGE-SEX STRUCTURE AND AGEING

Nam-Hoon Cho, Yong-Chan Byun, and Keong-Suk Park

I. Introduction

Korea has undergone a rapid demographic transition. The total fertility rate (TFR) has fallen from 6.0 in 1960 to 1.17 in 2003 (KNSO, 1966, 2003a). The primary causes of mortality and morbidity have shifted from acute, infectious diseases to chronic, degenerative diseases. Life expectancy at birth has increased by more than twenty years between 1960 and 2000. As of 2001, life expectancy at birth was 73 years for males and 80 years for females.

The rapid decline in fertility, the improvement of the infant mortality rate (IMR), and the substantial increases in life expectancy have brought about remarkable changes in the population structure. Of such changes, population ageing has drawn much attention. Many concerns have been expressed about the potential impact on a broad range of economic, political, and social conditions.

This chapter reviews the changes in the age and sex structure of the population since 1960 and examines the socioeconomic consequences. The first section surveys the changes in age and sex structure over the last four decades. In doing so, it examines the regional differences in population structure and the

change in the labor force population. The second section forecasts future trends in the population structure. It examines the projections of changes in labor force population and dependency ratios. The third section reviews the socioeconomic characteristics of the older population. The rapid ageing of the population raises many important issues encompassing intergenerational support and welfare policy for the elderly. This section focuses on family, economic conditions and healthcare for the current older population, revealing the distinct social consequences of population ageing in Korea. Finally, the last section discusses some of the policy implications of the changes in population structure.

II. Changes in Age and Sex Structure, 1960-2000

1. Population Size

The population in Korea increased from 24.9 million in 1960 to 46.0 million in 2000. Such population growth has been attributed to a reduced death rate due to many factors including improved public health measures and better medical facilities. The continuous decline of fertility rates has reduced the absolute as well as the relative size of the young population. This is expected to continue. In the meantime, the size of the elderly population has begun to increase. It is expected that the elderly population will grow rapidly in the 21st century as a result of prolonged life expectancy. Table 5.1 presents the population size by age and the population growth rate between 1960 and 2000.

As shown in Table 5.1, the population growth rate has declined with the sustained low fertility and mortality rate in Korea. The growth rate per annum was 2.8 percent between 1960 and 1966, 1.6 percent between 1980 and 1985 but decreased to 0.6 percent in the late 1990s. Also, the number of children (0-14 years) has continuously decreased: the growth rate per annum was recorded at minus 0.8 percent in the late 1970s and minus 1.2 percent in the late 1990s. Although the absolute size of the working age population (15-64 years) has increased, the growth rate per annum has decreased after reaching a peak of 3.6 percent in the early 1970s.

The population aged 65 or over has continued to increase with a high

Table 5.1 Trends in Population Size and Age Structure, 1960-2000

(Unit: 1,000 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: EPB/KNSO (*Population and Housing Census Report, various years*).

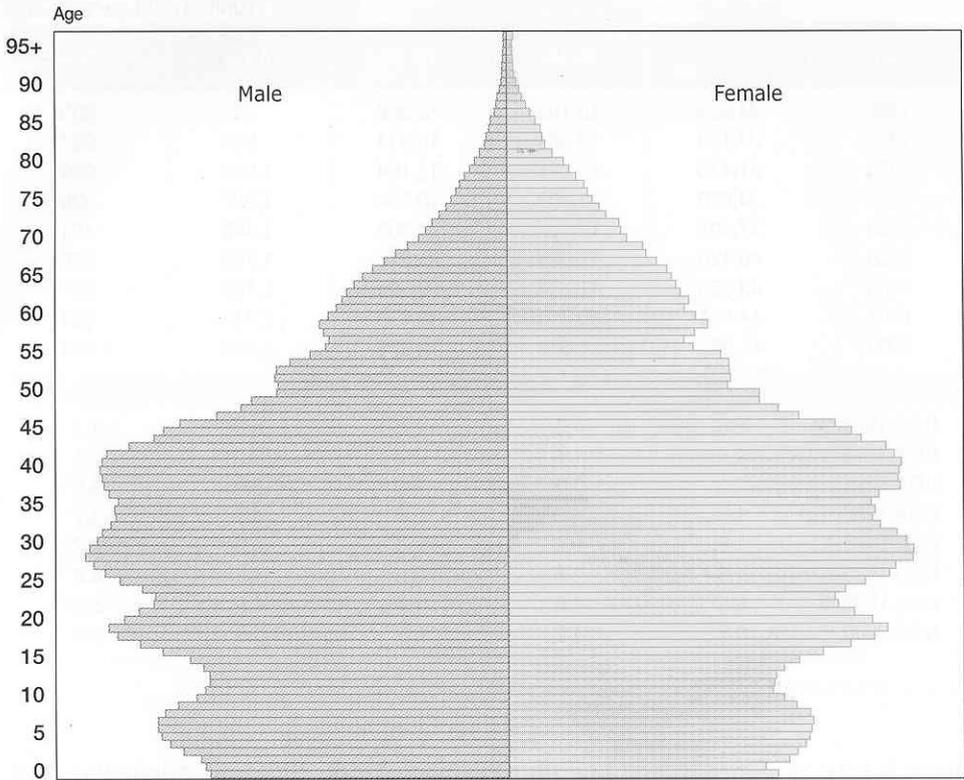
growth rate of 5.6 percent per annum from 1995-2000. In particular, the population aged 75 or over increased at a faster rate: the annual growth rate was 1.7 percent in the early 1960s, but rose to 5.9 percent per annum in the late 1990s.

2. Age and Sex Composition

The age and sex structure of the population as of 2000 is presented in Figure 5.1. The population pyramid shows population size for men and women in each age group. The shape of the top reflects the mortality of the population as it ages. The width of the pyramid's base reflects the relative size of the very young people, affected by the level of fertility.

The age structure of the population is directly determined by trends in fertility and mortality. The declining fertility rate over the last four decades has reduced the size of the very youngest ages. As shown in Figure 5.1, the

Figure 5.1 Distribution of Population by Age and Sex, 2000



Source: KNSO (2001j).

population of Korea has experienced several significant events: social turmoil in the 1940s, the Korean War in 1950, the baby boom after the war, the adoption of the national family planning program, and improved health status. This figure also shows that at the very oldest ages, the greater survivorship of women is apparent.

Table 5.2 presents changes in the age structure between 1960 and 2000. The proportion of the population under age 15 or over 65 comprised 44.4 percent of the total population in 1960, meaning that almost half the population were dependents. Those under age 15 decreased sharply from 43.5 percent of the total population in 1966 to 21.0 percent in 2000, while those aged 65 or over increased from 3.3 percent to 7.3 percent during the same period. In particular, the proportion of the population aged 75 or over was 0.9 percent of the total

Table 5.2 Trends in Age Structure, 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: EPB/KNSO (*Population and Housing Census Report*, various years).

population in 1960, and increased to 2.3 percent in 2000.

Statistics on age are frequently used in computing a measure of the dependency load that the population of working age must carry. It is a rough indicator of the average number of dependents that each 100 persons of working age are required to support.

The dependency ratios since 1960 are shown in Table 5.3. Note that there was a relatively steady decline in the total dependency ratios between 1966 and 2000. The child dependency ratio reached its peak of 81.8 in 1966. Since then, the child dependency ratio has declined steadily. However, the aged dependency ratios have increased since 1975 and reached 10.2 in 2000. The ageing index, the ratio of the aged population to the child population, has increased since 1966. This indicates that the aged population has increased faster than the child population.

As of 2000, the potential support ratio was 9.8. This implies that about 9.8 persons of working age are available to support one aged person. The ratio has declined from 16.8 in 1975. This indicates that the load borne to care for aged persons has increased since 1975.

3. Imbalance of Sex-Ratio at Birth

In addition to the low level of fertility, an imbalance in the sex ratio at birth has been an important issue in Korea. One noteworthy feature of Korean society

Table 5.3 Trends in Dependency Ratio, Ageing Index and Potential Support Ratio, 1960-2000

Year	Dependency Ratio			Ageing Index	Potential Support Ratio
	Child	Aged	Total		
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

Notes: 1) Child Dependency Ratio= $\{(0-14 \text{ Pop.})/(15-64 \text{ Pop.})\} \times 100$.

2) Aged Dependency Ratio= $\{(65+ \text{ Pop.})/(15-64 \text{ Pop.})\} \times 100$.

3) Total Dependency Ratio= $\{(0-14 \text{ Pop.})+(65+ \text{ Pop.})/(15-64 \text{ Pop.})\} \times 100$.

4) Ageing Index= $\{(65+ \text{ Pop.})/(0-14 \text{ Pop.})\} \times 100$.

5) Potential Support Ratio= $\{(15-64 \text{ Pop.})/(65+ \text{ Pop.})\} \times 100$.

Source: EPB/KNSO (*Population and Housing Census Report, various years*).

is that there are still women who resort to induced abortion, however small the proportion may be, to reduce the number of daughters and to wait for a son. This is one of the factors that bring about an unusually high sex ratio at birth, particularly for births of the third or higher order. Virtually all couples used to want at least one child, hence the sex ratio for the first birth does not deviate much from the usual 105. However, for the second and higher order of birth, the sex ratio substantially deviates from the normal sex ratio. Many couples decide to abort if a child is of unwanted sex, a girl (D.S. Kim, 1995).

As is evident from Table 5.4, the sex-ratio at birth is approaching normal conditions after reaching a peak of 116.5 in 1990. It has been attributed to the government's strict enforcement of the medical law: the government, as an effort to prevent selective induced abortions from exacerbating the current sex imbalance, made a revision to the then existing medical law in October, 1996. Under the revised law, medical doctors who perform sex selective abortions 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 movement for the self-regulation of medical professionals for improper medical services such as the performance of fetal sex

Table 5.4 Sex Ratio at Birth by Birth Order, 1980-2000

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: EPB/KNSO (*Vital Statistics Reports*, various years).

determination procedures. Non-governmental organizations have also campaigned on the negative effect of the sex-imbalance and for improvement in the social status of women.

4. Urban-Rural Differences in Age Structure

Along with rapid urbanization, the age structure of the population in rural areas has become quite different from that of rural areas. As shown in Table 5.5, in 1960, while a higher proportion of the working age population was found in urban areas, the proportion of the population made up of youth and the elderly was higher in rural areas than in urban ones. In four decades, only the proportion of the population made up by the elderly was higher in rural areas than in urban ones, due to age selective migration. As a result, rural areas already have an aged population, of which 14 percent are aged 65 or over. By contrast, urban areas are in the process of ageing; the elderly still make up less than 7 percent of the total population.

5. Age Structure of the Labor Force

The working age population (aged 15-64) increased from 6.9 million persons in 1960 to 16.7 million persons in 2000. As shown in Table 5.2, the proportion of the total population of working age also increased from 55.6 percent in 1960 to 71.7 percent in 2000. However, examination of the age

Table 5.5 Age Composition of Population by Place of Residence in 1960 and 2000

(Unit: 1,000 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)
Age 0-14	10,153	2,735	7,419	9,639	7,897	1,742
(%)	(40.6)	(39.1)	(41.2)	(21.0)	(21.6)	(18.6)
Age 15-64	13,901	4,089	9,812	32,973	26,743	6,230
(%)	(55.6)	(58.4)	(54.5)	(71.7)	(73.0)	(66.7)
Age 65+	935	174	761	3,372	2,001	1,371
(%)	(3.7)	(2.5)	(4.2)	(7.3)	(5.4)	(14.7)
Ageing Index	9.2	6.4	10.3	35.0	25.3	78.7

Note: Number of deaths per 100 thousand persons calculated from the death registration data and the estimated population in 2000.

Source: EPB(1963); KNSO(2001j).

structure of the working age population reveals that the proportion aged 15-24 decreased from 33.6 percent in 1960 to 22.9 percent in 2000, whereas the proportion aged 55-64 increased from 8.9 percent to 11.4 percent, as shown in Table 5.6. Also, the proportion of the working age population aged 45-54 increased from 1960-2000. This indicates that, even though the working age population is increasing, the working age population itself is ageing mainly due to the rapid reduction of fertility.

Table 5.6 Age Composition of the Working Age Population, 1960-2000.

(Unit: 1,000 persons, %)

Age Group	1960	1970	1980	1990	2000
Number	6,893	8,529	11,670	15,180	16,692
Total	100.0	100.0	100.0	100.0	100.0
% Age 15-24	33.6	32.7	35.6	29.4	22.9
% Age 25-34	25.0	25.6	24.0	28.4	24.8
% Age 35-44	18.8	19.3	18.7	19.1	24.8
% Age 45-54	13.8	13.5	13.3	13.9	16.1
% Age 55-64	8.9	8.9	8.4	9.2	11.4

Sources: EPB/KNSO (*Population and Housing Census Report*, various years).

III. Future Age and Sex Structure, 2000-2050

1. Population Size and Composition

Although the official population projection (KNSO, 2001a) assumed the total fertility rate would remain 1.4 by 2050, the total fertility rate decreased further to 1.17 in 2002. The other assumptions such as mortality and migration are in accordance with actual changes. Based on this assumption, it is projected that the annual population growth rate will be 0.38 percent in 2010 and decrease to 0.04 percent by 2020. A zero population growth rate is projected to be reached by 2023 with a population size of 50.7 million, and thereafter the Korean population will decrease. The projected total population is 44.3 million in 2050.

As shown in Table 5.7, the number of children (0-14 years old) is projected to continue to decrease: children accounted for 21.1 percent of the total population in 2000. Their share of the population will continue to decrease to 10.5 percent in 2050. The absolute size of the working age population will begin to decrease after reaching its peak (36.4 million) in 2016 as the smaller youth population enters working age. The elderly population aged 65 or over will continue to increase. The proportion of the elderly reached 7 percent in 2000, making Korea an ageing society. It will double in 2019, making Korea one of the most aged societies.

Table 5.8 presents the speed of population ageing for Korea as well as other selected countries. Unlike Western societies, Korea is experiencing a rapid

Table 5.7 Projected Total Population and Population Growth Rates, 2000-2050

(Unit: 1,000 persons, %)

Total population	2000	2010	2020	2030	2040	2050
		47,008	49,594	50,650	50,296	48,204
Annual pop. 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
% Age 0-14	21.1	17.2	13.9	12.4	11.5	10.5
% Age 15-64	71.7	72.1	71.0	64.6	58.4	55.1
% Age 65+	7.2	10.7	15.1	23.1	30.1	34.4

Source: KNSO (2001a).

Table 5.8 The Speed of Population Ageing in Selected Countries

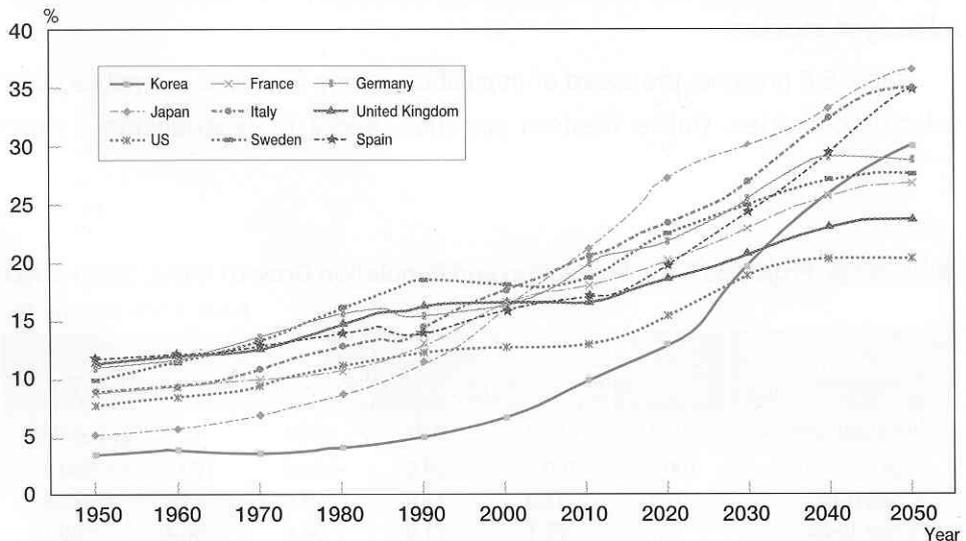
	Year			Duration	
	7%	14%	20%	7%→14%	14%→20%
Korea	2000	2019	2026	19	7
Japan	1970	1994	2006	24	12
Germany	1932	1972	2012	40	40
United Kingdom	1929	1976	2021	47	45
Italy	1927	1988	2007	61	19
USA	1942	2013	2028	71	15
France	1864	1979	2020	115	41

Source: KNSO (2001a).

population ageing process. In Western societies, it took more than 40 years for the proportion of the population aged 65 or over to increase from around 7 to 14 percent. However, for Korea, it will take less than half of the time taken in Western societies for the elderly proportion to double. This is even faster than Japan where the doubling of the elderly proportion took 24 years.

As indicated in Figure 5.2, Korea will face accelerated population ageing. Such a change in population structure will eventually impose an excessive

Figure 5.2 Trends in the Proportion of the Population Aged 65 or Over



Source: UN (2002).

burden on the working population because of increasing social security expenditures, as experienced in most developed countries.

2. Change in Age of Labor Force Population

Changes in the structure of the working age population can be indicated by the net entrance rate as follows:

$$\text{Net Entrance Rate} = [(P_{15-24} - P_{55-64})/P_{55-64}] \times 100$$

The rate is calculated by dividing the difference between the number of those entering (aged 15-24) and the number exiting (aged 55-64) the labor market by the exiting (aged 55-64) population times 100. It is an indirect measure of population ageing in the labor market. A positive rate implies that the population in the labor market is increasing and is becoming younger; a negative rate indicates that the population in the labor market is decreasing and becoming older.

Table 5.9 Net Entrance Rate of Working Age Population, 1960-2050

(Unit: %)

Year	Total	Men	Women
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: EPB/KNSO (*Population and Housing Census Report*, various years); KNSO (2001a).

As shown in Table 5.9, the net entrance rate is estimated to become negative in 2015 for women, and in 2020 for men. In other words, the number of those exiting from the labor market will be greater than the number entering the market in 2015 for women, and in 2020 for men. This implies that the labor force is also in the process of ageing and, as a result, a labor shortage will be a serious problem in the near future.

3. Dependency Ratios

The dependency ratios for Korea since 2000 are shown in Table 5.10. Note that there will be a relatively steady increase in the total dependency ratios between 2000 and 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. Correspondingly, the ageing index, the ratio of the aged population to the child population will increase. From 2020, the aged population will be more than the child population.

As mentioned before, the potential support ratio was 9.8 in 2000. The ratio is projected to decline to 1.6 in 2050, indicating that the load borne to care for aged persons will increase. The estimate of the potential support ratio provided by the UN is presented in Table 5.11. According to UN estimates, the potential support ratio for Korea will be similar to that of many developed countries in 2050. However, as mentioned before, the new population projection provided by the KNSO suggests that the potential support ratio for Korea in 2050 will be 1.60, which is one of the lowest in the world.

Table 5.10 Projected Trends in the Dependency Ratio, 2000-2050

Year	Child Dependency Ratio	Aged Dependency Ratio	Total Dependency Ratio	Ageing 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: KNSO (2001a).

Table 5.11 Potential Support Ratio for Selected Countries, 1998 and 2050

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	United Kingdom	4.07	2.36
Japan	4.26	1.71	USA	5.37	2.57

Source: EPB/KNSO (*Vital Statistics Reports*, various years).

IV. Socioeconomic Characteristics of the Older Population

Rapid shifts in age structures associated with population ageing have a profound impact on a broad range of economic, political and social conditions. For example, concerns are growing about the long-term viability of intergenerational social support systems, which are crucial for the well-being of both the older and younger generations. This is especially critical given that the provision of care within the family is becoming more and more difficult. The shifting weights of the various age groups tend to create social and political pressures on a society to change its pattern of resource distribution, generating conditions that may give rise to intergenerational conflict (Jackson, 1998).

As more people live longer, retirement, pensions, and other social benefits tend to be extended over longer periods of time. This makes it necessary for social security systems to change substantially in order to remain effective (Creedy, 1998). Increasing longevity can also result in rising medical costs and increasing demands for health services, since older people are typically more vulnerable to chronic diseases.

1. Changes in Intergenerational Support

In Korea, the living arrangements of the elderly have changed greatly. Figure 5.3 presents changes in the living arrangements of the elderly in Korea, 1980-2000. The proportion of the elderly living with their children has fallen. Correspondingly, the proportion of the elderly living alone or with a spouse only

has increased from 7 percent in 1966, to 14.7 percent in 1980, 26.7 percent in 1990, and 45.4 percent in 2000.

While intergenerational coresidence has become less common, its meaning has also changed. On one hand, intergenerational coresidence still remains the preferred living arrangement for many people. On the other hand, such living arrangements tends to occur as a result of the need for economic or instrumental support, whereas it used to be normatively regulated.

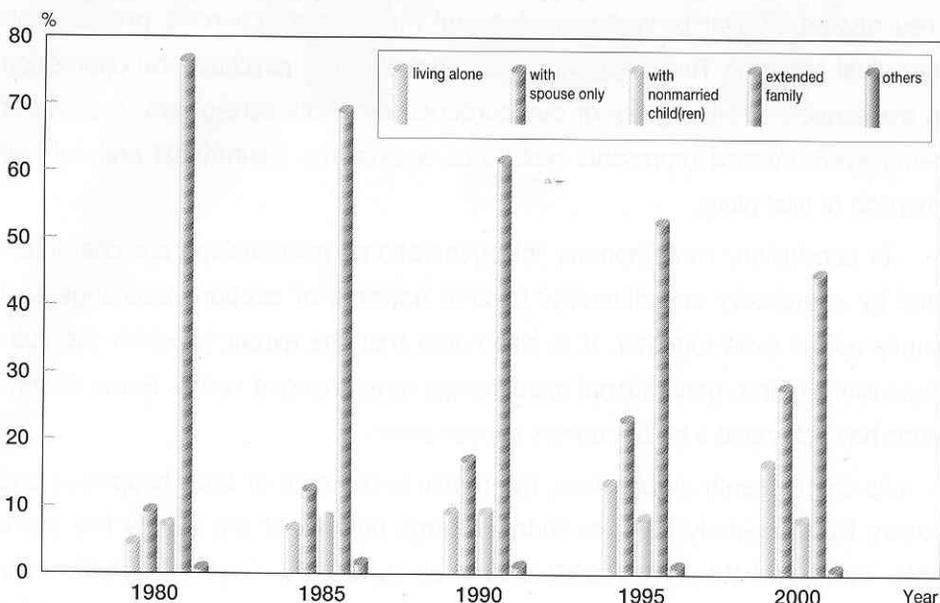
Both middle-aged adults and the elderly today perceive that elderly parents receive more benefit from intergenerational exchanges than their children. The majority of middle-aged adults provide financial support for their elderly parents.

Of course, the main beneficiaries of intergenerational exchange are not always elderly parents. Working young mothers often prefer to live with their parents (or parents-in-law) in order to reduce the burden of housework and child rearing through the aid of elderly parents. Newly married couples often start their family life in their parents' house. This implies that the prevalence of coresidence today does not necessarily reflect the time-lasting force of traditional culture. Nor it is a transitional symptom. Coresidence today is constructed in various ways to generate the diversity of intergenerational wealth flow.

While the idea of *Hyo*, filial piety, remains strong in contemporary Korea, the way in which it is exercised differs from how it was exercised in traditional society. According to the traditional *Hyo* idea, the most ideal way to care for old parents was to live together and support them emotionally and materially under any conditions. Many parents today, however, do not expect their children to support them. According to the Korean fertility survey in 1974, many adults did not expect to receive support from their children when they became old (T.H. Kwon, 1978). T.H. Kwon (1984) asserts that the *Hyo* idea today can be identified as satisfying the parents' expectations regarding their children's success in life, not as contributing to the patriarch's accumulation of wealth as Caldwell's (1982) wealth flow theory assumes.

As T.H. Kwon (1984) indicates, making elderly parents happy has now translated into children's success and social achievement. This change in the perception of *Hyo* implies that the elderly today perceive a stronger sense of

Figure 5.3 Living Arrangements of the Elderly, 1980-2000



Sources: KNSO (*Population and Housing Census*, 2 percent sample, various years).

being a burden by receiving one-sided help from their children. Many elderly parents rely on their children because of their lack of self-reliance, which is legitimized by the norm of *Hyo*. However, at the same time, their discomfort and inner conflict resulting from that help has been growing.

Filial piety has its force not just from cultural tradition, but from a very concerted effort at institutionalization. An example is found in public support for the poor. Elderly persons are more likely than their counterparts to be affected by poverty. In Korea, impoverished persons are entitled to receive government support through a restricted means test of income and family support. Public support is given only to those who meet the conditions of the income/asset test and who do not have spouses or children to support them. Because of the precondition of "being without family support", many poor elderly who have children but do not have any substantial support from them are not eligible for the benefit, and are thereby left in critical poverty. The Law for Old Age Welfare stipulated in 1981 also emphasizes the primacy of family over society for elderly support (Hyun, 1988).

Despite the institutional effort to impose many welfare roles on the family,

the attitude toward family support has been weakening over time. The resurrection of filial piety by institutional means puts coercive pressure on individual behavior. This coercion is often expressed as psychological oppression in the sense of feeling guilty or overburdened as family care-givers. A sense of being overburdened represents resistance against the institutional and cultural coercion of filial piety.

In conclusion, contemporary intergenerational relationships are characterized by complexity and diversity. Diverse patterns of support, exchange and family norms exist together. It is also noted that the extent to which the sub-dimensions of intergenerational relationships have changed varies. Some dimensions have changed a lot but others appear static.

As the research emphasizes, the family is the core of both happiness and misery for the elderly in Korea today. A large number of the elderly live alone (T.H. Kwon and Y.J. Park, 1995; Chung et al., 1998). Even living with their children, many elderly parents are concerned about whether they are perceived as useless dependents to their children (Cha et al., 2000; D.S. Kim et al., 2000). Given that family care is provided mainly by women (i.e. wives or daughters-in-law), the improvement in educational achievement and aspirations for economic activity among women lead to role conflicts.

2. Economic Status of the Elderly

1) Poor Economic Status of the Elderly and Increasing Inequality in Later Life

One of the most distinctive characteristics of the elderly in Korea today is their poor economic status. The poverty rate among the elderly has increased more rapidly during the last decade than that of the total population (Seok and Kim, 2000). The severity of poverty among the elderly is also reflected in the fact that they are the main target group for public assistance programs. In 2000, about a fourth of those aged 65 or over were beneficiaries of public care programs.

The poor economic status of the elderly today is highly associated with their

Table 5.12 Primary Income Source of the Elderly in Selected Countries, 2000

(Unit: %)

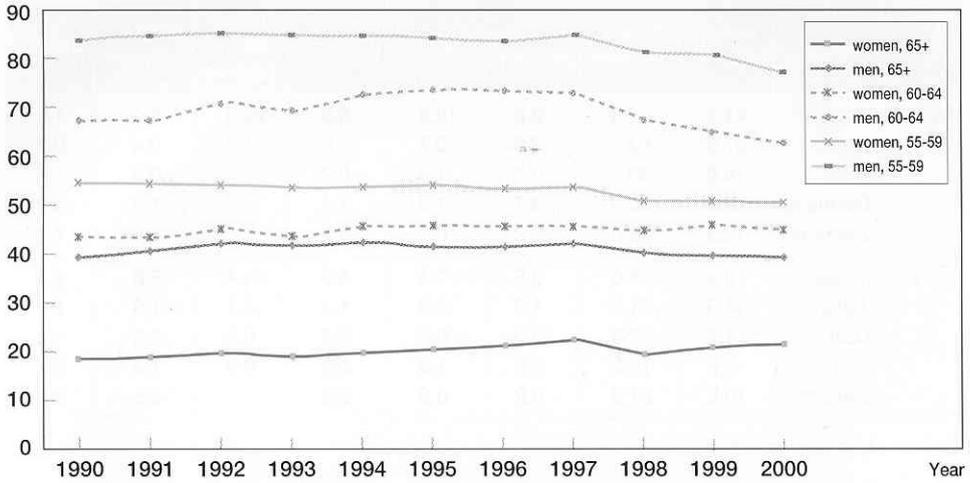
		Labor income	Public pension	Private pension	Savings	Asset income	Support from children	Public support	Others
Men	Korea	41.3	7.3	0.8	12.8	6.0	26.3	4.0	1.8
	Japan	27.9	63.2	2.0	0.7	3.4	1.4	0.4	0.7
	USA	16.6	49.7	20.7	1.4	8.2	-	0.5	1.6
	Germany	12.0	70.8	9.7	1.2	1.4	-	1.6	3.2
	Sweden	12.9	78.0	3.2	0.2	0.2	-	3.4	1.8
Women	Korea	19.3	5.0	0.5	7.4	5.3	54.4	5.6	2.5
	Japan	14.3	71.5	1.3	2.3	1.3	5.1	1.3	2.7
	USA	11.7	62.0	13.0	0.5	6.0	0.2	0.5	4.3
	Germany	3.6	79.3	8.6	1.5	2.3	0.3	1.5	2.9
	Sweden	10.9	81.8	0.9	0.9	0.2	-	2.5	2.5

Source: Japan Cabinet Office (2002).

generational characteristics, constructed over their life course intermingled with the historical context of late industrialization, a less developed social welfare system, and current economic restructuring. The source of income of the Korean elderly is different from that of the elderly in developed societies. Table 5.12 presents the primary income source of the elderly in Korea as well as other selected countries. The primary source of income for the Korean elderly is labor or support from their children. A gender difference is also noted in terms of the primary income source; elderly women are more likely to rely on support from children, while elderly men are more likely to depend on their own labor income. Surprisingly, Japan with a strong family tradition, shows a similar pattern to that of European societies; the main income source is a public pension. In the United States, private pensions make up a relatively large proportion of the total income.

It has been well documented that support from children has become less common. As a result of weakening familial support as well as lack of access to social security programs, many elderly are obliged to continue working well into advanced ages. This explains why many elderly Koreans remain at work. Contrary to the trend of early retirement in Western societies, the Korean elderly maintain a high rate of economic participation. Figure 5.4 presents the labor force participation of men and women aged 55 or over.

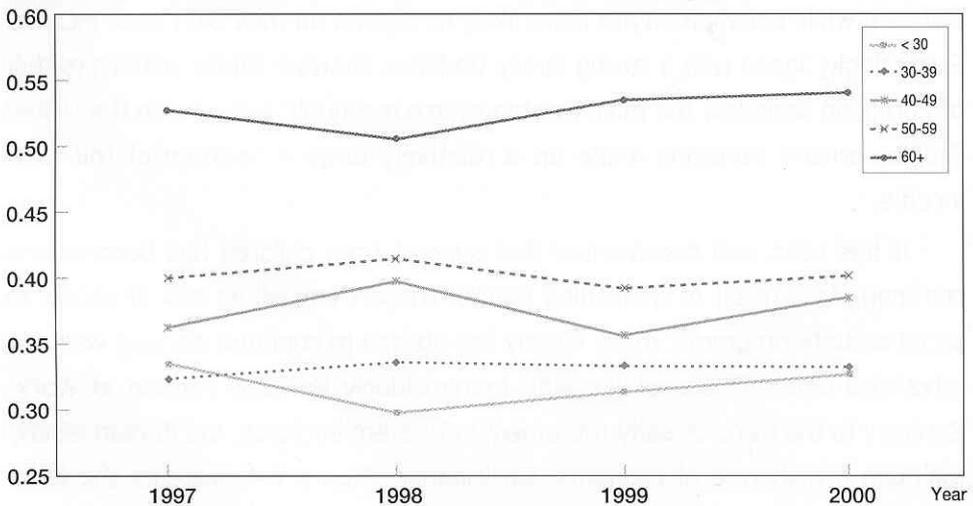
Figure 5.4 Labor Force Participation Rate of Those Aged 55 or Over by Sex, 1990-2000



Sources: KNSO (Annual Report on the Economically Active Population Survey, various years).

Also notable is the inequality in old age (Choi and Kim, 2003). It is surprising that old age not only has a higher risk of poverty, but also contains the greatest inequality. Income inequality increases with age. Figure 5.5 shows the GINI coefficient by age of household head. As shown in this figure, income

Figure 5.5 Gini Coefficients by Age of Household Head, 1997-2000



Source: Choi and Kim (2003).

inequality has been greater among those aged 60 or over than any other age group. Increasing inequality through the course of life, particularly at old age, signifies a lack of and the ineffectiveness of welfare policies in ameliorating market driven inequality.

2) Ambivalence of Response to Ageing in the Work Force

It has not been until very recently that the government has paid attention to the employment of the elderly. The emphasis on the workforce of the elderly was boosted by international organizations such as the ILO, OECD, and EU. These organizations have attempted to provoke the restructuring of the main social policies such as the public pension and healthcare systems in response to the ageing and growing financial burden of supporting the elderly at global levels. Simultaneously, labor policy for the elderly needs to change by enhancing the employability and reducing the age discrimination of the elderly in the workforce (KLI, 2002).

According to a projection of the future population, the proportion of the population aged 50-64 will increase steadily. Considering the high rate of economic participation at ages over 65, the share of the old age workforce is even larger than expected from the population structure. In anticipation of such demographic change, the government has made an effort to develop a policy to encourage old age employment. Emphasizing "active ageing," the government asserts that older persons with skills should be able to work longer in society. Many policies were implemented to improve employment opportunities for the elderly. For instance, the Law of Senior's Employment Protection and Encouragement, stipulated in 1991, provided various wage supplement incentives for companies that hired workers aged 55 or over (Jang, 2001). Occupations appropriate for seniors were also devised.

Despite the government's effort to promote employment opportunities for the elderly, the labor market is very unfavorable to senior workers. Occupation dissimilarity between those aged under 55 and those aged 55 or over prevails and tends to be exacerbated in a way to marginalize the workforce of senior workers (K.S. Park, 2003). Most companies have mandatory retirement, with the retirement age set to be between 55 and 58. Even in the current milieu of

labor curtailment and flexibility, early retirement in the 40s is encouraged. After retirement in middle or older ages, it is very difficult to regain a job with a similar level of income. Most jobs available to the elderly are marginal ones, such as manual labor or part-time jobs at a very low wage for which many small companies have difficulty finding an alternative labor force (K.S. Park, 2003).

Age-discrimination in the labor force is grounded on the negative stereotype of the association between ageing and productivity. The typical image held by many employers about senior workers is of the "senility of labor" due to declining health and intelligence. Another stereotype about senior workers is their high wage cost compared to their productivity, particularly on the age-seniority based income system, although the number of workers on the seniority based wage system has declined substantially.

Given the age barriers that prevail, the recent policy orientation to active ageing can lead to an exploitative outcome by relocating many poor and alienated elderly to the marginal workforce. This concern is not an unfounded fear, as the society witnesses persisting labor instability and age discrimination in the labor market: early retirement in major companies prevails; labor status becomes more unstable; and jobs allowed for the elderly are very marginalized such as guard or maid, and very often under the minimum wage level.

3) Health and Healthcare for the Elderly

Many Korean elderly have morbidity and disability problems (Rhee et al. 1994; H.B. Cha, 1998; Chung et al., 1998). According to a 1998 survey of the Korean elderly (Chung et al, 1998), about 87 percent of the elderly aged 65 or over have at least one long-term chronic disease. Many of the elderly with morbidity are likely to have difficulty performing daily activities. According to the survey, those having a problem with at least one ADL item amount to 31.9 percent of the aged 65 or over. Despite definitional and measurement differences, many studies have reported that among morbidity problems, dementia is the most serious one which results in the nearly complete loss of the ability to perform daily activities (Rhee et al., 1994; SDI, 1997).

In Korea, most of the impaired elderly live with their children and receive care from their families (Rhee et al., 1994; T.H. Kwon, 1984). Among family

members, the most preferred care-giver is a spouse or the eldest daughter-in-law (Rhee et al., 1994). However, there exists a growing tension surrounding family support. While many disabled elderly persons live with and receive help from their children, it is often noted that family care-givers suffer from a sense of being overburdened (Rhee et al, 1994; H.B. Cha, 1998). Such a feeling derives from various stressors such as the financial cost, time constraints, physical difficulty, and emotional burnout (H.K. Choi, 1991). The longer the duration of care-giving is, the more likely care-givers suffer from a sense of role captivity, psychological deprivation, and guilt (H.K. Choi, 1991; Y.J. Kim and H.K. Choi, 1993; Aneshensel et al., 1995; Kim and Jun, 1995; K.J. Lee, 1995; H.K. Choi and Y.J. Kim, 1997). In this regard, the cumulative sense of burden is likely to lead to a breakdown of the family support system (Montgomery et al., 1985).

The growing tension over family support increases the demand for social care services (i.e. home helper, short stay, respite care, nursing homes etc). However, the majority of families do not use social services. Such a low level of utilization of social care services is mainly due to the opportunity constraints. It must be noted that the preference or need for social care service is much greater than the actual use of such services (K.S. Park, 2003: 321).

V. Conclusion

A decline in fertility and a rise in life expectancy has resulted in a decline in the population growth rate. It is projected to reach a zero population growth in 2023. As a result, the number of children as well as their share of the total population will continue to decrease. The absolute size of the working age population will start to decrease after reaching its peak (36.4 million) in 2016. The elderly population aged 65 or over will continue to increase with a high growth rate. Their proportion in the total population will reach 7 percent in 2000, and will double by 2019.

There is growing concern about demographic changes and their socioeconomic effects. Some have argued that the population policy should be once again revived as it was in the high fertility era. Of course, the objective,

opposite to the previous policy, should aim at enhancing the fertility level. Our concern is whether population policy would follow the conservative path, imposing the roles of good mother on women and the responsibility of the family over government. It is another issue whether the intended result would be realized.

In the face of population ageing and the financial instability of the public pension and healthcare system, institutional restructuring must be undertaken seriously. Many policies developed in Western societies are under study and experiment. Very often, such efforts have been made without taking into serious consideration the distinct Korean context of population ageing. Emphasis on "the active ageing society" is also prevalent.

With growing concern about ageing in the workforce and the financial burden associated with the retired elderly, the government has attempted to encourage work at old age and to expand the employability of the elderly. The retirement age is being encouraged to be delayed gradually. Nevertheless, age discrimination in the workforce is still pervasive. Without any effort to alleviate age discrimination in the workforce, the policy of the "working society over 65/70" would have done nothing but extend exploitation of poor laborers into old age.

Considering the diversity and stratification within the elderly population, the privatization of welfare service is also being pursued. It may somehow serve to satisfy the diverse needs and enhance the quality of goods and services. However, the negative aspect of privatization must not be ignored: increased inequality without proper protection for the poor elderly.

Demographic ageing brings about great social and economic consequences. Furthermore, the rapidity of population ageing impinges on the pressure of social adjustment. Demographic ageing itself is not an exogenous force to social constructs. Social factors underlie the rapid ageing of the population. In other words, overloaded and materialized familism, an ineffective welfare policy, and gender and age barriers to labor serve as important social factors affecting the rapid demographic ageing. Therefore, rather than provoke the resurrection of family centeredness, substantial and responsible efforts are needed in response to population ageing, aimed at building a society of gender and age equality.

MARITAL STATUS

Wha-Soon Byun

I. Introduction

Rapid industrialization and urbanization in Korea has exerted a great influence on views and practices related to marriage. It has altered the position of women in marriage and marital life as well as that of men. Demographic indicators of such changes include a decline in the marriage rate, a rise in age at marriage, and an increase in divorce and remarriage. Special attention has been paid to the increase of age at first marriage and the growth in the number of unmarried women, mainly brought about by their rapid advancement in educational attainment and labor force participation. Divorce has also become more common than ever before. Correspondingly, cases of remarriage have been increasing. In particular, many incidences of divorced women marrying never married men are becoming more common.

What are the underlying causes of such changes? Patriarchal values are collapsing, gender equality is increasing and individualism is taking predominance in family relationships. Nonetheless, whether they desire it or not, men and women are living different lives. It is often observed that people experience many conflicts since most are still strongly tied to the ideas of

marriage and marital relationship that have been fixed through longstanding traditions. Such ideas are related to values and norms as follow: a "marriage ideology" dictating that one should get married once he or she becomes an adult; a "patriarchal norm" prescribing that men are responsible for the economic support of their family; "the ideal of the wise mother and good wife" which imposes the idea that women should obey their husbands and take responsibility to bring up their children; and a "fidelity ideology" dictating that once married, women should live with their husband until death (S.J. Moon, 1995).

In short, variety in the types of marital status found these days can be understood to show post-modernity in the realm of the family (Doherty, 1999). The change in the values of family that post-modernism has brought about is the acknowledgement of the various forms of the family and differences in gender. Therefore, this research stands on the perspective that the gap between family values and social phenomena needs to be eliminated. Such a gap is created by a value system that defines marriage following the ideology of traditional patriarchy, even though there has been a change in the two-parent nuclear family model where the husband is the breadwinner and the wife is the homemaker.

This research first examines the demographic factors leading to the increase in single, divorced and remarried women. Then it deals with specific subjects focusing on the changes and controversial issues concerning gender. In conclusion, this paper attempts to forecast demographic changes that Korea will experience in the near future.

Of the numerous demographic studies of marriage types, S.S. Lee (1993) focused on when, where, how and under what conditions people get married under modernization and industrialization. This research initially assumed that incidences of marriage would increase with population growth in Korea, but found that marriage rates have gradually declined. Given that the birth rate has been declining since the mid 1980s, the research forecasts that the absolute number of marriages will decrease after 2005 when the small number of cohort born in and after the 1980s reaches the age of marriage. Enhancement of the level of education and an increase in the labor force participation of women has

resulted in a delay of marriage. In addition, a tendency toward late marriage has been observed to be greater in the cities than in rural areas.

As for research on divorce, K.A. Park (2000) reports that the divorce rate has increased at all ages for both men and women. In particular, the increase is pronounced for those in their 40s and 50s. Also, the divorce rate of young people aged 25 or under shows a higher level than any other age group. In the past, people were likely to get divorced after a certain time of being married, but divorces can now be found regardless of the duration of the marriage.

An unprecedentedly low level of fertility has led to a rigorous demographic analysis of those who have never been married. In the case of Japan, the proportion of singles is also rapidly increasing. Numerous in-depth studies on this phenomenon have been conducted. Retherford et al. (2002) report that 15 percent of Japanese men were unmarried in 2000 and expects that it will increase to 20 percent in 2010. The corresponding proportion of unmarried Japanese women is estimated to increase from 7 percent in 2000 to 10 percent in 2010. In terms of place of residence, cities have a lower rate of marriage than rural areas. With respect to education, men with a low level of education and women with a high level tend to remain single. Young women are less likely than the previous generation to accept traditional gender roles and, as a result, they are avoiding marriage.

II. Change of Marital Status

1. Marriage Rate and Divorce Rate

Changes in the rates of marriage and divorce over the last 85 years can be divided into four phases by their social and economic conditions. The first phase covers 1915-1945 during which Korea was under the rule of imperial Japan. This phase was characterized by a high marriage rate and a low divorce rate. The second phase was from 1946-1960, which corresponds to the period of social turmoil with the establishment of the Korean government after liberation, and the social chaos following the Korean War. Rates of both marriage and divorce were low in this phase. The third phase, 1961-1980 revealed the characteristics

Table 6.1 Marriage and Divorce, 1915-2000

Year	Total Population (in 1,000)	Number of Marriages	Marriage Rate (%)	Number of Divorces	Divorce Rate (%)	Ratio of Divorce to Marriage (per 100 marriages)
1915	15,958	111,443	9.0	7,995	0.5	7.2
1920	17,264	138,505	8.0	7,982	0.5	5.8
1925	19,020	186,710	9.8	7,607	0.4	4.1
1930	21,438	180,833	8.9	8,894	0.4	4.9
1935	22,208	135,143	6.1	5,323	0.2	3.9
1938	21,951	158,271	7.2	8,151	0.4	5.2
1949	20,167	85,043	4.2	3,223	0.2	3.8
1955	21,502	127,489	5.9	5,825	0.3	4.6
1960	24,989	186,187	7.5	7,016	0.3	3.8
1965	28,670	259,081	9.0	8,150	0.3	3.1
1970	31,458	295,137	9.2	11,615	0.4	3.9
1975	35,341	283,226	8.0	16,453	0.5	5.8
1980	37,417	403,031	10.6	23,662	0.6	5.9
1985	40,420	376,847	9.2	38,838	1.0	10.3
1990	43,390	399,312	9.3	45,694	1.1	11.4
1995	44,564	398,484	8.7	68,279	1.5	17.1
2000	45,985	334,303	7.0	119,982	2.5	35.9

Notes: 1) The figures prior to 1945 refer to prepartition Korea.

2) The figures of total population from 1925-1955 differ from those provided by the KNSO. However, for consistency in data sources, they are cited from the sources reported as above.

Source: 1) Prior to 1970: EPB (*Annual Report on Marriage and Divorce Statistics*, various years); T.Y. Lee (1968, 1981); W. S. Byun, 1987.

2) After 1970: EPB/KNSO (*Population and Housing Census Report and Annual Report on Marriage and Divorce Statistics*, various years).

of industrialization after the establishment of the Five Year Plan for Economic Development. This phase can be distinguished from the previous phases by an increase in the rates of marriage and divorce. The fourth phase, 1981-2000, shows the characteristics of a late industrialized society and growth in the economy. A continuous decrease in the rate of marriage and a rapid increase in the level of divorce can be observed at this phase. Table 6.1 presents the information on marriage and divorce between 1915 and 2000.

As shown in Table 6.1, the first phase is characterized by a high marriage rate and a low divorce rate overall. The rate of marriage, with a peak of 9.8 per 1,000 persons in 1925, started to drop over time and hit bottom at 6.1 in 1935. After that, the rate has somewhat increased, recording 7.2 in 1938. A high rate of marriage is thought to be a result of attempts to avoid an adverse social and

economic situation through early marriage such as the forced conscription of men and relief-women toward the end of the Japanese imperial regime. In the meantime, the divorce rate at this phase had been very low ranging from 0.2 to 0.5 cases per 1,000 persons. The rate of divorce from 1915-1930 appears higher than that for the remaining periods of the phase. The comparatively high level of divorce during this particular period is partly attributable to the incidences of divorce of couples whose marriages were arranged by their parents, but were found to be unsatisfactory during the early period of modernization (T.Y. Lee, 1968).

The marriage rate at the beginning of the second phase was 4.2 per 1,000 persons. However, it increased gradually until 1955 and then sharply increased to 7.5 in 1960. Marriage for this particular period was understood to be delayed due to the social turmoil right after liberation and the Korean War. However, as the society became stabilized afterwards, marriage increased at a rapid speed. In the meantime, a rise in the marriage rate before and after 1955 generated an increase in the fertility rate, called the "baby boom". This became a major factor in population dynamics later. In terms of divorce, its rate during the second phase was 0.3 or less which is very low.

In the third phase, the marriage rate decreased from 9.0 per 1,000 persons in 1965 to 8.0 in 1975. Since then, the rate started to increase and reached a peak of 10.6 in 1980. The rate of divorce increased steadily during this period: from 0.3 in 1965 to 0.6 in 1980. Until this period, there had been no remarkable signs of change indicating a breakaway from the traditional values of marriage and divorce.

The marriage rate in the fourth phase increased from 9.2 per 1,000 persons in 1985 to 9.3 in 1990. However, the rate showed a steady and gradual decrease from 1990-1995. In 2000, the marriage rate reached 7.0 per 1,000 persons, revealing a fast decline in the five year interval.

The divorce rate also increased in the fourth phase. It increased from 0.6 per 1,000 persons in 1980 to 1.0 in 1985, revealing a more rapid increase than before. The increase in the divorce rate continued and reached 2.5 in 2000. This is highest level of divorce in the modern history of Korea. It is thought that the economic crisis in 1997 have had a massive impact on marital life, causing a

Table 6.2 Population (age 15+) Composition by Sex and Marital Status, 1925-2000

Marital Status	1925	1930	1955	1960	1970	1980	1990	2000
Female Population (in 1,000)	5,754	6,219	7,606	8,077	9,266	12,542	16,266	18,366
% currently married	76.0	77.4	54.0	56.5	59.1	57.4	58.8	60.0
% widowed	17.7	16.2	14.3	14.6	15.2	13.3	12.5	12.8
% divorced	1.1	0.6	1.3	0.8	0.9	0.6	0.9	2.1
% single	5.3	5.9	30.4	27.6	24.9	28.7	27.8	25.1
Male Population (in 1,000)	6,066	6,494	7,347	7,868	8,927	12,209	15,991	17,981
% currently married	72.1	72.1	53.1	55.4	59.8	57.4	59.3	61.2
% widowed	8.5	7.6	3.3	2.8	2.4	1.9	1.8	1.8
% divorced	1.4	1.6	0.8	0.5	0.4	0.4	0.7	1.8
% single	18.1	18.8	29.1	41.0	37.4	40.4	38.2	35.1

Notes: 1) The data prior to 1955 includes both South Korea and North Korea.

2) Data for 1940 is not provided due to the difference in the categories of marital status between 1940 and other years.

Source:GGK/MHA/EPB/KNSO (*Population and Housing Census Report, various years*).

decrease in marriage and an increase in divorce. It is forecasted that the propensity toward not marrying, divorce and remarriage will continue to rise while the idea of universal marriage will be challenged in the future.

2. Population Composition by Sex and Marital Status

Table 6.2 presents the population composition by marital status of men and women aged 15 or over. In this table, marital status is divided into two groups: those married and single. Married individuals are subdivided into three categories: those currently married, those widowed and those divorced. Excluded from the table is the group whose marital status is "unknown" since they account for less than 1 percent of the population. It should be noted that the figures in the table do not refer to incidences of marriage, a loss of a spouse or divorce but to the relative share of the population.

According to Table 6.2, currently married people compose the greatest proportion for both men and women. Thus, the majority of men and women in Korea are married and live with their spouses. A noticeable difference between men and women is found in widowed persons: the proportion of women widowed is greater than that of men by 10 percentage points throughout each

period. In the case of divorce, the proportion is smaller than that of any other marital status. However, it has been rapidly increasing recently. As for singles, the proportion of men is greater than that of women by 10 percentage points.

The main feature found in Table 6.2 is that the proportion of women widowed is greater than the corresponding proportion of men, while the proportion of single men is greater than the corresponding proportion of women. The sex difference in the relative share of those widowed could be caused by the high death rate among middle aged men. As of 2000, the death rate of men in their 40s is higher than that of women by more than three times: the death rate for men in their early 40s is 3.81 while the rate for women of that age group is 1.2; the death rate for men in their late 40s is 5.7 while the rate for women is 1.9 (KNSO, 2001e, 2002b).

III. Single Men and Women

The proportion of single women, as shown in Table 6.2 fluctuated between 27.6 percent and 25.1 percent between 1960 and 2000. The corresponding proportion of men also fluctuated between 41.0 percent and 35.1 percent in the same period.

Further examination of single men and women by age reveals that the share of these groups of people is more pronounced in younger groups. Table 6.3 presents the number of single people and the proportion of singles by sex and age for the last three decades. As shown in the table, between 1990 and 2000 the proportion increased by 18.0 percent points for women aged 25-29, and by 5.4 percent points for women aged 30-34. In the same period, the proportion of singles for men aged 30-34 increased by 14.2 percent points; the proportion for men aged 35-39, by 6.8 percent points. Also, for those aged 45-49 who are very likely to remain single throughout their lives, the proportion has increased over time. As of 2000, the proportion of singles for this age group was 2.4 percent for men and 1.7 percent for women.

Attention should be paid to the increase in single men and women in Korea. In particular, two aspects of such an increase deserve special attention. One is

Table 6.3 Proportion of Singles by Sex and Age, 1970-2000

(Unit: 1,000 persons, %)

Marital Status		1970	1980	1990	2000
Women	Single People	2,303	3,601	4,517	4,617
	15-19	97.1	98.2	99.5	99.3
	20-24	57.2	66.1	80.5	89.1
	25-29	9.7	14.1	22.1	40.1
	30-34	1.4	2.7	5.3	10.7
	35-39	0.4	1.0	2.4	4.3
	40-44	0.2	0.5	1.1	2.6
	45-49	0.0	0.3	0.6	1.7
Men	Single People	3,335	4,933	6,114	6,317
	15-19	99.7	99.8	99.9	99.4
	20-24	92.6	93.1	96.4	97.5
	25-29	43.4	45.2	57.3	71.0
	30-34	6.4	7.3	13.9	28.1
	35-39	1.2	1.7	3.8	10.6
	40-44	0.4	0.7	1.5	4.9
	45-49	0.2	0.4	0.8	2.4

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

that the proportion of singles is higher among men than among women. The other aspect is that, despite the higher proportion of single males, the increase in the proportion of singles at ages suitable for marriage is occurring faster among women than among men.

The rise of age at marriage has been observed in many countries since World War II. In general, the increase in the proportion of singles is attributed to demographic factors including an unbalance of men and women at ages suitable for marriage, the improvement in educational attainment, and regional factors (Mason et al., 1998).

The sex unbalance at ages suitable for marriage in Korea is caused mainly by a preference for sons. The male excess at ages suitable for marriage, which has started to become conspicuous since 1990, is forecasted to be at its greatest in 2010. Table 6.4 provides an estimate of the number of men and women who will be at an age suitable for marriage.

In Table 6.4, the age suitable for marriage is assumed to be 26-30 for men and 23-27 for women, given that over the last three decades the average age at marriage has been 27.1-29.3 for men and 23.3-26.5 for women. The last

Table 6.4 Number of Marriage-Eligible Men and Women, 1970-2020

Year	Number of Women Aged 23-27 (a)	Number of Men Aged 26-30 (b)	Sex Ratio $\{(b)/(a)\} * 100$
1970	1,112,478	1,119,511	100.6
1980	1,732,522	1,439,994	83.1
1990	2,076,567	2,210,165	106.4
2000	1,826,244	2,111,766	115.6
2010	1,611,600	2,043,324	126.8
2015	1,454,669	1,678,757	115.4
2020	1,588,928	1,793,194	112.9

Source: EPB/KNSO (*Population and Housing Census Report*, various years); The data for 2010, 2015 and 2020 are from the KNSO (2001a).

column indicates the sex ratio of men relative to 100 women at ages suitable for marriage. This sex ratio was 100.6 men per 100 women in 1970 but dropped to 83.1 in 1980. After that, the sex ratio recovered in 1990 and reached 115.6 in 2000.

According to the projection provided by the KNSO, the sex ratio at ages eligible for marriage will reach a peak of 126.8 in 2010 and then go down somewhat after that. Thus, men will be in a disadvantageous position in the marriage market for the next 20 years. A strong preference for sons, resulting in a greater number of men in excess of women will produce a boomerang effect and make it more difficult for men to find spouses in the marriage market.

Eun (2002) reports that the age at marriage has been rising, especially since 1997, and points out important reasons why some young Koreans do not marry. With rapid changes in family values encompassing sexuality, marriage, children, divorce and remarriage, young people are raising questions about the necessity of marriage. In particular, since the nation wide economic crisis in 1997, the labor market has become more flexible. Employment practices guaranteeing jobs until the statutory retirement age have been disappearing. Instead, many workers have had to quit working before they reach retirement age. As the possibility for young men to secure jobs before marriage has decreased substantially, they have had to put off marriage. As a result, the age at marriage for men has increased. In turn, this has led to an increase in the proportion of singles among men.

Table 6.5 Proportion of Singles by Sex and Education, 2000

(Unit: %)

Educational Level	Women	Men
Middle school or lower	5.9	24.3
High school	30.2	38.6
College (University)	49.1	46.8
Graduate school or higher	39.7	19.0

Source:KNSO (2001j).

As for women, the difficulty they face in finding jobs is no less severe than that of men. Many jobs for women are unstable. The number of women with temporary jobs has increased at a faster rate than that of men. Unlike in the past, the possibility to secure a stable life through marriage has shrunk dramatically. Facing such a situation, women have come to postpone marriage, and hence the proportion of singles for them has risen.

Table 6.5 shows the proportion of singles for men and women by the level of educational attainment. According to this table, for women in 2000, singles made up 5.9 percent of those who had middle school or lower level of education, 30.2 percent of those who attended high school, 49.1 percent of those with a college degree, and 39.7 percent of those who have attended graduate school. In comparison, the proportion of single men was 24.3 percent for those who had middle school or a lower level of education, 38.6 percent for those who attended high school, 46.8 percent for those with a college degree, and 19.0 percent for those who attended graduate school.

These indicate that, compared to men, women with a high level of education are more likely to remain single. It may be related to general social conditions in which marriage is not necessary for women when and if they are financially independent.

Table 6.6 presents the proportion of single men and women aged 15 and over according to occupation in 2000. Among women, the proportion of singles is high for the group of specialist, technician and office workers. In particular, the proportion of single women is highest for clerks at 54.0 percent. It is followed by technicians and professionals. This is due to the fact that women in such occupations are less likely than those in other occupations to leave a job upon or

Table 6.6 Proportion of Singles by Occupation, 2000

(Unit: %)

Occupation	Women	Men
Legislators, senior officials & managers	13.1	4.1
Professionals	48.2	20.1
Technicians & associate professionals	48.9	21.2
Clerks	54.0	20.4
Service workers	16.0	22.8
Shop & market sales workers	17.2	17.8
Skilled agriculturalist & fishery workers	0.8	7.0
Factory & related trades workers	10.4	21.1
Plant & machine operators	18.3	19.4
Simple laborers	5.5	20.8

Source:KNSO (2001h, *Marriage and Divorce Statistics*, Raw data for 2000).

after marriage. It can be interpreted that, when there is a choice between work and marriage, women in professional occupations tend to choose work over marriage.

For men, the proportion of singles for service workers is as high as the proportion for professionals. The lowest percentage is found for legislators, senior officials and managers. Compared to the case of women, the percentage for men is more evenly distributed across different types of occupations.

IV. Marriage and Remarriage

1. Age at First Marriage

The average age at first marriage over the last three decades shows a continuous increase for both men and women. For men, the average age at first marriage has increased from 26.7 years in 1972 to 29.6 years in 2000. For women, the corresponding age has increased from 22.6 years to 26.8 years in the same period. A remarkable rise in age at first marriage has been reported in recent years, especially since 1998 (KNSO, 2002b, 2003a).

The trend toward late marriage as well as less marriage has been brought about by a confluence of interrelated economic, social and cultural changes. These changes include massive educational gains by women, a rapid increase in

Table 6.7 Average Age at First Marriage by Education, 1990 and 2000

Education	1990		2000	
	Women	Men	Women	Men
Total	24.8	27.8	26.5	29.3
None	30.7	35.9	35.2	38.9
Elementary	26.3	30.0	33.3	35.6
Secondary	24.1	27.4	26.1	29.0
University or higher	25.4	27.9	26.6	29.1

Source:KNSO (1991, 2001h, *Marriage and Divorce Statistics*, Raw data for 1990 and 2000).

female labor force participation, major changes in the structure and function of the marriage market, an extraordinary increase in premarital sex, and far-reaching changes in marriage and family values (Retherford et al., 2002).

Table 6.7 presents the average age at first marriage according to level of education in 1990 and 2000. The greatest increase in age at first marriage for both men and women can be found among those who had never attended school or had attended elementary school, although this accounts for a very small proportion (around 0.1 percent and 1 percent, respectively) of the total population. The average age at first marriage for women without formal education and that for women who have attended elementary school was 30.7 years and 26.3 years respectively in 1990. In a decade, each of these ages increased to 35.2 years and 33.3 years. A similar trend is also observed for men. The average age at first marriage for both men and women who had attended college or university is slightly lower than those who had attended middle or high school.

Labor force participation seems to have had more influence on the age at first marriage of women than that of men. In general, women engaged in economic activities tend to postpone their marriage. Table 6.8 shows the age at first marriage for women according to the types of occupation in 1990 and 2000. As shown in this table, the average age at first marriage in 1990 was 26.6 years for women in professional occupations and 25.6 years for high ranking officials. For women working on farms or at factories, the average age at first marriage is the lowest. The average age at first marriage for housewives was 24.2 years, which is younger than the unemployed by one year. A similar pattern was found

Table 6.8 Average Age at First Marriage of Women by Occupation, 1990 and 2000

Occupation	1990	2000
Legislators, senior officials & managers	25.6	27.5
Professionals	26.6	26.8
Technicians & associate professionals	24.4	26.6
Clerks	25.1	26.0
Service workers	24.7	26.3
Skilled agriculturalist & fishery workers	23.8	27.1
Factory, craft & related trades workers	23.4	25.1
Plant & machine operators	-	24.4
Simple laborers	-	25.3
Housewives	24.2	25.8
Military personnel	25.3	25.3
Unemployed	25.1	25.9

Source:KNSO (1991, 2001h, *Marriage and Divorce Statistics*, Raw data for 1990 and 2000).

in 2000.

2. Number and Rate of Remarriage

Table 6.9 presents the number of people who have remarried, the remarriage rate and the average age at remarriage by sex between 1980 and 2001. In this table, the remarriage rate is calculated by dividing the number of remarriages by the number of incidences of marriage in a given year. It clearly shows that incidences of remarriage have been increasing over time. Also, the ratio relative to the total number of marriages is also increasing. Along with the increase in remarriage in absolute as well as relative terms, the age at

Table 6.9 Remarriage by Sex, 1980-2001

Year	Remarriage (No. of cases)		Ratio of Remarriage/Marriage (per 100 marriages)		Age at Remarriage	
	Women	Men	Women	Men	Women	Men
1980	16,367	25,579	4.1	6.4	-	-
1990	28,153	33,348	7.1	8.4	34.0	38.9
2000	48,324	43,617	14.5	13.1	37.5	42.1
2001	52,500	46,900	16.4	14.7	37.6	42.1

Source:KNSO (*Marriage and Divorce Statistics*, Raw data for various years).

remarriage has risen.

While such changes are found for both men and women, sex differences in remarriage can also be found. In 1980 and 1990 the amount and rate of remarriage was greater among men than among women. However, since 2000, these figures appear to be greater among women than among men. As of 2000, among women there were 48,324 cases of remarriage reported; among men, 43,617 cases were reported. Correspondingly, the rate of remarriage for women was higher than that for men by 1.4 percentage points in 2000.

V. Divorce

1. Changes in the Divorce Rate

Table 6.10 shows divorce rates per 1,000 persons between 1970 and 2000. As shown in this table, the divorce rate increased from 2.1 in 1970 to 10.9 in 2000. As of 2000, the divorce rate for men aged 15-24 was 34.5 while the corresponding rate for women was 32.9. As age advances, the divorce rate declines. Of those aged 60 or over in 2000, the divorce rate was 1.8 for men and 1.0 for women.

If we look at the speed of changes in the divorce rate between 1970 and 2000, a sharp increase can be found for the youngest group (those aged 15-24) and for the middle aged group (those aged 45-59). The specific pattern of change at each age group is different for men and women. For women aged 15-24, the divorce rate has increased by about eight times. The amount of change for this age group of women is somewhat greater than that for the corresponding age of men.

For women aged 25-29, the change in the divorce rate is smallest. A greater amount of change in the divorce rate for women between 1970 and 2000 can be observed as age advances from the late 20s. The greatest change in the divorce rate for women can be found among those aged 55-59, who shows an enormous increase of 12.5 times. Then the change in the divorce rate for women becomes somewhat smaller again among those aged 60 or over.

Table 6.10 Divorce Rate by Age Group and Its Change, 1970-2000

(Unit: divorce per 1,000 persons, %)

Year	Women					Men				
	1970	1980	1990	2000	Rate of Change	1970	1980	1990	2000	Rate of Change
All Ages	2.1	3.3	4.8	10.9	419.0	2.1	3.3	4.8	10.9	419.0
15 - 24	3.7	5.7	11.4	32.9	789.2	4.3	6.5	12.9	34.5	702.3
25 - 29	3.9	5.5	8.1	17.6	351.3	3.7	5.1	8.2	19.7	432.4
30 - 34	2.7	5.0	7.1	15.3	466.7	3.4	5.3	7.2	15.7	361.8
35 - 39	1.8	3.3	5.4	14.4	700.0	2.4	4.7	6.6	15.1	529.2
40 - 44	1.1	2.0	3.3	11.9	981.8	2.0	2.9	5.2	13.8	590.0
45 - 49	0.7	1.1	2.1	7.5	971.4	1.4	2.0	3.5	10.8	671.4
50 - 54	0.4	0.7	1.0	4.5	1,025.0	0.9	1.4	1.8	7.4	722.2
55 - 59	0.2	0.5	0.7	2.7	1,250.0	0.6	1.0	1.1	4.7	683.3
60 or over	0.1	0.2	0.3	1.0	900.0	0.3	0.6	0.7	1.8	500.0

Note: Rate of Change = $\{(Divorce\ Rate\ in\ 2000 - Divorce\ Rate\ in\ 1970) / Divorce\ Rate\ in\ 1970\} * 100$.

Source: KNSO (*Population and Housing Census Report and Annual Report on Marriage and Divorce Statistics*, various years. Cited from K.A. Park (2000: 19)).

For men, the increase in the divorce rate between 1970 and 2000 also depends on age. A great increase in the divorce rate for men is found among those aged 15-24. As age advances, the increase in the divorce rate fluctuates. Compared to the change in the divorce rate for women, the change in the rate for men is less conspicuous.

The rapid increase in the divorce rate among men and women in their 50s seems to be related to the trend where married couples get divorced after putting up with the hardship of living in or with a husband's family, the infidelity of the spouse (mainly, of the husband), or personality differences between the spouses until their children grow up. In particular, the likelihood of such divorces seems to have been affected by the amendment of the Family Law in 1990 which permits joint ownership of a couple's property and joint rights to child custody. This legal change has been particularly helpful for women who are trying to find an independent life through the break up of an unhappy marital life (W.S. Byun, 1995).

2. Divorce by Duration of Marriage

Official statistics show that the majority of self-reported reasons for divorce

has been incompatibility between spouses. Disagreements or conflicts with other family members including problems between women and their mother-in-law still account for a substantial proportion of the reasons for divorce, although the proportion has been declining. This indicates that the main source of divorce has changed from problems involving family members other than the husband, especially the mother-in-law, to problems between spouses.

In addition, financial problems have emerged as an important cause of tensions and conflict between spouses. More specifically, financial problems as a self-reported reason for divorce accounted for 3.6 percent of total divorces in 1980. The share of financial problems as a reason for divorce decreased to 2.0 percent in 1990, but jumped to 10.7 percent in 2000. In particular, in 1998 right after Korea experienced a nationwide economic crisis, financial problems as a reason for divorce accounted for 6.6 percent of total divorces. This is an increase of 2.4 percentage points, compared to the previous year (KWDI, 2001).

3. Reasons for Divorce

Table 6.11 shows the reasons for divorce by duration of marriage in 2000. As shown in this table, financial problems as a reason for divorce can be more frequently found among those married for 15 years or over than among those married less than 15 years. This is understood to mean that the latent conflict between spouses who have lived together for a long period of time developed into the break up of the marriage, triggered by recent financial problems.

The other main reasons for divorce include the infidelity of the spouse, mental and physical abuse, and incompatibility. According to Table 6.11, the share of divorce due to infidelity becomes greater as the duration of marriage increases. For couples married for 15 years or longer, infidelity of the spouse as a reason for divorce accounts for 9.4 percent. Mental and physical abuse, although it is not frequently reported as a reason for divorce, is greatest among those married for long periods.

The most frequently reported reason for divorce across different durations of marriage is incompatibility between spouses. Unlike infidelity or mental and physical abuse, this particular reason is more frequently found among those

Table 6.11 Self-Reported Reasons for Divorce by Duration of Marriage, 2000

(Unit: %)

Reasons for Divorce	Duration of Marriage			
	0-4 Years	5-9 Years	10-14 Years	15 Years or Longer
Infidelity of spouse	6.2	8.1 ^{***}	9.1	9.4
Mental & physical abuse	4.2	3.9	4.6	4.8
Incompatibility	43.3	41.4	40.4	37.7
Family disagreement	22.2	21.6	21.5	22.8
Health	1.2	0.7	0.7	0.9
Financial problems	8.2	11.0	11.5	12.3
Others	14.8	13.2	12.3	12.1
Total	100.0	100.0	100.0	100.0

Source: KNSO (2001h, *Marriage and Divorce Statistics*, Raw data for 2000).

married for a short duration.

VI. Conclusion

This chapter has reviewed the current status and changes over time for various types of marital status: single, first marriage, remarriage, and divorce. The following are some suggestions for policies related to women and the family based on demographic changes.

First, along with the rise of age at marriage, the rate of marriage has been decreasing. This, of course, has various aspects. For instance, the decrease in marriage could be related to the increase of cohabitation as well as the increase in the number of single people. Men in the coming twenty years are expected to be in a substantially disadvantageous position in the marriage market. Such an expectation is based on a sex ratio imbalance among young children these days. This is in turn an outcome of the strong preference for sons. The decrease in the marriage rate seems to have contributed to a low fertility rate. Especially considering that the total fertility rate was 1.17 as of 2002, social arrangements and policies to encourage marriage and having children are needed.

Second, together with the increase in divorce, the remarriage rate is increasing rapidly. Remarriage after divorce usually requires mental and financial

adaptation, particularly for children. Recently, as incidences of remarriage for women with children are increasing, there is an urgent need to amend the Family Registration Law. Under the current Family Registration Law, the children of remarried woman must keep the last name of the former husband. This causes severe problems for the children.

Third, with the increase in the divorce rate, financial problems as a reason for divorce have increased dramatically, in particular since the economic crisis in 1997. This suggests that financial problems trigger the divorce of couples with latent conflicts accumulated over the course of their marriage. Since 1997, there has been an increase in divorce among couples who have been married for a long time. However, changes in family and marriage values have been taking place over a long period of time, and therefore they should not be seen as an immediate response to the economic crisis of recent years.

Reasons for divorce are also different according to the duration of marriage. For youth, social education programs to enhance the understanding of spouses and married life should be introduced. For married couples, social programs to prevent domestic violence and education on sex roles are recommended.

Last, cohabitation is on the increase. In many cases, those involved in cohabitation live together to get confidence in their partner as a spouse. In the West, cohabitation has already been established and acknowledged as an alternative type of formal marriage. In countries such as France and the United States, cohabitation is socially acknowledged as a new type of marital life and presented in reports of official statistics. For men and women at an age suitable for marriage, the legal status of marriage can be an important indicator for the stability of marital life. Although cohabitation is not accounted for in official statistics in Korea, it is undeniable that cohabitation is emerging as a new type of marital life. Thus, official statistics should pay more attention to this trend and attempt to capture it in statistics.

HOUSEHOLD AND FAMILY

Cheong-Seok Kim

I. Introduction

This chapter approaches household and family structure not only by using the unit of the household but also from the perspective of the individual. The analysis based on household unit relies mainly on reports provided by the Korea National Statistical Office (KNSO) for the years 1980-2000. For the analysis of the household from the perspective of the individual, samples were used from the micro-level census files for the same period. In particular, this analysis focuses on the noticeable increase in households containing one person only or a couple only, living arrangements of children and the elderly, and female-headed households and the characteristics of the female household head.

Families in Korea today continue to be the foundation of life and the behavior of individuals and function as the basic unit of society. At the same time, they have been undergoing tremendous changes in structures, patterns and family relations (Y.S. Kim and C.S. Kim, 2001; Ahn, 1997; N.J. Han, 1999). The rapidity of changes in the family and the direction that the changes are taking has become urgent and serious challenges to Korean society (Lee and Yang, 1999; Yim and Janelli, 2002; Jeon, 2000). This chapter aims to provide

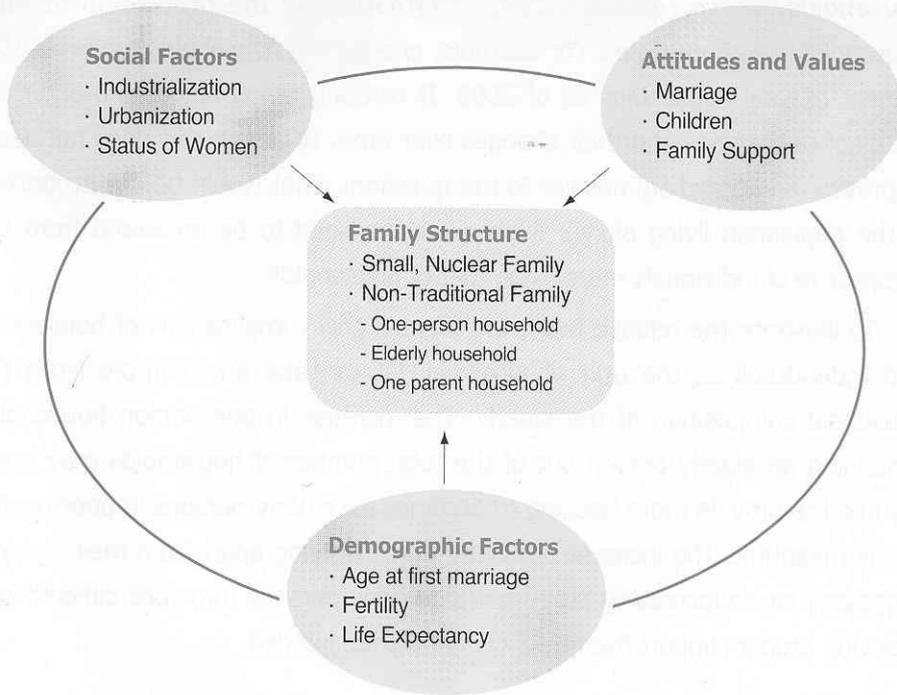
baseline materials helpful for further studies and policy planning in family related areas, and to investigate the patterns and changes in the family in the last two decades.

Among the various topics related to family, this research focuses on family structure. Compared to other topics including family functions, relations between family members, and attitudes regarding family formation, this topic is more feasible for an empirical analysis. In addition, since family structure is closely related to other aspects of family, its analysis still lends significant grounds for a comprehensive picture of the family in Korea.

Over the last several decades, numerous studies on the family in Korea have been conducted. According to a survey of these previous studies (Kim and Song, 2000a), social forces promoting changes in the family can be categorized into three groups: social factors, demographic factors and changes in values and attitudes toward family. Figure 7.1 presents how these three factors and the components of each affect family structure. In this figure, the three factors also exert influence on each other. For instance, changes in the status of women are closely related to changes in attitudes toward marriage and an increase in age at marriage. Changes in the family that the three factors bring about can be summarized as a shift toward a small, nuclear family and an increase in non-typical family and living arrangements.

The expansion of the non-typical family and the changes in living arrangements has drawn much attention from researchers on family (Kim and Song, 2000b, 2000c). Some argue that these changes are deviant from a normal family structure and need to be reformed for the proper function of the family. Others suggest that they are an indication of the diversification of family types and social effort should be made to accept and help alternative family or living arrangements. In Korea where rapid societal changes, termed "compressive modernization" by K.S. Chang (2000), have been progressing, the society is experiencing both family dissolution and the emergence of new alternative family types. To discern whether the expansion of the non-typical family and changing living arrangements indicate the erosion of the normal family or the expression of new family living is beyond the scope of this research. Nonetheless, it is hoped that this study will provide materials

Figure 7.1 Factors of Family Change



necessary for advancing empirical research on this issue.

Studies on family structure commonly deal with household structure. Obviously, the concept of family is different from that of household (UN, 1998). The key difference between family and household lies in the fact that the members of a family should be related to each other through marriage, birth or adoption but the members of a household need not be related. Another difference is that a household may consist of just one person, whereas a family must contain at least two persons. In Korea the majority of household members are in a family relationship (T.H. Kwon and Y.J. Park, 1995). Thus, the analysis of household in Korea can produce practical knowledge on family structure. A valuable source for this has been census data with information on the family relationship of household members to the head (T.H. Kwon and D.S. Kim, 2002).

Empirical research on family structure based on household composition needs to be cautious about the unit of analysis. As will be discussed in more detail, most published reports from the government convey information on the

types and characteristics of households, frequently those of the heads of households. These reports include information on the proportion of total households of various types. For example, one-person households make up 15.5 percent of total households as of 2000. It certainly helps to grasp the current status of households and their changes over time. However, this does not seem to provide an immediate answer to the question: what would be the proportion of the population living alone? Such questions need to be answered from the perspective of individuals rather than that of households.

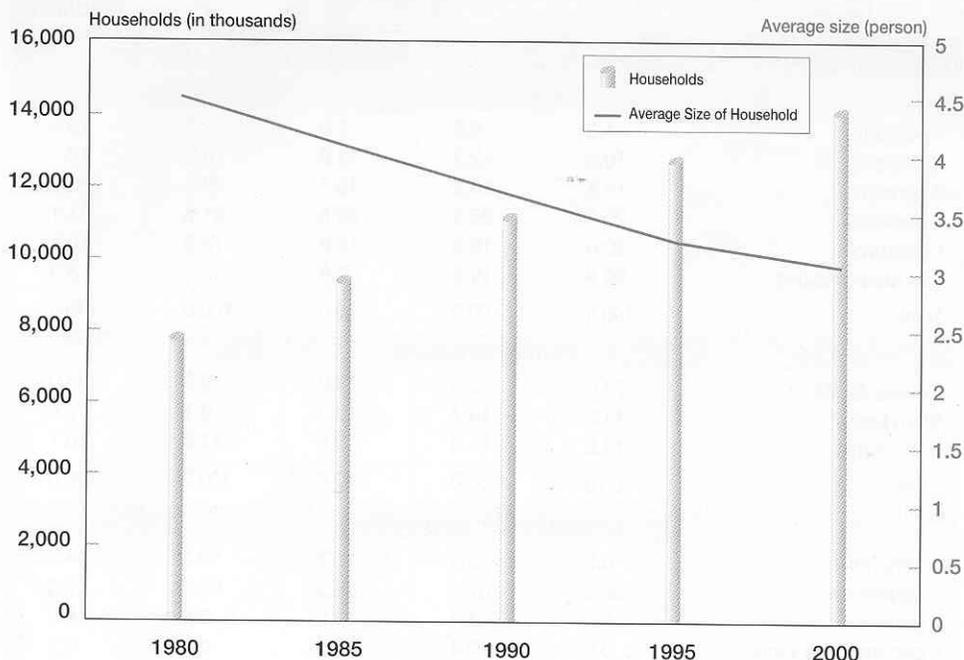
To illustrate the relative merit or different policy implications of households and individuals as the unit of analysis, let us take an example from the household composition of the elderly. The increase in one-person households containing an elderly person out of the total number of households may imply the need to provide more housing to accommodate elderly persons in poor health. In the meantime, the increase of elderly persons living apart from their children suggests that an increasing proportion of elderly persons may face difficulties in receiving proper support from their children when needed.

II. Changes in the Household: An Overview by Household Unit

This section overviews the changes in households based on published reports. Figure 7.2 graphs the number of total households and the average number of persons in a household from 1980 to 2000. In 1980 there were about 8.0 million households housing 4.5 persons per household. Two decades later, the households increased to 14.3 million and contained on average 3.1 persons. The decline in household size is attributable to two demographic facts. One is that the number of households has increased at a faster rate than the population. The other fact is the recent fertility decline.

Table 7.1 shows the distribution of households using various criteria for the years 1980-2000. The first panel of the table provides more detailed information on the size of the household in a given year. As shown in this panel, it is clear that the proportion of households containing less than five persons, particularly

Figure 7.2 Number and Average Size of Household, 1980-2000



Sources : KNSO (*Population and Housing Census Report, various years*).

households containing one person has steadily increased. In contrast, the proportion of households containing six persons or more has sharply declined from 29.9 percent in 1980 to 3.3 percent in 2000.

Decline in household size has been accompanied by a trend toward the nuclear family. The second panel and the third panel in Table 7.1 present the distribution of households according to family structure and generational composition, respectively. The proportion of households containing a nuclear family has increased from 74.0 percent in 1980 to 82.0 percent in 2000. Compared to changes of household size, changes in family structure appear less distinctive. This is partly because the distribution of households according to family structure excludes one-person households, which have drastically increased between 1980 and 2000. With respect to generational composition, the proportion of households with one generation has increased from 8.3 percent in 1980 to 14.2 percent in 2000. Correspondingly, the proportion of households with three generations has sharply declined from 16.5 percent to 8.2 percent

Table 7.1 Composition of Households, 1980-2000

(Unit:%)

	1980	1985	1990	1995	2000
Household Size					
1 person	4.8	6.9	9.0	12.7	15.5
2 persons	10.5	12.3	13.8	16.9	19.1
3 persons	14.5	16.5	19.1	20.3	20.9
4 persons	20.3	25.3	29.5	31.7	31.1
5 persons	20.0	19.5	18.8	12.9	10.1
6 or more persons	29.9	19.5	9.8	5.5	3.3
Total	100.0	100.0	100.0	100.0	100.0
Family Structure					
Nuclear family	74.0	75.3	76.0	79.8	82.0
Stem family	11.2	10.7	10.3	9.1	7.9
Other types	14.8	14.0	13.8	11.2	10.1
Total	100.0	100.0	100.0	100.0	100.0
Generational Composition					
1 generation	8.3	9.6	10.7	12.7	14.2
2 generation	68.5	67.0	66.3	63.3	60.8
3 generation	16.5	14.4	12.2	9.8	8.2
4 generation or more	0.5	0.4	0.3	0.2	0.2
Other types	6.3	8.6	10.5	14.1	16.7
Total	100.0	100.0	100.0	100.0	100.0
Sex of Household Head					
Male-headed household	85.3	84.3	84.3	83.4	81.5
Female-headed household	14.7	15.7	15.7	16.6	18.5
Total	100.0	100.0	100.0	100.0	100.0

Source: KNSO (*Population and Housing Census Report*, various years).

between 1980 and 2000. The prevalence of nuclear family households and the substantial increase of one generation households have been brought about mainly by the increase in the number of elderly living with a spouse only (T.H. Kwon and Y.J. Park, 1995).

Along with the decline in household size and the nuclearization of the family household, an increase in the proportion of households headed by a female is noticeable. The last panel in Table 7.1 shows that the proportion of households headed by a female has increased from 14.7 percent in 1980 to 18.5 percent in 2000. Head of a household in the Korean census refers to the person in the household who is acknowledged as such by other members. The household head

usually represents the household and, in the case of the family household, the person takes chief responsibility for the economic support of the household (T.H. Kwon and Y.J. Park, 1995). In most cases, a man is identified as the head of household even if a female household member provides or shares the economic support of the household. The increase of female-headed households, despite such beliefs, reveals significant changes in family relations in the household. Most of these female-headed households are formed by single, widowed or divorced women.

III. Household Composition of Individuals

This section, using samples from micro-census files collected from 1980 to 2000, addresses the issue of household composition in terms of population: the number and proportion of people living in each type of household. The population analyzed in the current section as well as the remaining sections is limited to those residing in ordinary households. The residents of institutional households represent social policy concerns of importance, but still account for quite a small proportion of total population. According to the 2000 census, there are about 510 thousand persons in institutional households comprising 1.1 percent of the total population. In addition, they are considered difficult to accurately survey in the census.

The types of household considered in this section are categorized into five groups: one-person households, households containing a married couple (without parents or children), two generational households, three or more generational households, and other types of household that do not belong to any of the above. Of these five groups, our discussion focuses on the first two. Since the analysis deals with the relative share of population residing in ordinary households, the description of the proportion of each type of household would result in redundant work. As reviewed in the previous section, the most distinctive feature of household change is the increase of one-person households and households containing a married couple only. Our understanding of such trends would be enhanced through an analysis of the population of these types

of households and their changes over time.

This section first presents the distribution of all the residents in ordinary households across the five categories of household type. It is followed by the distribution of residents aged 15 or over for those currently unmarried and for those currently married. Since it is obvious that single, widowed or divorced persons cannot form a household whether couples reside, the analysis will concentrate on whether they live alone or live with other family members. It is very unlikely for married couples in Korea to form separate households, though there are some incidences where they live temporarily apart for jobs or other reasons. Thus, for married persons, the focus will be on whether they live with other family members or not.

1. Households of Ordinary Household Members

Table 7.2 shows the distribution of ordinary household members (hereafter household members) in all ages across the various types of households in 1980, 1990, and 2000. According to this table, the proportions of residents in one-person households and in households containing couples only have steadily increased from 1980 to 2000. Correspondingly, the proportion of residents in three or more generational households has steadily declined in that period. In 1980, about one person out of one hundred lived alone. However, twenty years later, the proportion of population in one-person households increased to 5 percent. Likewise, the proportion of those living with a spouse only has increased 3.3 percent in 1980 to 8.8 percent in 2000.

The distribution of residents across various types of households does not reveal noticeable differences between males and females, except that the proportion living alone is somewhat greater among women than among men whereas the proportion of those living with a spouse only is greater among men than among women. In terms of the place of residence, the proportion living alone for urban and rural areas was almost identical in 1980. However, since 1990 this proportion has become greater in rural areas than in urban areas.

A similar pattern is found for the proportion of those living with a spouse only. This proportion did not show any substantial difference between urban and

Table 7.2 Distribution of Ordinary Household Member by Sex and Place of Residence, 1980-2000

(Unit: %)

Year	Household Type	Total	Sex		Place	
			Male	Female	Urban	Rural
1980	% in one-person households	1.1	0.8	1.5	1.2	1.1
	% in couple-only households	3.2	3.2	3.1	3.1	3.2
	% in two generation households	69.1	70.7	67.6	73.3	63.6
	% in three or more generation households	24.3	23.2	25.4	19.1	31.2
	% in others	2.3	2.2	2.3	3.3	0.9
	Total	100.0	100.0	100.0	100.0	100.0
1990	% in one-person households	2.6	2.2	3.0	2.5	3.0
	% in couple-only households	5.2	5.3	5.1	4.3	8.0
	% in two generation households	71.0	72.6	69.6	74.3	61.5
	% in three or more generation households	18.7	17.6	19.8	16.2	26.3
	% in others	2.4	2.3	2.4	2.8	1.2
	Total	100.0	100.0	100.0	100.0	100.0
2000	% in one-person households	5.1	4.2	5.9	4.6	6.8
	% in couple-only households	8.8	9.0	8.6	6.8	16.4
	% in two generation households	70.4	71.9	68.9	73.9	56.8
	% in three or more generation households	13.6	12.8	14.5	12.4	18.5
	% in others	2.1	2.1	2.1	2.3	1.4
	Total	100.0	100.0	100.0	100.0	100.0

Source: KNSO (Raw data from a two percent sample from censuses of each year).

rural areas in 1980, but has become greater in rural areas than in urban ones. Faster growth in the proportion of those living alone or with a spouse only in rural areas reflects the out migration of younger people and has resulted in an increase of the elderly living apart from their children in rural areas (T.H. Kwon and Y.J. Park, 1995; T.H. Kim, 2001).

Table 7.3 presents the distribution of household members across different types of household by age. As shown in this table, the proportion of those living alone has increased over time in all age groups. Also, the proportion living with a spouse only has increased in all ages except for ages 15-24 which showed a decline from 3.5 percent in 1980 to 1.9 percent in 2000. The reason for the exception of this age group from the general trend is due to an increase in age at marriage.

The distribution of residents by age provides significant information helpful to understand the changes in family structure over the course of life (Jo, 2000).

Table 7.3 Distribution of Ordinary Household Member by Age, 1980- 2000

(Unit: %)

Year	Household Types	Age							
		Total	Under 15	15-24	25-34	35-44	45-54	55-64	65+
1980	% in one-person households	1.1	0.0	1.5	1.4	0.8	1.6	3.6	4.8
	% in couple-only households	3.2	0.1	3.5	6.5	1.6	3.9	9.5	10.1
	% in two generation households	69.1	75.9	67.2	68.7	76.1	72.1	50.1	21.3
	% in three or more generation households	24.3	23.4	20.0	21.2	21.0	21.9	36.0	63.1
	% in others	2.3	0.5	7.9	2.2	0.5	0.5	0.7	0.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1990	% in one-person households	2.6	0.0	2.4	3.8	1.9	2.4	6.0	9.5
	% in couple-only households	5.2	0.1	2.8	8.0	2.3	6.6	18.2	17.5
	% in two generation households	71.0	80.7	72.7	69.8	78.8	74.2	49.3	23.1
	% in three or more generation households	18.7	18.8	14.3	15.1	16.3	16.3	25.8	49.0
	% in others	2.4	0.4	7.8	3.2	0.7	0.6	0.7	0.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2000	% in one-person households	5.1	0.0	3.7	7.0	4.1	4.8	8.2	16.8
	% in couple-only households	8.8	0.1	1.9	9.6	3.9	11.6	28.6	29.2
	% in two generation households	70.4	85.2	76.7	68.5	79.4	71.8	47.4	23.3
	% in three or more generation households	13.6	14.4	11.1	10.6	11.6	11.1	15.2	29.9
	% in others	2.1	0.2	6.5	4.3	0.9	0.7	0.6	0.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: KNSO (Raw data from a two percent sample from censuses of each year).

This can be illustrated by the case of the year 2000 when the proportion of those living alone or with a spouse only was greater than in any other year.

The majority of children under age 15 live with their parents, and some of the households where the children live include grandparents. When they reach age 15-24, some leave their parental home for education and job-related reasons, building separate households. The likelihood that a young person leaves their parental home becomes greater as they grow older. It reaches a peak at age 24-35, which covers the common age at marriage. Many people at this age build up their own homes through marriage.

Before the age of 35-44, most people get married and form their own

households. Many persons aged 35-44 have children and live in two generational households. Correspondingly, the proportion of those living alone at age 35-44 is substantially lower than any other ages of adulthood. Many middle aged persons from age 45-54 live with a spouse only or alone, as the children have grown up and leave. This "empty nest" continues as parents get older.

The proportion of those living alone or with a spouse only is smaller among those in their late 30s and early 40s than among adults of other ages. This pattern becomes more distinctive over time. The increase in the proportion of those living alone for the young and the old has different implications. Considering that the migration of youth from rural to urban areas has slowed down in recent years, the growth in living alone for young people has been mainly attributed to a steady increase in age at marriage and migration between or within cities (T.H. Kwon and Y.J. Park, 1995).

The extent to which young adults form one-person households may be closely related to their attitudes toward marriage. Various social surveys report that young people tend to consider marriage as a matter of choice rather than a requirement in their lives (S.K. Kim, 2000a, 2000b). Further research is required to make reasonable predictions on whether marriage will be as universal in the future as it has been. Should the research results tend to be against universal marriage, one-person households among the young people might not be a transitory phenomena of the young. However, strong evidence for the disappearance of universal marriage has not yet been found: at present, the majority of young people still get married when they reach a certain age. Thus, living alone for young people can be understood as a temporary living arrangements at a certain stage of life.

The proportion of those living alone among older people has been greater for those aged 65 or over than for those aged 54-64. Also, over time the proportion of the elderly living alone has rapidly increased. If living alone for the elderly is not a transitory phase of their life as in the case of younger adults, but continues until or near the end of their lives, the elderly are very likely to confront serious problems and difficulty in meeting their needs. This makes necessary the urgent development of social policies for the elderly. Especially needed are social arrangements for elderly persons in rural areas where young

Table 7.4 Proportion of Currently Unmarried Persons Living Alone by Sex, Place of Residence and Marital Status, 1980-2000

(Unit: %)

	1980	1985	1990	1995	2000
Total	3.7	5.4	8.0	12.3	15.6
Sex					
Male	2.6	4.1	6.8	10.7	13.2
Female	4.7	6.6	9.1	13.5	17.5
Place of Residence					
Urban	3.6	5.3	7.7	11.1	14.0
Rural	3.8	5.6	9.1	16.8	22.2
Marital Status					
Single	2.3	3.7	5.5	8.3	10.1
Widowed	8.3	11.5	16.4	23.9	30.6
Divorced	16.8	20.8	26.1	30.1	32.2

Source: KNSO (Raw data from a two percent sample from censuses of each year).

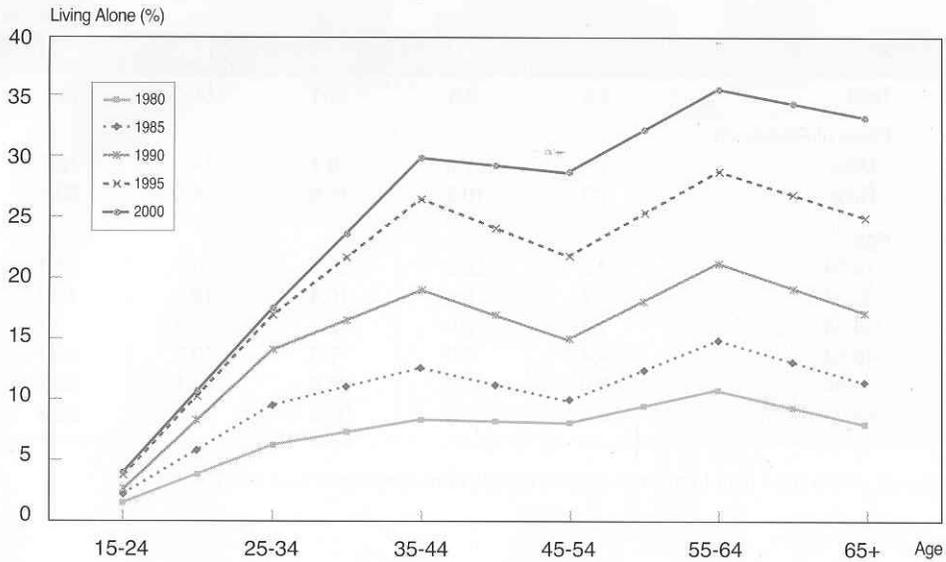
adults are rare as a result of out-migration and for elderly women who outlive their spouses by a substantial number of years.

2. One-Person Households among Unmarried Persons

While the above analysis refers to the total population in ordinary households, this section deals with unmarried persons aged 15 or over. Table 7.4 presents the proportion of those living alone for this segment of the population by sex, place of residence and marital status. Compared to Table 7.2 and Table 7.3, which did not consider age and the presence of a spouse, this table shows more distinctive differences in the tendencies of those living alone according to sex, place of residence and/or marital status. In terms of sex, the proportion living alone has been substantially greater among women than among men. The sex differential has increased over time. This is attributable to the difference in remarriage rates between men and women, with women having a lower rate.

Urban-rural differences in the proportion of unmarried persons living alone was not noticeable in 1980 and 1985, but since 1990 it has widened. As of 2000, 14.0 percent of unmarried persons in urban areas live alone while 22.2 percent of unmarried persons in rural areas do so. The proportion of those living alone also varies according to the specific reasons for being unmarried. For each year

Figure 7.3 Proportion of Currently Unmarried Persons Living Alone by Age, 1980-2000



Source: KNSO (Raw data from a two percent sample from censuses of each year).

the proportion living alone is greatest among divorced persons, followed by widowed persons and then by single persons. However, the fastest increase in living alone occurred for single persons. Of the single persons, the proportion living alone was 2.3 percent in 1980, but increased to 10.1 percent in 2000.

Figure 7.3 graphs the proportion of unmarried persons living alone by age. According to this figure, the proportion of those living alone has increased at all ages over time. The increase in this proportion is most pronounced at age 65 or over where widowed persons are concentrated. Also, despite some differences between the years of observation, the proportion of those living alone increases as age advances to 55-64 but slightly decreases after then. The slight decrease at the age of 65 or over reflects the facts that some widowed elderly persons join their children.

3. Couple-Only Households among Married Persons

Table 7.5 shows the proportion of married persons aged 15 or over who live with a spouse only. According to this table, the proportion living with a spouse

Table 7.5 Proportion of Currently Married Persons Living with a Spouse Only by Place of Residence and Age, 1980-2000

(Unit: %)

	1980	1985	1990	1995	2000
Total	7.5	8.8	11.1	14.7	17.5
Place of Residence					
Urban	7.4	7.8	9.1	14.8	13.7
Rural	7.7	10.5	16.8	14.6	30.4
Age					
15-24	24.3	28.2	36.4	38.1	37.3
25-34	7.7	8.4	10.4	12.3	15.0
35-44	1.6	2.0	2.4	3.7	4.3
45-54	4.4	5.5	7.3	10.9	13.1
55-64	13.0	17.2	23.8	32.1	35.2
65+	22.0	27.2	36.5	50.0	55.8

Source: KNSO (Raw data from a two percent sample from censuses of each year).

only has rapidly increased from 7.5 percent in 1980 to 17.5 percent in 2000. In terms of urban and rural differences, there was not found to be any significant gap in 1980. However, since 1985 the proportion of those living with a spouse only has increased at a faster rate in rural areas than in urban areas. Such urban-rural differentials in the increase in the rate of those living with a spouse only as well as those for the increase in the rate of those living alone are attributable to a concentration of the elderly living apart from their children in rural areas. This interpretation is confirmed in the age patterns of those living with a spouse only.

Among married persons, the proportion of those living with a spouse only is relatively high among younger and older groups, but low in the age groups between these two. This natural progression reveals the transition involving the "empty nest" stage. The newly wed young couple form their own household and live with a spouse only until they have children. When the children are grown up, they leave the couple's home. And the couple again lives in households that contain the couple only. This pattern has become more distinctive over time.

IV. Living Arrangements of Children and the Elderly

This section deals with the living arrangements of children and the elderly. As children are dependent on their families for material needs and socialization, those interested in children and their well-being are concerned about the families where the children reside. The elderly, when they are in need of support due to poor health or a lack of economic resources, are dependent on their families for various types of support. Thus, the living arrangements of the elderly are of considerable importance to those who are concerned about the welfare of the elderly.

It should be noted that the current research limits its analysis to children and the elderly in ordinary households. The children and the elderly in institutional households are in a considerably worse situation than those in ordinary households and draw the special attention of the society. As reported in the mass media, a substantial number of families broke up during the national economic crisis in the late 1990s and many children and the elderly in these families were abandoned and sent to institutions.

This research, while sharing the view that these children and elderly persons are a significant and urgent social issue, will focus on those in ordinary households. As mentioned earlier, only a small proportion of the population resides in institutional households and many of them are considered difficult to survey accurately. Instead, only the family relations of children and the elderly in ordinary households will be considered.

1. Living Arrangements of Children

A number of studies on the families of children have been conducted in Korea. Some recent studies include Kong (2001), O.N. Kim (1999), S.C. Kim et al. (2001), S.H. Moon (1999), Oh (2001), and A.J. Lee (2000). As discussed in all of these studies, of special importance to the welfare of the children is whether they live with both parents or not, if they live with one parent, and whether the parent is the father or mother. It has also been pointed out that whether the children live or have ever lived with their grandparents and the

number of siblings they have is significant for socialization. In addition, children living with grandparents in the absence of parents have drawn much attention of those concerned about their well-being.

Table 7.6 provides a description of the living arrangements of children under age 15 in 1980, 1990 and 2000. It should be noted that the category, "living with both parents" in this table is derived by the presence of both parents in the household, not by the marital status of the parents. Cases where the mother or father is married but not reported to be living in the household is considered to be living with one parent. Such categorization is based on the belief that the actual presence of parents is more important than their marital status for the living environment of the children (Kim and Song, 2000b).

According to Table 7.6, the proportion of children living with both parents has not substantially changed, but has remained at 90 percent from 1980 to 2000. Correspondingly, the proportion of children in other types of living arrangements has remained at about 10 percent during these years. While some changes have occurred over time, the proportion of children living with their father only (in the absence of a mother) has been less than 2 percent; the proportion living with mother only (in the absence of a father), less than 6 percent; the proportion living without either parent, less than 5 percent. These figures suggest that most children live with both parents, but this refers only to children in ordinary households. If children in institutional households are included, the proportion living with parent(s) may become smaller than presented above. As the incidences where parents in the face of broken families leave their children in the care of institutions or other relatives (including grandparents) is increasing over time, the proportion of children living with neither parent may have indeed increased.

The proportion of children living with their grandparent(s) has steadily declined from 24.1 percent in 1980 to 15.3 percent in 2000. Thus, families where three generations live in the same household have become less common. The trend toward the nuclear family implies that children may lose the opportunity to strengthen their ties with their grandparents.

The loss of three generational households among children is accompanied by a decline in the number of brothers and sisters that children have. The

Table 7.6 Living Arrangements of Children under 15 by Place of Residence and Age, 1980-2000

	Total	Place of Residence		Age of Child		
		Urban	Rural	0-4	5-9	10-14
1980						
% living with both parents	89.0	88.8	89.2	93.2	90.0	84.4
% living with father only	1.1	1.0	1.2	0.5	1.1	1.6
% living with mother only	6.0	6.8	5.2	3.0	5.8	8.9
% living with no parents	3.9	3.4	4.5	3.3	3.1	5.2
% living with grandparents	24.1	17.9	31.4	26.4	23.8	22.5
Average number of children under 15	2.7	2.5	3.0	2.5	3.0	2.7
1990						
% living with both parents	91.4	92	89.3	95.4	92.1	87.4
% living with father only	1.6	1.5	2.0	0.6	1.6	2.4
% living with mother only	4.1	4.2	3.9	1.5	3.6	6.7
% living with no parents	2.9	2.3	4.8	2.5	2.7	3.5
% living with grandparents	19.7	16.0	31.5	19.8	20.1	19.2
Average number of children under 15	2.1	2.0	2.3	1.8	2.2	2.1
2000						
% living with both parents	91.2	91.6	89.4	94.5	91.5	87.6
% living with father only	2.0	1.9	2.6	1.0	2.0	3.1
% living with mother only	4.2	4.5	3.1	2.2	4.2	6.4
% living with no parents	2.5	2.0	4.9	2.3	2.4	2.9
% living with grandparents	15.3	12.9	26.0	15.5	15.1	15.5
Average number of children under 15	1.9	1.9	2.0	1.8	2.1	1.8

Source: KNSO (Raw data from a two percent sample from censuses of each year).

average number of children in households containing children under 15 has decreased from 2.7 persons in 1980 to 1.9 persons in 2000.

While most children in urban and rural areas live with both parents, some differences between areas have been found. The proportion of children living with neither parent has been greater among children in rural areas than those in urban ones. It can be speculated that parents in urban areas who are unable to care of their children may leave their children in the care of grandparents or other relatives in rural areas where the cost of living is comparatively low. Another noticeable difference is in the proportion of children living with a mother in the absence of a father. This proportion is greater among children in urban areas than among children in rural areas. It may be related to the fact that young mothers have better opportunities to find jobs and support their own family in urban areas than in rural ones.

The urban-rural differential in the proportion of children living with grandparents appears clear. From 1980 to 2000 this proportion has been consistently greater among children in rural areas than among children in urban ones, but has declined in both areas. In terms of the number of siblings, the average number of children continues to be greater in rural areas than in urban ones. This reflects the urban-rural differentials in fertility. However, as the average number of children has declined more rapidly in rural areas than in urban areas, the urban-rural differential has become negligible over time. All of these findings indicate that, compared to the children in urban areas, children in rural areas are more likely to live with grandparents and more siblings.

Some aspects of the living arrangements of the children depend on their age. The proportion of children living with both parents declines as the age of children increases, and this pattern is consistently found for 1980, 1990 and 2000. As of 2000, the proportion of those living with both parents for children under 5 was 94.5 percent; for children aged 5-9, 91.5 percent; for children aged 10-14, 87.6 percent. The decline in the proportion of children living with both parents with the increase in the age of the children is attributable to the increase in the likelihood that the children may experience the marital break up of their parents as they grow up.

2. Living Arrangements of the Elderly

For elderly persons, whether they live with their children or not has been an important issue in Korea where family members have provided support for elderly members and non-familial care services are limited. Such a family support system typically involves the coresidence of elderly parents with at least one child (Hashimoto et al., 1992). Obviously separate residence does not preclude family support across household boundaries, just as living together does not guarantee the provision of care for the elderly (Martin, 1989; Mason, 1992). Nonetheless, because of their more limited economic activity and need for assistance with routine daily activities as health declines, coresidence takes on special importance for the elderly (Domingo and Casterline, 1992). For these reasons the living arrangements of the elderly have been a central focus of those

who are interested in research or administration in areas related to the problems of the elderly in Korea (Kim and Rhee, 1997, 1999, 2000; Yoo, 2000; Won, 1995).

1) Household Composition of the Elderly

Table 7.7 shows the living arrangements of those aged 65 or over by sex, marital status and place of residence from 1980 to 2000. According to Table 7.7, an increasing proportion of the elderly are living apart from their children. In Korea today, living apart from children among the elderly is as prevalent as living with children. In 1980, 19.5 percent of those aged 65 or over lived apart from their children. Within two decades, this proportion more than doubled to 50.9 percent. Correspondingly, the proportion of the elderly who live with married children dropped sharply from 61.7 percent in 1980 to 35.7 percent in 2000. The proportion living with unmarried children declined at a slower rate than the proportion living with married children (from 18.8 percent in 1980 to 13.4 percent in 2000). This trend is partly due to the increasing tendency for adult children to leave the parental home upon marriage.

The increase in the proportion of those living apart from children from 1980 to 2000 is consistent regardless of sex, marital status or place of residence, though the rates of increase vary according to the specific characteristics of interest. In the last two decades, the proportion of the elderly living apart from children was consistently greater among male elderly than among female elderly.

Further examination of this proportion reveals an interesting pattern: while the proportion living alone has been greater among female elderly than male elderly, the proportion living with a spouse only has been smaller. It reveals that, among the elderly who live apart from their children, male elderly are more likely than female elderly to live with their spouses but are less likely to live alone. Female elderly who do not co-reside with their children may face more adverse circumstances than their male counterparts (C.S. Kim, 2003).

The proportion living with married children is consistently greater among female elderly than among male elderly, though the proportion has declined for both sexes during the last two decades. This pattern reflects the lower status of

Table 7.7 Living Arrangements of the Elderly by Sex, Marital Status and Place of Residence, 1980-2000

(Unit: %)

	Total	Male	Female	Unmarried	Married	Urban	Rural
1980							
% living apart from child ¹⁾	19.5	22.8	17.6	13.1	27.3	15.2	22.2
% in one-person household	4.8	1.5	6.8	8.1	0.9	3.3	5.8
% in couple-only household	10.1	18.0	5.4	-	22.0	6.5	12.3
% living with married child ²⁾	61.7	48.2	69.6	74.3	46.3	63.5	60.5
% living with unmarried child ³⁾	18.8	29.0	12.8	12.6	26.3	21.3	17.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1985							
% living apart from child ¹⁾	25.2	29.7	22.5	17.6	33.5	19.5	29.9
% in one-person household	6.7	2.3	9.4	11.8	1.3	5.2	8.0
% in couple-only household	13.2	23.2	7.2	-	27.2	8.7	16.9
% living with married child ²⁾	57.4	44.6	65.2	70.3	43.6	60.5	54.9
% living with unmarried child ³⁾	17.3	25.7	12.3	12.1	23.0	20.0	15.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1990							
% living apart from child ¹⁾	31.8	38.4	27.9	22.5	41.9	24.2	40.5
% in one-person household	9.5	3.5	13.1	17.3	1.1	7.0	12.4
% in couple-only household	17.5	30.9	9.6	-	36.5	12.3	23.6
% living with married child ²⁾	51.5	38.5	59.2	65.0	36.8	56.7	45.6
% living with unmarried child ³⁾	16.7	23.1	12.9	12.5	21.3	19.1	13.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1995							
% living apart from child ¹⁾	43.1	50.6	38.6	31.6	55.6	33.6	55.5
% in one-person household	13.8	4.9	19.1	25.4	1.2	10.2	18.6
% in couple-only household	24.0	41.4	13.8	-	50.0	17.7	32.3
% living with married child ²⁾	43.6	30.4	51.4	58.9	27.0	50.4	34.7
% living with unmarried child ³⁾	13.3	19.0	10.0	9.5	17.5	15.9	9.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2000							
% living apart from child ¹⁾	50.9	58.1	46.6	39.0	61.9	42.5	62.6
% in one-person household	16.8	5.9	23.5	33.7	1.4	13.8	21.0
% in couple-only household	29.2	47.5	18.0	-	55.8	23.5	37.1
% living with married child ²⁾	35.7	24.3	42.7	50.6	22.0	41.0	28.3
% living with unmarried child ³⁾	13.4	17.6	10.8	10.4	16.1	16.5	9.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: 1) The elderly person lives alone, lives with a spouse only, lives with relatives, or non-relatives. All but a small proportion of the elderly have children in Korea.

2) The elderly person lives with at least one married child with or without an unmarried child.

3) The elderly person lives with at least one unmarried child without a married child.

Source: KNSO (Raw data from a two percent sample from censuses of each year).

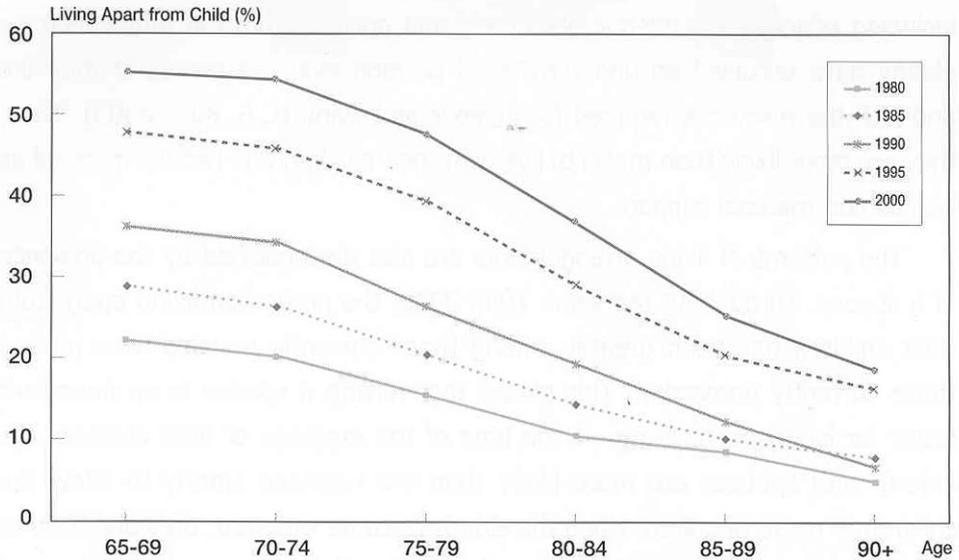
female elderly. Despite the increase in their social and family status in recent years, women in Korea are still in a lower position in most domains of life including education, economic resources, and power within the family. Female elderly have occupied an underprivileged position over the course of their life and lack the resources required for independent living (C.S. Kim, 2003). Thus, they are more likely than males to live with their children and receive material as well as non-material support.

The patterns of living arrangements are also distinguished by the presence of a spouse. Throughout the years 1980-2000, the proportion living apart from their children has been greater among those currently married than among those currently unmarried. This shows that having a spouse is an important factor for independent living. At the time of the marriage of their children, the elderly with spouses are more likely than the widowed elderly to allow the children to move out. Also, when the elderly become widowed, they are likely to join their children's family. In addition, the likelihood that those currently married are younger than those currently unmarried also contributes to the pattern: compared to the old elderly, the younger elderly have more economic resources and are in better health, which is required for independent living (Kim and Rhee, 1997, 1999, 2000).

As with sex and marital status, the urban-rural differentials in living arrangements of the elderly are distinctive. Between 1980 and 2000, the proportion living apart from children has been consistently greater among the elderly in rural areas than among the elderly in urban areas. Furthermore, the urban-rural difference has widened in the last two decades. This pattern reflects the out-migration of young adults for reasons of employment and the education of their children, leaving elderly family members in rural areas.

Figure 7.4 illustrates the proportion of the elderly living apart from children by age group in the last two decades. It clearly shows that the proportion living apart from children has increased at all ages between 1980 and 2000, with a greater increase being in younger groups. The concentration of the increase of this proportion in younger groups suggests that many elderly parents these days may want to live independently and if they can, do so (Kim and Rhee, 1999, 2000). Nonetheless, the increase of the proportion among the oldest old

Figure 7.4 Proportion of the Elderly Living Apart from Their Children by Age, 1980-2000



Source: KNSO (Raw data from a two percent sample from censuses of each year).

supports the view that many elderly parents are increasingly abandoned by their adult children. The special attention of policy makers and researchers should be drawn to this group since many of them are unable to live independently.

2) Relationship of the Elderly to the Household Head

Table 7.8 provides information on the relationship of the elderly to the household head. The proportion of the elderly being the household head (more accurately termed "designated as the household head") has increased from 32.2 percent in 1980 to 51.1 percent in 2000. Also, during these years the proportion of the elderly being the spouse of the household head has also increased while the proportion of the elderly being the parent of the household head has declined. Such changes in the status of the elderly within the household correspond to an increase in the proportion of the elderly who live apart from their children as described above.

The status of the elderly within the household is quite different between male elderly and female elderly. Throughout the years, the proportion of those being the household head has been consistently greater among male elderly

Table 7.8 Relationship of the Elderly to Household Head by Sex, Marital Status and Place of Residence, 1980-2000

(Unit: %)

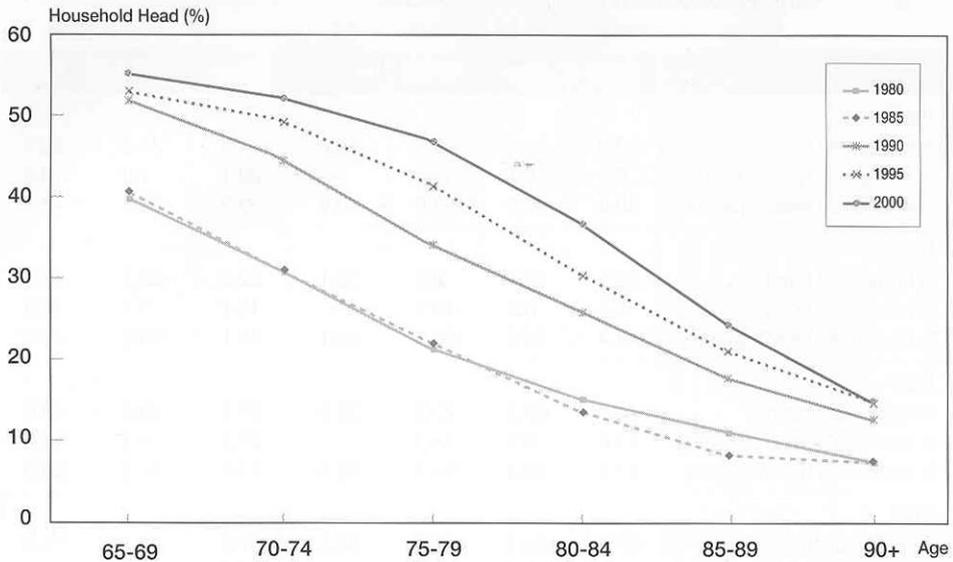
	Total	Male	Female	Unmarried	Married	Urban	Rural
1980							
% household head	32.2	71.3	9.2	13.8	54.6	31.4	32.7
% household head's spouse	9.1	0.1	14.4	-	20.1	7.0	10.4
% household head's parent	49.4	25.3	63.6	70.9	23.3	53.6	46.7
1985							
% household head	32.1	70.7	8.9	13.1	52.6	32.2	32.0
% household head's spouse	9.5	0.2	15.1	-	19.7	7.7	10.9
% household head's parent	47.4	25.2	60.8	68.1	25.1	50.2	45.2
1990							
% household head	44.4	80.2	23.2	32.5	57.5	40.5	49.0
% household head's spouse	11.6	0.2	18.3	-	24.2	9.3	14.2
% household head's parent	41.1	18.4	54.5	62.6	17.6	46.9	34.3
1995							
% household head	47.6	81.1	27.9	38.5	57.6	42.7	54.0
% household head's spouse	13.3	0.5	20.9	-	27.9	11.1	16.2
% household head's parent	36.7	17.5	48.0	57.4	14.1	43.2	28.1
2000							
% household head	51.1	82.9	31.6	45.7	56.1	47.3	56.3
% household head's spouse	16.0	0.9	25.2	-	30.6	13.8	18.9
% household head's parent	31.1	15.5	40.7	50.8	13.0	36.7	23.4

Source: KNSO (Raw data from a two percent sample from censuses of each year).

than female elderly. This seems related to the traditional concept of the household head: a woman, even if the oldest in the household, is seldom identified as the head of the household that contains male adults. Nonetheless, the proportion of those being identified as the head of household has increased at a faster rate among the female elderly than the male elderly. There seems to be a possibility that some segment of the population increasingly designates the female elderly (in the absence of their spouses) as household head, leading to a sharp increase of female household heads. However, a more plausible explanation can be found for the increase of the female elderly living alone who head their own one-person households.

The change in status of the elderly within the household in the last two decades is also different according to marital status and place of residence. The increase in the proportion of the elderly being household head is most

Figure 7.5 Proportion of the Elderly Being Household Head by Age, 1980-2000



Source: KNSO (Raw data from a two percent sample from censuses of each year).

conspicuous for those currently unmarried. In 1980, 13.8 percent of the currently unmarried elderly were identified as the household head. This proportion more than tripled to 45.7 percent in 2000. In terms of place of residence, the proportion of the elderly being household head or his/her spouse is consistently greater among the elderly in rural areas than among the elderly in urban areas. Over time, the urban-rural gap has widened.

Figure 7.5 illustrates the proportion of the elderly being household head by age. The overall pattern in this figure corresponds closely to the pattern found in Figure 7.4 of the proportion of the elderly living apart from children. A closer examination of the correspondence between Figure 7.5 and Figure 7.4 reveals that before 1995, the proportion of the elderly being household head was much greater than the proportion living apart from their children (particularly for the younger elderly). This indicates that, until recently, a substantial proportion of the households headed by the elderly have contained adult children. However, households headed by the elderly today are mainly composed of the elderly alone or couples only.

V. Proportions and Characteristics of Female Household Heads

The issue of the female-headed household is closely linked to the welfare status of the children who reside with the mother only. Though not a few studies have been conducted on the situation of the children in mother only households, the research focusing on the proportion and characteristics of female household heads is quite limited (Lee and Kim, 2001). This section first deals with the proportion of males and females being household heads according to selected characteristics. Then it examines whether and how female household heads are different from male household heads.

1. Proportion of Males and Females as Household Head

Table 7.9 provides the proportions of men and women being household head for those aged 15 or over by place of residence, marital status and age. The proportions are calculated by dividing the number of sex specific household heads by the total sex-specific population. They indicate the proportion of males being household heads and the proportion of females being household head, respectively. As shown in Table 7.9, the proportion of males being household head has increased from 59.2 percent in 1980 to 69.9 percent in 2000. During the same period, the corresponding proportion of females has increased from 8.3 percent to 15.0 percent. The increase in the number of the household heads for both sexes is mainly due to the growing number of households including one-person households.

It is noteworthy that the proportion of males being household head has been much greater than the proportion for females throughout the years. The prevalence of the male household head is partly due to the persistence of the traditional concept of household head: if there is an adult male in the household, a woman is not designated as head of the household. Nonetheless, it is also clear that an increasing proportion of women are becoming heads of households. This is related to the recent trend where single women as well as divorced women tend to live independently rather than join their natal families.

Table 7.9 Proportion of Males and Females as Household Head by Place of Residence and Marital Status, 1980-2000

(Unit: %)

	1980		1985		1990		1995		2000	
	Male	Female								
Total	59.2	8.3	60.2	7.6	64.6	11.3	68.7	12.9	69.9	15.0
Place of Residence										
Urban	58.8	9.3	60.3	8.5	65.1	11.1	68.3	12.2	69.2	14.4
Rural	59.7	6.9	59.9	6.0	63.1	12.0	70.2	15.1	72.7	17.2
Marital Status										
Single	6.0	4.1	6.1	4.5	11.4	8.8	15.5	11.0	17.5	13.5
Married	91.0	3.9	91.4	3.4	93.1	3.3	94.2	3.4	94.4	4.3
Widowed	50.2	33.3	47.4	32.5	66.7	49.9	66.9	53.9	66.7	56.7
Divorced	49.4	45.0	54.5	42.7	72.0	75.6	77.1	80.9	79.6	82.4

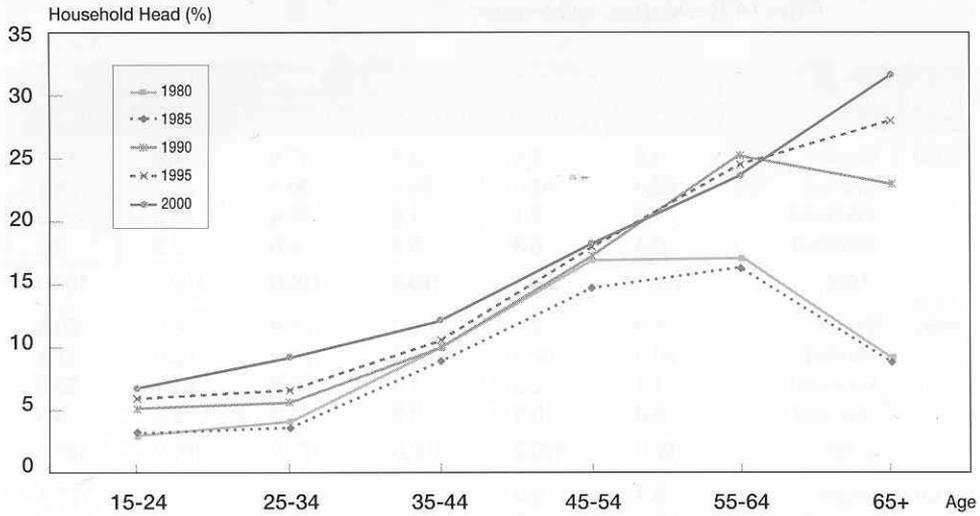
Source: KNSO (Raw data from a two percent sample from censuses of each year).

The proportion of females being household head by place of residence shows an interesting pattern over the period 1980-2000. Before 1990, the proportion was slightly greater in urban areas than in rural areas. However since 1990, this proportion has become greater in rural areas than in urban ones. The turnover between urban and rural areas is closely related to the fact that older widowed women in rural areas head their own households, living apart from their children. Such an interpretation is also relevant to the pattern of household head for males where a similar turnover between places of residence has been found since 1995.

The proportion of women being household head differs according to marital status. This proportion is greatest among divorced women, followed by widowed women, by single women and then by women with spouses. The proportion of currently married women being household head has been less than 5 percent from 1980 to 2000. This indicates that women are not identified as household head when husbands are present in the household, suggesting that the traditional concept of household head is strongly held, at least for married couples.

One of most pronounced changes over time in the proportion of women being household head is found among divorced women. In 1980, less than half of divorced women headed their own household, but this proportion has sharply

Figure 7.6 Proportion of Females Being Household Head by Age, 1980-2000



Source: KNSO (Raw data from a two percent sample from censuses of each year).

increased to 82.4 percent in 2000. In Korea today most divorced women head their own households. Another distinctive change has been found among single women: the proportion increased from 4.1 percent in 1980 to 13.5 percent in 2000.

Figure 7.6 graphs the proportion of women as household head by age. According to this figure, the age patterns appear different depending on the year. For the years 1980-1990, the proportion increases up to the ages of 55-64 and then declines. However, in both 1995 and 2000, the proportion continues to increase as age advances. Such changes over time reflect the fact that the widowed elderly in recent years are more likely than those before to head their own households.

2. Characteristics of Household Head by Sex

This section examines selected characteristics of the household head for males and females. Table 7.10 provides information on the distribution of marital status by sex and place of residence of household head in 1980, 1990 and 2000. As shown in Table 7.10, the majority of male household heads are currently married though the relative share of those who are single has increased in the

Table 7.10 Distribution of the Marital Status of Household Head by Sex and Place of Residence, 1980-2000

(Unit: %)

Year	Marital Status	Male Household Head			Female Household Head		
		Urban	Rural	Total	Urban	Rural	Total
1980	Single	4.5	2.6	3.7	17.5	4.9	13.1
	Married	93.9	95.0	94.4	30.5	23.7	28.1
	Widowed	1.2	2.1	1.6	47.4	69.2	55.0
	Divorced	0.4	0.3	0.3	4.6	2.2	3.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0
1990	Single	6.9	3.4	6.0	26.0	6.0	20.5
	Married	90.9	92.9	91.4	20.0	10.6	17.4
	Widowed	1.4	2.8	1.8	46.7	81.1	56.2
	Divorced	0.8	0.8	0.8	7.3	2.3	5.9
	Total	100.0	100.0	100.0	100.0	100.0	100.0
2000	Single	8.5	5.0	7.7	26.0	7.1	21.4
	Married	87.8	90.3	88.3	20.0	10.2	17.6
	Widowed	1.4	2.9	1.7	40.1	78.0	49.4
	Divorced	2.3	1.8	2.2	13.9	4.7	11.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: KNSO (Raw data from a two percent sample from censuses of each year).

last two decades. With most household heads being currently married, no substantial differences can be found between urban and rural areas. In comparison, widowed women make up the greatest proportion of female household heads. Notable changes in the composition of marital status for female household heads from 1980 to 2000 are found in the share of remaining types of marital status.

In 1980, the proportion of female household heads being single was 13.1 percent, but this proportion increased to 21.4% in 2000. Such an increase reflects the recent tendency for single women (as well as single men) to form non-family households including one-person households. Divorced women account for the smallest fraction of female household heads, but showed the most pronounced increase from 3.8 percent in 1980 to 11.7 percent in 2000. The sharp increase of divorced women among female household heads is in part due to the increase of divorce over time. Also, it may be promoted by changes in the behaviour of women upon divorce: more divorced women tend to maintain their own households rather than join other households through remarriage, or

move in with their natal parents.

Urban and rural differences in the distribution of the marital status of female household heads are apparent. In rural areas, the widowed account for most female household heads. This is also true for female household heads in urban areas. Nonetheless, compared to rural areas, the share of widowed women who are female household heads is smaller but the share of other types of marital status is greater in urban areas. Such differentials between urban and rural areas have become more apparent over time. This urban-rural differential trend is closely related to changes in the age composition of each area. The population in rural areas has been aging at a faster rate than the population in urban areas, mainly through the out-migration of youth from rural to urban settings. As a result, in rural areas elderly women, of whom many are widowed, live alone and head the household. Meanwhile, the urban population contains a greater number and proportion of young women who are single or divorced.

Table 7.11 shows the age composition of household head by sex and place of residence. In comparison to the male household head, the age of the female household head is more evenly distributed over the given categories of the age groups. More specifically, the proportion of male household head in the youngest age group and the oldest one is substantially smaller than that of female household heads. Such sex differentials in the age composition of household heads suggests that once men are married, they continue to be the head of their households. Women tend to be household heads when they live in non-family households before marriage: upon the marriage of women, the head of their household is identified as their husband by the members in the household. When widowed, women may head their own household particularly if they live apart from their adult children.

Another feature of the sex differential in the age of the household head is the tendency of the female household head to be older. From 1980 to 1990, female household heads were more concentrated in older age groups than male household heads. This pattern has become more pronounced over time. For males, the proportion of household heads aged 65 or over was 5.9 percent in 1980 and increased to 9.3 percent in 2000. The corresponding proportion for females sharply increased from 8.4 percent in 1980 to 24.7 percent in 2000.

Table 7.11 Age Distribution of Household Head by Sex and Place of Residence, 1980-2000

(Unit: %)

Year	Age	Male Household Head			Female Household Head		
		Urban	Rural	Total	Urban	Rural	Total
1980	15-24	3.9	2.4	3.3	15.5	4.8	11.8
	25-34	32.8	19.2	27.0	14.3	7.8	12.0
	35-44	32.2	27.6	30.3	22.4	20.2	21.6
	45-54	18.5	24.7	21.2	25.5	32.1	27.8
	55-64	9.0	17.1	12.5	15.7	23.1	18.3
	65+	3.5	9.0	5.9	6.6	12.0	8.4
	Total	100.0	100.0	100.0	100.0	100.0	100.0
1990	15-24	2.8	1.3	2.4	14.7	3.6	11.7
	25-34	32.1	18.0	28.5	16.0	4.9	12.9
	35-44	30.6	22.0	28.4	18.4	8.8	15.8
	45-54	20.1	24.5	21.3	20.5	19.7	20.3
	55-64	9.9	20.3	12.6	18.2	31.1	21.7
	65+	4.4	14.0	6.8	12.2	31.9	17.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0
2000	15-24	1.9	1.3	1.8	10.2	3.0	8.4
	25-34	21.9	14.1	20.2	16.5	4.6	13.6
	35-44	34.3	25.2	32.3	21.3	8.5	18.1
	45-54	22.4	19.9	21.8	19.7	12.3	17.9
	55-64	13.1	20.3	14.7	15.3	23.6	17.3
	65+	6.5	19.2	9.3	17.1	48.0	24.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: KNSO (Raw data from a two percent sample from censuses of each year).

This trend, which may be termed the "aging of the female household head" can be attributed to the rapid increase in widowed women living in non-family households. The "aging of the female household head" is apparent particularly in rural areas. The proportion of female household heads aged 65 or over was 12.0 percent in rural areas, but has increased by four times in twenty years. As of 2000, about half of the female household heads in rural areas were aged 65 or over.

VI. Conclusion

This chapter surveyed the patterns and changes of households in Korea in the last two decades. As shown in the published reports based on the unit of the household, the population in Korea has been undergoing rapid and profound changes in many aspects of the living environment with respect to dwelling unit. These changes encompass household composition, living arrangements and the status of household members. The key findings from the analysis of the sample files of the micro-level census can be summarized as follows.

First, the proportion of the population living alone or living with a spouse only has increased from 1980 to 2000. When considering the age and marital status of the population, the increase in these proportions has become quite apparent. In particular, the increase in the proportion living alone for those unmarried persons aged 15 or over appears remarkable: in 1980 only 3.7 percent of them lived alone, but in 2000, 15 percent lived alone. The propensity toward living alone differs according to sex, reason for being unmarried, and place of residence. Of the unmarried population aged 15 or over, the proportion living alone has been greater among women than men, among those divorced or widowed than those single, and among those in rural areas than those in urban areas. In terms of age, this proportion has been greater among older age groups.

Examination of the trends for living alone among those currently unmarried reveals several interesting findings. One is that the urban-rural differentials in the proportion of those living alone has widened in the last two decades. Another finding is the disproportionately rapid increase in those living alone among those who are single, compared to the increase among those widowed or divorced. Also, the fact that the proportion of those living alone has increased at the fastest rate among older age groups has important implications.

Of currently married persons aged 15 or over, the proportion living with a spouse only has been greater in urban areas than rural areas. And this differential between urban and rural areas has widened over time. In terms of age, the proportion living with a spouse only has been highest for those under their mid-30s who usually start to form new households and for those over their

mid-50s of whom children are of the age of marriage. In particular, the proportion of those living with a spouse only for old age has been rapidly increasing over time.

Second, family living environments for children and the elderly have substantially changed in the last two decades. Though the analysis does not contain children and the elderly in institutional households, some changes appear clearly. While the majority of children in ordinary households live with both parents, the proportion of those living with any grandparent has steadily declined over time. Such a decline is more pronounced in urban areas than in rural ones. Also the urban-rural difference in the household environment of children is found in the number of siblings they have. The number of siblings was greater among children in rural areas than among those in urban areas, but the gap has become smaller over time.

For living arrangements of the elderly, the proportion living apart from their children has rapidly increased from 1980 to 2000. Also this proportion differs according to the characteristics of the elderly. The proportion of those living apart from their children has been greater among elderly men than elderly women, among the elderly in rural areas than the elderly in urban areas, and among the currently married elderly than the currently unmarried elderly. However, it should be noted that the specific patterns of living apart from children differ between the male and female elderly. While elderly men are more likely than elderly women to live apart from their children, elderly men tend to live with their spouses but elderly women tend to live alone.

Third, while the proportion of females being the household head has been much smaller than the corresponding proportion of males, it has rapidly increased over the last two decades. The proportion of females being household head was greater in urban areas than in rural areas before 1990, but has become smaller in urban areas since then. A similar turnover for place of residence is found for the proportion of males being household head.

The proportion of females being household head also differs by marital status. The greatest proportion has been found among widowed women, followed by divorced women, single women and finally currently married women. This is in contrast to the case of the male household head, of whom the majority

are currently married. In particular, single women are increasingly forming non-family households, which they head. The age patterns of being household head for females appears to have changed over time. Before 1990, the proportion of females being household head was greatest among middle aged women. However, since 1990, this proportion has become greatest among women aged 65 or over.

Comparison of the characteristics of household head by sex confirms that many female household heads are widowed, divorced or single, while the majority of male household heads are currently married. Of the female household heads, the proportion being widowed is becoming smaller while the proportion being divorced or single is increasing over time. In particular, the proportion of female household heads who are divorced or single is more rapidly increasing in urban areas than in rural ones. With respect to age composition, female household heads are more concentrated in older ages groups than male household heads. In addition, this age pattern is more apparent in rural areas than in urban ones.

The major findings described above indicate that the patterns and changes of household and family living of the Korean population vary according to sex, place of residence and age. To understand the mechanisms through which the changes in household and family occur, a more comprehensive and systematic approach is needed. The current study only reminds us that the issue of sex, place of residence and age should be considered in our efforts to enhance our understanding of changes in household and family and the social forces promoting them.

LABOR FORCE PARTICIPATION, OCCUPATION AND INDUSTRY

Kyonghee Min and Ki-Soo Eun

I. Introduction

The importance of the labor force is more pronounced now than ever, as the shortage of labor since the 1990s continues and new types of labor with high level skills and training are in demand. The number of low-wage, low-skilled foreign laborers was about 100,000 in 1993. Since then, it has rapidly increased to over 120,000 in 2000 (KNSO, 2003a). In the meantime, the rapid transformation of the Korean economy into an information and knowledge economy has accelerated structural changes in the labor force. It precipitated an increase in the flexibility of labor while it has increased the demand for a highly skilled labor force.

The problems of labor shortages, the increasing flexibility of labor, and increasing demands for highly skilled labor are urgent and require prompt solutions. In reality, however, these problems are too complicated to have solutions all at once. The increasing employment of foreign laborers cannot be considered as an adequate solution for the problem of the labor shortage because it accompanies tremendous social costs as we have seen in the European scene such as the problems of human rights abuses, the issue of

citizenship, and cultural conflicts. In addition, the increasing flexibility of labor presents serious problems of adjustment for laborers and their families. Training the labor force to become more highly educated and highly skilled requires time and money. Thus, it cannot be accomplished in a short period of time.

Changes in the labor market always interact with the structure of occupations and industry. The social transformation from an industrial society to a post-industrial society has great influence on industrial structure. An individual's occupation is absolutely dependent on the changing structure of industry. Thus, changes in the labor market, occupation and industry are causes and effects of each other.

This chapter first gives an overview of the history of the Korean labor force in its diverse dimensions: the definitions and measurements of the labor force, the changing structure of the labor force, the characteristics of the female labor force and the informal sector. It analyzes the data provided by population censuses since 1930. The second section examines the changing structure of occupations and industry by sex and age. In particular, the chapter focuses on occupational and industrial structure by sex.

II. Labor Force Participation

1. Labor Force Participation Rates, 1930-2000

1) Definitions of the Labor Force

The definition of the labor force adopted in the census has frequently changed since the first census conducted by the Government-General of Korea (GGK) in 1930.¹⁾ During the Japanese colonial period ending in 1945, the labor force referred to gainfully employed persons of all ages (GGK, 1934, 1944, 1945). In the 1955 census of Korea the labor force included three categories of persons: "employed", "unemployed"; and "persons without an occupation."²⁾

1) The first national population census on the Korean peninsula was taken in 1925 by the Government-General of Korea, but the report did not include data on the economic activities of the population.

2) The "employed" refers to those 14 years old or older with a job during the survey period. The "unemployed" refers to those between the ages of 14 and 60 who were not gainfully employed but were

Successive population censuses since 1960 have adopted different approaches to labor force depending on the census year: the labor force approach (from 1960-1980, and 2000), the gainful worker approach (in 1985) and the usual status approach (in 1990 and 1995).

In addition to variations in the approach to the labor force between censuses, differences were also found in the application of the same approach. For instance, in defining the labor force, the International Labour Organization (ILO) limits its coverage to labor supplied for "the production of economic goods and services as defined by the United Nations System of National Accounts and Balances" and to the following four main factors (ILO, 2002: 31): (i) within a specified reference period, (ii) by individuals meeting an age criterion, (iii) for a minimum number of hours in the reference period, (iv) operational difficulties in correctly applying the concepts in the field, i.e., problems of identification of the employed and unemployed (ILO, 2002: 33). These four factors have been selectively applied in Korean censuses over the last several decades (K. Min, 2002: 395-397). Although the labor force has consisted of the employed and unemployed in all censuses since 1960, these variations in the measurement of the employed and unemployed make a longitudinal comparison of labor force statistics impossible.

Another source of data on the labor force is the economically active population surveys which have been taken since 1962.³⁾ However, this chapter will use population censuses to acquire consistent data.

2) Trends in Labor Force Participation

The labor force participation rates from 1930 to 2000 are presented in Table 8.1. As mentioned above, the labor force measure was applied to the population of all ages during the period of Japanese rule. The proportion of the population gainfully employed was 59.5 percent for males and 32.6 percent for females in

looking for work. The "persons without occupation" refers to all civilians between the ages of 14 and 60 who were voluntarily idle, including beggars, retired persons and those who were on relief or who lived on pensions, interest, rents for tenancy, rents for housing, or dividends (MHA, 1959: 95).

3) The labor force survey began in 1957. The survey was taken monthly to obtain information on the employed and the unemployed until May, 1962. The First Five year Economic Plan was launched in 1962 and the importance of the labor force statistics was acknowledged. On the 15th of January, the 1962 Statistics Law was promulgated and authorized a labor force survey to be taken (K. Min, 1986: 235-236).

Table 8.1 Labor Force Participation Rates in Korea, 1930-2000

Year	Male	Female
1930 ¹⁾	59.5	32.6
1940 ¹⁾	53.7	21.9
1944 ¹⁾	52.9	28.9
1955	76.6	48.0
1960	73.4	26.8
1966	78.6	31.5
1970	72.5	37.6
1975	77.8	45.7
1980	72.4	38.4
1985	71.5	32.1
1990	68.3	32.6
1995	71.6	36.6
2000	70.3	39.1

Note: 1) For 1930-1944, the data refers to Koreans in South and North Korea. From 1955 the data is only from South Korea.

Source: GGK (1934: 172, 1944: 72-73, 1945, 58-59); EPB (1963, 1969, 1972, 1977, 1982a, 1987 (Raw data from a two percent sample from the 1985 Population and Housing Census)); KNSO (1993, 1997, 2001j).

1930. It dropped to 52.9 percent for males and 28.9 percent for females in 1944.

In 1955, the minimum age criterion was applied in measuring the labor force. Since then, this criterion has changed from census to census. By excluding persons without occupation from the labor force in the 1955 census data, we found that the labor force participation rate was 76.6 percent for males and 48.0 percent for females. The relatively high rate for females might have been a temporary phenomenon due to the fact that in the period immediately following the Korean War, women actively participated in economic activities to earn a living for themselves and their families. The labor force participation rate was 73.4 percent for males and 26.8 percent for females in 1960, 78.6 percent for males and 31.5 percent for females in 1966.

Since then, labor force participation rates for males stayed around 70 percent while the labor force participation rates for females fluctuated between 30-40 percent, except in 1975 when the rate was 45.7 percent. In 2000 when the availability for work was added to the definition of economic activity in the census, the labor force participation rate was 70.3 percent for males and 39.1

percent for females. Despite the changes in the definition of labor force participation, it seems that male labor force participation rates have stayed relatively stable at around 70-75 percent, whereas female labor force participation rates have increased.

2. Labor Force Participation Rates by Age, Sex, and Education

Labor force participation rates by age and sex are presented in Table 8.2. According to this table, the general trends of labor force behavior show several significant changes. First, labor force participation rates among the teenage population have drastically decreased. In 1980, more than one fifth of teenage boys and girls participated in the labor force. In 2000, however, less than 10 percent of teenage boys and girls were in the labor force. Even when the changes in the definition⁴⁾ are taken into account, the decrease in the teenage labor force participation rate between 1980 and 2000 was of a grave magnitude. This trend may be explained mainly by the two interrelated processes: the economic expansion of the 1970s and early 1980s which provided immense opportunities for economic activities for the teenage population in 1980, and as a result of the economic growth of this period, the rapid absorption of teenage population into educational institutions in the late 1980s and after.

Second, men aged 20-24 years also stand out: their labor force participation rate decreased drastically from 71.0 percent in 1980 to 38.8 percent in 2000 while women in the same age group did not record such a drastic change. Third, women of the age of childbearing and child-rearing (25-34 years) have increasingly participated in the labor force in the last 20 years. It is well known that age specific labor force participation rates for women in developing countries have the shape of an M-curve. This has also been true for Korean women. But the dip in the age group 25-34 years became much more shallow in

4) The definitions of the labor force in 1980 and 2000 censuses were similar except for two factors. One was the definition of the unemployed. "Availability for work" was added to the definition of the unemployed in the 2000 census. The other difference was in the minimum age for entry in the labor force: 14 years (in the western way of counting age) in 1980 and 16 years (in the Korean way of counting age) in 2000.

Table 8.2 Labor Force Participation Rates by Age and Sex, 1980-2000

(Unit: %)

Year	Under 20 yrs.	20 years old or older						
		Total	20-24	25-34	35-44	45-54	55-64	65+
Male								
1980	21.4	85.8	71.0	94.1	96.4	92.1	75.9	40.5
1985	12.7	85.5	61.5	94.3	97.9	94.3	75.5	40.0
1990	12.4	84.1	53.3	93.8	97.6	93.4	74.8	37.0
1995	10.6	86.1	58.4	94.6	98.2	95.0	78.6	40.5
2000	6.5	78.6	38.8	86.0	93.9	89.3	69.0	39.0
Female								
1980	25.1	40.1	51.2	31.9	46.0	50.2	38.3	12.4
1985	13.9	35.7	49.4	28.1	38.8	46.3	35.2	10.7
1990	16.1	36.9	57.2	31.2	39.2	44.2	34.8	11.5
1995	11.9	42.0	61.3	39.2	44.4	46.7	40.2	16.8
2000	7.8	42.5	48.9	44.2	49.6	47.7	37.5	18.9

Source: KNSO (Raw data from a two percent sample from censuses of each year).

2000 than in 1980. More discussions on this trend will be presented below as we look at the labor force participation rates by city size.

Finally, the labor force participation rates of women aged 65+ years have increased from 12.4 percent in 1980 to 18.9 percent in 2000. The magnitude of this increase is significant, given the fact that the definition of the labor force in 2000 was more conservative than in 1980. Furthermore, this increase is all the more remarkable when compared to men of the same age whose labor force participation rates have stayed virtually at the same level during the same period.

Labor force participation rates by educational attainment shown in Table 8.3 provide important points for both sexes. First, in all census years shown in the table, those who have attained elementary school education have recorded higher labor force participation rates than those without formal education. Second, until 1995 the labor force participation rates of those who had attained an elementary school education had been higher than the labor force participation rates of those with university or higher education. The difference between these two groups has become smaller over time. This pattern holds true for women in 2000, but not for men. Men with university or higher education recorded a higher labor force participation rate than men with

Table 8.3 Labor Force Participation Rates by Sex and Educational Attainment, 1980-2000

(Unit: %)

Year	No Schooling	Elem. School	Junior High School	High School		2 Year College	Univer- sity or Higher
				Academic	Vocational		
Male							
1980	69.9	88.5	66.7	62.1	67.1	66.9	72.4
1985	63.2	87.3	68.2		69.2	70.6	67.0
1990	55.5	81.2	78.6		71.5	76.1	73.5
1995	54.7	78.7	78.0		78.9	80.0	77.0
2000	49.4	68.3	67.6		72.2	71.5	73.6
Female							
1980	41.8	47.5	28.6	26.4	36.3	43.0	25.6
1985	34.1	43.9	24.7		28.2	38.3	24.7
1990	29.8	43.4	31.4		31.9	41.6	32.7
1995	31.2	46.3	37.8		36.8	47.2	39.8
2000	28.7	43.3	40.7		37.4	45.0	41.7

Source: KNSO (Raw data from a two percent sample from censuses of each year).

elementary school education in 2000. This may reflect the restructuring of the Korean economic system in the late 1990s.

Third, among those with high school education in 1980, those who had attended vocational school participated in the labor force at a higher rate than those who had attended an academic school. The differences between these two groups were much more pronounced for women than for men. This phenomenon may be explained by the fact that it was a matter of choice to be in the labor force for women but the norm for men. For men with university or higher education, the labor force participation rate did not change between 1980 and 2000; for women with a corresponding level of education, the labor force participation rate in 2000 was much higher than that in 1980 (an increase of 16.1 percentage points).

In general, the effect of the educational attainment of individuals on their labor force participation is closely related to the level of economic development of the society. The "industrial" society of the 1980s welcomed and fully utilized the low-paid labor force with lower levels of education. The "information" economy of the year 2000 required a labor force with more education, however. The changes in the economy, thus, resulted in the increased labor force

participation of women with university or higher levels of education.

3. Age Composition of the Labor Force

The changes in the age composition of the labor force in the last two decades are different by sex. In addition, the magnitude of the changes has been greater for the female labor force than for the male labor force. First, the proportion of the male labor force under age 20 has dropped from 6.4 percent in 1980 to 1.6 percent in 2000 whereas the corresponding proportion of the female labor force has more rapidly declined from 12.0 percent to 2.7 percent. Second, a noticeable difference between males and females also appears in the age category 25-34 years. The proportion of the male labor force in this age group decreased slightly from 30.2 percent in 1980 to 27.9 percent in 2000, whereas the corresponding proportion of the female labor force has substantially increased from 18.4 percent to 24.8 percent.

For the changes in age composition of the labor force between 1980 and 2000, there are no substantial sex difference at other ages except those mentioned above. For both men and women, the proportion of the labor force aged 20-24 years has decreased while the proportion aged 35-44 years has significantly increased for both sexes. Finally, the proportion of the labor force aged 55 years or over has slightly increased for both sexes.

The decrease in the proportion of the male labor force under age 35 may have been related in part to the increase in the educational attainment of men at this age. In the meantime, the general increase in educational attainment by their female counterparts has resulted in an increase in the labor force participation of women aged 25-34 years. Other factors including delayed marriage, the decrease in the total fertility rate, an increased awareness of the importance of the economic activities of women, and the transformation of the national economic system in favor of a highly educated female labor force have also contributed to the increase in economic activities by women aged 25-34.

4. Labor Force Participation by Marital Status

Labor force participation rates by marital status reflect sex role differences.

Table 8.4 Labor Force Participation Rates by Sex and Marital Status, 1980-2000

(Unit: %)

Year	Male				Female			
	Married	Widowed	Divorced	Single	Married	Widowed	Divorced	Single
1980	90.3	45.5	84.8	50.0	36.2	32.1	63.3	46.0
1985	91.4	43.8	85.1	45.6	31.1	28.5	60.9	39.2
1990	90.4	42.7	86.2	44.7	31.0	24.8	70.7	42.9
1995	91.0	46.7	88.1	51.3	36.8	30.3	70.2	47.2
2000	85.2	39.0	75.6	43.3	40.9	27.5	60.3	39.8

Source: KNSO (Raw data from a two percent sample from censuses of each year).

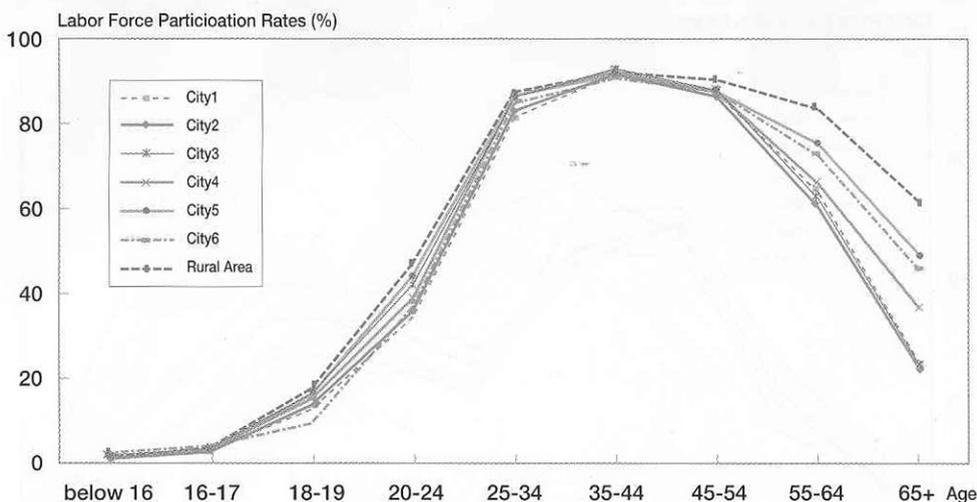
It is the general norm that men should be responsible for the economic support of the family. This is reflected in the labor force participation rates shown in Table 8.4. According to this table, those currently married show fairly high rates of labor force participation above 85 percent in all census years. Those divorced show the second highest level of labor force participation, followed by the singles and then by the widowed.

The traditional norm regarding sex roles exempts women from taking economic responsibility for the family while requiring them to do housekeeping, childbearing, child-rearing, and taking care of the elderly. However, women's understanding as well as the general public's understanding of marriage and working outside the home has been changing in recent years. This is revealed in the data. For example, until 1995, labor force participation rates were higher among single women than among married women. However, in 2000 the labor force participation of married women became slightly higher than that of single women. Of the four categories of marital status, labor force participation rates have been highest among divorced women but lowest among widowed women in every census year.

5. Labor Force Participation by Residential Location and Migration

Residential location and migration are other factors that affect the labor force participation of the population. Employment opportunities are different between urban areas and rural areas. Even within urban areas, such

Figure 8.1 Male Labor Force Participation Rates by City Size, 2000



Notes: City 1: Mega city (over 5,000,000 population)
 City 2: Large city (1,000,000-4,999,999 population)
 City 3: Medium city (500,000-999,999 population)
 City 4: Medium-small city (200,000-499,999 population)
 City 5: Small city (100,000-199,999)
 City 6: Petite city (under 100,000 population).

The labor force participation rates for rural areas are displayed for comparative purposes.

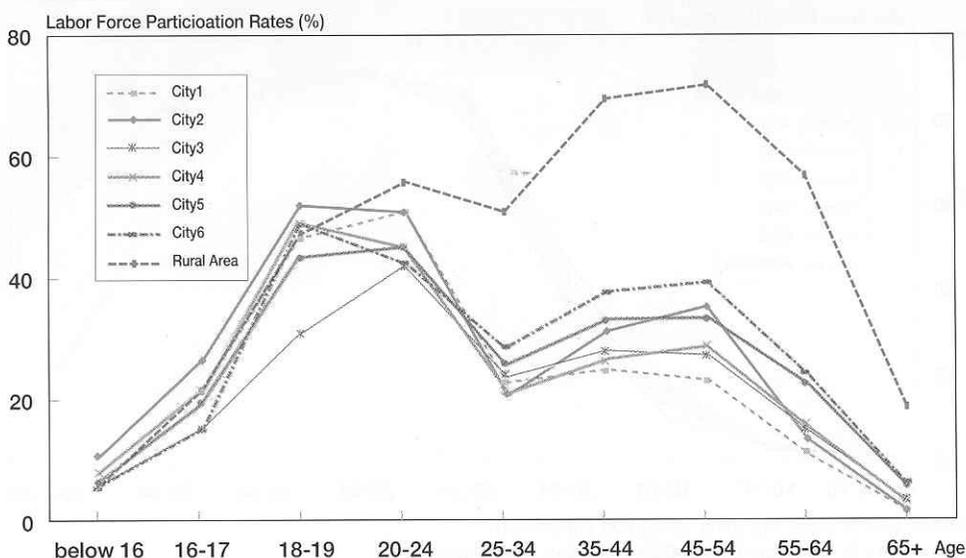
Source: KNSO (Raw data from a two percent sample from the 2000 Population and Housing Census).

opportunities vary according to the size of cities. Migration experience in general is closely related to the economic activities of the migrant. This section first examines male labor force participation rates in urban areas in 2000. In doing this, the section also investigates female labor force participation rates in urban areas in 1980 and 2000. Labor force participation rates are examined by the size of the city and are compared with rates in rural areas. Then it analyzes the effects of migration experience on the labor force participation of migrants.

1) Labor Force Participation Rates by Size of City

The labor force participation rates of urbanites in 2000 vary to a great extent according to the size of the cities they lived in. As shown in Figure 8.1, the male labor force participation rates of age groups except for the prime age (35-44 years) varies by the size of the city. For example, the labor force participation rate of young men aged 18-19 years was somewhat higher in cities of middle range than in cities of two extreme sizes, "mega" city and "petite"

Figure 8.2 Female Labor Force Participation Rates by City Size, 1980



Note: See Figure 8.1 for explanations for City 1 through City 6.

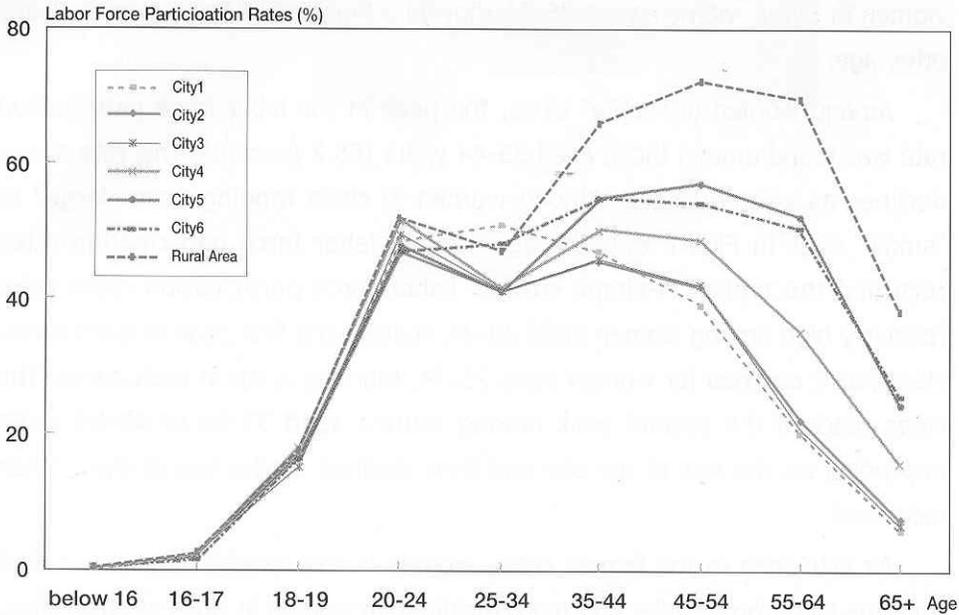
The labor force participation rates for rural areas are added for comparative purpose.

Source: KNSO (Raw data from a two percent sample from the 2000 Population and Housing Census).

cities in Figure 8.1. Men aged 45 and over showed significant variation in labor force participation rates by the size of city. In "mega" cities and in "large" cities, the labor force participation rates began to drop rapidly as age increased, whereas in the smaller cities the drops with increased age were less steep. In other words, older men in larger cities tended to retire from the labor force at an earlier age than those in smaller cities. The age specific labor force participation curve for rural areas is added to the figure for comparative purposes. It shows that men in urban areas regardless of the size of the city retire at younger ages than men in rural areas.

The age specific labor force participation rates for women have greatly changed between 1980 and 2000 as can be seen by a comparison of Figure 8.2 and Figure 8.3. In 1980 the curves of the female labor force participation rates had the typical M-shape regardless of city size. The highest rate of labor force participation was found among women aged 18-24 years. The labor force participation rates of women at the age of childbearing and child rearing (25-34 years) is lower than that of younger women. Another peak is found for women

Figure 8.3 Female Labor Force Participation Rates by City Size, 2000



Note: See Figure 8.1 for explanations for City 1 through City 6.

The labor force participation rates for rural areas are added for comparative purpose.

Source: KNSO (Raw data from a two percent sample from the 2000 Population and Housing Census).

aged 35-44 years and 45-54 years. However, the labor force participation rate for these age groups is much lower than the first peak found at younger ages. This is true regardless of city size. Among women aged 35 or over, the highest rate of labor force participation is found among those in the smallest cities, while the lowest rate is found among those in the largest cities.

In 2000 the curves of the age specific labor force participation rates for women living in the largest cities and for women in the smallest cities was no longer M-shaped. The labor force participation rates of young women under 25 varied slightly by the size of city. However, the labor force participation rates of women 25 years or older varied greatly by the size of city. For example, among women aged 25-34 years, those who lived in "mega" cities or in "petite" cities participated more in the labor force than those who lived in cities of other sizes did.

Indeed, women in this age group who live in a "mega" city (Seoul) recorded a higher rate of labor force participation (50.9 percent) than women who lived in

cities of other sizes or rural areas. In terms of the age specific participation of women in Seoul, women aged 25-34 showed a higher rate than women of any other age.

Among women in "petite" cities, the peak in the labor force participation rate was found among those aged 35-44 years (55.2 percent). This rate slowly declines as age advances. Among women in cities ranging from "large" to "small" sizes in Figure 8.3, the age specific labor force participation rates recorded the typical M-shape curves. Labor force participation rates were relatively high among women aged 20-24, making the first peak in each curve. However, it declined for women aged 25-34, marking a dip in each curve. The rates reached the second peak among women aged 35-44 or 45-54 years depending on the size of the city and then declined as the age of the women increased.

As with men in the largest cities, women in the largest cities also exited from the labor force earlier and more rapidly than women in cities of other sizes. Among women aged 45 or over, those in "small" and "petite" cities recorded the highest rate of labor force participation while those in the "mega" city (Seoul) recorded the lowest rate. Compared to women in rural areas aged 35 or over, however, their counterparts in urban areas recorded low rates of labor force participation regardless of the size of the city.

2) The Effect of Migration Experience on Labor Force Participation

The relationship between migration and labor force participation has been assessed from various theoretical and empirical approaches. These include the human capital approach, the neoclassical economic approach, family resource theory, and gender role theory (Sjaastad, 1962; Mincer, 1978; Shihadeh, 1991; Bielby and Bielby, 1992). However, there have been few in-depth studies in this field, especially for the female labor force in Korea.

Migration is broadly divided into two types based on the unit of migration: family migration and individual migration. The human capital approach focuses on the beneficial effects of individual migration on the labor force participation of the migrants. The neoclassical economic approach, family resource theory, and gender-role theory pay attention to family migration. They focus particularly on

the husband-wife dynamics in the process of migration and their effect on the labor force participation of the husband and wife. Many studies based on these theories report that the husband plays the principal role in making decisions regarding migration. In doing so, he considers his own job opportunities first; thus, the economic opportunities and activities for married women are negatively affected in the case of family migration.

Four items on residential place were included in the 2000 Population and Housing Census: the place of birth, and residential area in 1995, 1999, and 2000. By defining migration as an event of changes in residence crossing the boundary of a county, this study calculated the number of migrations experienced by individuals. The major finding is that the relationship between migration experience and labor force participation varied by age for both sexes. Among young people, migration experience positively affected the chances for labor force participation. Young men who migrated more frequently participated in the labor force more actively compared to young men with less experience of migration. Among those of prime working age, the positive effect of migration experience on labor force participation became significantly weakened. Among older people, the migration experience has negatively affected the chance for labor force participation.

The age at which the effect of migration experience changes from a positive one to almost null, or even into a negative one, varied by sex and place of residence. For example, migration experience proved to have a strong positive effect on labor force participation for men in urban areas aged 34 or less and for men in rural areas aged 24 years or less. The strength of the positive effect became significantly weakened for men aged 35-54 years in urban areas and for men aged 25-44 in rural areas. The effect became strongly negative for men aged 55 or over in urban areas and men aged 45 or over in rural areas.

On the other hand, migration experience had a very strong positive effect for teenage females in both urban and rural areas. For women aged 20-24 in urban areas, the effect was still positive but weak. For women in the same age group in rural areas, the effect was strongly negative. For women aged 25 or over, the effect was strongly negative in both urban areas and rural areas. In other words, migration experience enhanced the chance of labor force

participation for unmarried women but discouraged married women's labor force participation. These results support the findings of previous studies.

6. Informal Sectors in Urban Areas

The size of the urban informal sector was estimated using two percent sample data from the 2000 Population and Housing Census. This study used the estimation method suggested by the ILO (ILO, 1993: 7; 2002: 132-135; Gilbert, 2001: 54-59). It is assumed that the informal sector consists of the self-employed without employees, unpaid family workers, workers in domestic services, and employees in small scale businesses with 4 or less employed. The estimate shows that 40.8 percent of total employed persons were in the informal sector as of 2000. The majority of the self-employed without employees (72.2 percent) were men while the majority of unpaid family workers (89.4 percent) and the majority of domestic service workers (80.2 percent) were women. Of those engaged in small businesses, 18.0 percent were in manufacturing industries, 34.0 percent in wholesale and retail industries, and 24.0 percent in the industrial category of restaurants and hotels (for a detailed estimation procedure, see K. Min, 2002: 423).

III. Occupation and Industry

1. Occupational Composition by Age and Sex

Occupational structure in Korea has drastically changed since Korea has transformed into an industrial and a post-industrial society. The main feature of changes in occupational structure can be characterized by the consistent increase in professional and administrative occupations and a drastic decrease in agricultural occupations. This change is clearly shown in Table 8.5.

First of all, the increase in the proportion of workers in professional occupation is remarkable. The share of professional occupations was only 3.2 percent in 1970, but increased to 16.3 percent in 2000. From 1970 to 2000, the change in the proportion in professional occupations was 13.1 percentage points.

Table 8.5 Occupational Composition of Workers, 1970-2000

(Unit: %)

Occupation	1970	1975	1980	1985	1990	1995	2000
Professional	3.2	3.3	4.5	5.8	7.4	10.5	16.3
Administrative	1.0	0.8	1.1	1.5	2.1	4.3	4.6
Clerical	5.9	6.7	9.5	11.5	15.4	14.5	14.3
Sales	10.2	10.5	12.1	15.5	14.0	15.8	12.7
Service	6.7	6.5	7.1	10.8	8.8	11.8	9.7
Operators and laborers	21.8	23.0	28.1	30.3	31.6	27.0	28.8
Farming, forestry and fishing	51.2	49.2	37.6	24.6	20.7	16.1	13.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: EPB/KNSO (*Population and Housing Census Report, various years*).

Another occupation with remarkable growth is clerical work. The proportions of workers in clerical occupations changed from 5.9 in 1970 to 14.3 in 2000, showing the increase of 8.4 percentage points between 1970-2000. Although the share of those in administrative occupations has not been as great as those in other occupations throughout the years, the increase in administrative occupation is noteworthy. As a result, the proportion of occupations with relatively high prestige reached slightly over 20 percent in 2000.

In contrast, a decline in the proportion of occupations related to farming, forestry and fishing from 1970 to 2000 is quite conspicuous. In 1955, about 80 percent of workers had occupations in farming, forestry or fishing. However, the proportion of workers in these occupations has decreased very rapidly. The proportion in these occupations was still more than 50 percent in 1970. The proportion, however, shrank to 13.6 percent in 2000. Thus, the change in the proportion involved in farming, forestry and fishing occupation between 1970-2000 was as great as 37 percentage points.

The occupations of farming, forestry and fishing, clerical occupations, sales occupations, and operators and laborers increased greatly until 1990. Then, the proportion of workers in these occupations fluctuated between 1990 and 2000. For instance, the share of operators and laborers reached a peak of 31.6 percent in 1990. The proportion decreased to 27.0 in 1995 and then reversed to 28.8 percent in 2000.

A dramatic decrease in the number of workers in farming, forestry and

fishing, and an increase in professional and administrative occupations and low-skilled laborers between 1970-2000 vividly reflects the transformation of Korean society into an industrial and a post-industrial society from a traditionally agricultural society. In particular, the fluctuation of the proportion being operators and laborers in the last decade indicates that manufacturing-centered industrialization based on cheap labor has peaked in Korea.

1) Changes in Occupational Structure by Sex

There is a remarkable difference in occupational structure by sex. According to Table 8.6, the occupational group with most male workers in 2000 were operators and laborers (35.9 percent). The next largest category of occupation for male workers was professional occupations (16.7 percent). Clerical occupations followed this occupational group in 2000.

The share of operators and laborers among male workers peaked in 1990 at 37 percent. But the rate of increase in the occupations of operator and laborer between 1985 and 1990 was negligible. Between 1985 and 1990, the change in this category was only one percentage points. Afterwards, the share of operators and laborers fluctuated from 33.9 percent in 1995 to 35.9 percent in 2000. The stagnation of this occupational group for males demonstrates that economic growth based on the traditional manufacturing industry in Korea reached its limit in the 1990s.

Neither blue collar nor white collar workers increased substantially in the 1990s. The share of white collar workers reached its peak in 1990 and then decreased. This pattern is also found for blue collar workers. As of 2000, 13 percent of men had clerical jobs.

Sales and service occupations are not an exception to this trend. In the case of service occupations, the share of total workers peaked in 1995 and then declined. A relatively small proportion of male workers can be found in service occupations. Only 5.8 percent of male workers belonged to this category in 2000. A very similar trend can be found for sales occupations. The proportion for sales occupations had increased to its peak in 1995 and then began to decline.

A remarkable change can be found in the proportion of male workers in farming, forestry and fishing. It shrank to 11.4 percent in 2000, a drastic decline

Table 8.6 Occupational Composition of Male Workers, 1970-2000

(Unit: %)

Occupation	1970	1975	1980	1985	1990	1995	2000
Professional	3.8	4.1	5.2	5.9	7.0	9.9	16.7
Administrative	1.4	1.3	1.6	2.3	3.0	6.3	6.9
Clerical	7.6	8.5	10.0	12.4	15.3	13.7	13.0
Sales	10.5	11.1	12.3	13.6	13.6	14.8	10.4
Service	4.5	4.6	5.4	6.9	6.4	8.5	5.8
Operators and laborers	25.7	27.4	32.9	36.0	37.0	33.9	35.9
Farming, forestry and fishing	46.3	43.0	32.5	22.7	17.5	13.0	11.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

when compared to 46.3 percent in 1970.

One of the main trends in the occupational structure for men between 1970 and 2000 was the continuous increase of workers in professional and administrative occupations. As of 2000, one of four male workers was employed in professional or administrative work. This is substantial growth considering that 5.2 percent of male workers were employed in such occupations in 1970.

As shown in Table 8.7, women's occupations have also experienced great change in the last three decades. As with men, women's participation in professional and administrative work increased between 1970 and 2000. The proportion of female workers in professional occupations in 1970 was only 2.1 percent. In 25 years, the proportion came to exceed 10 percent. The growth of female participation in professional work has not stopped even after it reached 11.8 percent in 1995. As of 2000, the proportion of women in professional occupations was recorded at 15.7 percent.

Even though an increase of women in administrative occupations has been observed since 1980, the proportion of women in this category still remains at a negligible level: as of 2000, it was less than one percent.

There was active participation of women in the manufacturing sector until the early 1990s as the transformation of Korea into an industrial society was accelerated. The proportion of female workers as operators and laborers was 21.3 percent in 1985 and 21.0 percent in 1990. But as Korean society began to move into a post-industrial society, women's participation in blue collar jobs

Table 8.7 Occupational Composition of Female Workers, 1970-2000

(Unit: %)

Occupation	1970	1975	1980	1985	1990	1995	2000
Professional	2.1	2.1	3.5	5.3	8.3	11.8	15.7
Administrative	0.0	0.0	0.0	0.1	0.2	0.6	0.9
Clerical	2.8	4.0	8.6	10.2	15.5	16.0	16.4
Sales	9.6	9.5	11.6	18.3	14.6	17.7	16.7
Service	10.8	9.3	9.9	17.0	13.3	17.8	16.1
Operators and laborers	14.7	16.2	19.9	21.3	21.0	14.2	17.2
Farming, forestry and fishing	59.8	58.8	46.4	27.6	27.0	21.5	17.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

began to fluctuate in the 1990s. The proportion of female workers being operators and laborers dropped to 14.2 percent in 1995 and then increased up to 17.2 percent in 2000. Nonetheless, the proportion of female workers in this occupation in 2000 was less than that of 1985 and 1990.

Women have increasingly chosen white collar occupations. The proportion of women in clerical occupations was only 2.8 percent in 1970. However, it became more than 10 percent in 1985. Since then, it continues to increase and reached 16.4 percent as of 2000. Although women's participation in the manufacturing sector has been faltering in recent years, the increase of women in white collar occupations has not been interrupted even after the economic crisis of the late 1990s.

As with the compositional changes of occupation for men, women have also withdrawn from occupations in farming, forestry and fishing. This category of occupation had the greatest proportion of female workers in 1970. The proportion of female workers in farming, forestry and fishing was almost 60 percent in 1970. As women increasingly found occupations outside farming, forestry and fishing, however, the proportion in that category began to drop drastically. The proportion of female workers in farming, fishing and forestry was only 17 percent as of 2000.

Unlike male workers who are concentrated in jobs such as operator and laborer, female workers were relatively evenly distributed across various types of occupations as of 2000. The proportion of female workers in other than

Table 8.8 Female Sex Ratio by Occupation, 1970-2000

(Unit: %)

Occupation	1970	1975	1980	1985	1990	1995	2000
Total	54.3	64.7	57.7	63.8	50.7	54.9	60.8
Professional	29.6	33.8	38.6	54.7	60.4	65.7	57.1
Administrative	3.6	3.9	1.5	3.8	3.7	5.3	8.1
Clerical	20.4	30.4	49.8	52.7	51.6	64.0	76.6
Sales	50.2	56.4	54.4	86.2	54.7	65.7	97.8
Service	131.5	132.8	105.1	157.5	105.5	115.1	169.3
Operators and laborers	31.5	38.8	35.0	37.9	29.0	23.0	29.2
Farming, forestry and fishing	70.8	89.6	82.2	77.6	78.7	92.3	90.5

Note: Female sex ratio = (number of women/number of men)X100.

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

administrative occupation was between 15.7 and 17.2 percent in 2000.

Along with the sudden increase in women's labor force participation, sex-biased occupations tend to disappear over time. Nevertheless, several occupations still show a strong bias toward a specific sex. Table 8.8 shows the trends of the female sex ratio in various occupations from 1970 to 2000.

Service is the only category where women outnumber men. This is true for all years 1970-2000. In both 1980 and 1990, the sex composition in this occupational category approached evenness. But the female proportion in the service sector has again developed since 1990. After the Asian financial crisis, which began in late 1997, women seemed to flow more to service sectors than to any other occupational group. As of 2000, 169 women per 100 men were working in the service sector.

Except for service occupations, the number of males has always outstripped that of females in all occupations. This, first of all, is caused by the fact that the absolute size of the male workforce is greater than that of the female. However, the overall pattern is that the male proportion has decreased in almost all occupations with the increase in female labor force participation.

The occupations showing a decrease in the difference between the number of male workers and female workers were sales, farming, forestry and fishing. As of 2000, 98 women per 100 men were working in the sales sector and 90.5 women per 100 men were employed in farming, fishing and forestry. The diminishing gap between the sexes is far more remarkable in the sales sector.

Only 50 women per 100 men worked in the sales sector in 1970. Between 1970 and 1980, a number of women flowed into the sales sector. This expanded to 54 women per 100 men in sales occupations in 1980. In the following decade, the increase of female workers in the sales sector was not substantial. In the 1990s, however, women once again led the sales sector to a great extent, which resulted in 98 women workers per 100 men in this category in 2000.

Similar patterns are found for clerical and professional occupations. In the case of clerical occupations, the ratio of female workers relative to 100 male workers was only 20 in 1970. As women have increasingly taken jobs in the clerical sector, this ratio reached 53 women per 100 men in 1985. Even after the Asian financial crisis, the number of women in clerical occupations continued to grow. As of 2000, 77 women per 100 men worked in clerical occupations.

As in clerical occupations, the increase of women in professional occupations is remarkable. In 1970, 30 women per 100 men worked in the professional sector. Between 1970 and 2000, a large number of women had taken jobs in the professional sector. The female sex ratio in professional occupations peaked in 1995, being 66 females per 100 males. The female sex ratio in this category of occupation slightly diminished in 2000.

It is also interesting that the difference in the number of male workers and female workers diminished in the occupations of farming, forestry and fishing although the absolute size of the workforce had shrunk substantially for both males and females. In 1970, 71 women per 100 men had occupations in farming, forestry and fishing. Between 1970 and 2000, the female sex ratio in this category fluctuated within a range of 70.8 and 92.3 women per 100 men.

Along with administrative occupations, the occupation in which the female sex ratio has been lower is operators and laborers. The absolute size of female workers in the occupations of operator and laborer is smaller than the size of female workers in other occupations. Second, young women increasingly participated in the labor force as operators and laborers in the early period of economic development based on manufacturing industry. However, not as many women as in the past led this sector in recent years because industrial development do not demand a cheap female labor force today. As of 2000, only 29 women per 100 men were engaged in the labor market as operators and

laborers. Thus, the occupations of operator and laborer are still dominated by men in terms of absolute size.

2) Characteristics of Age by Occupation

Korean society has become an ageing society. The proportion of the population aged 65 or over reached seven percent in 2000. Not only has the whole population become aged, but also the timing of the transition to first occupation has been delayed partly due to the enhancement of the overall education level. This has resulted in an ageing structure of the labor force in Korean society. Table 8.9 shows the changes in occupational structure by median age for male workers.

The median age of all males in the labor market has increased over time. It was between 34 years and 37 years until 1995, but reached 40 years in 2000. Along with population ageing, the labor force of males is also ageing.

The most aged occupation group for males was the occupation of farming, forestry and fishing in 2000. The median age in this occupation was 57 years. It is very clear that the workers in this group are more aged than those in other types of occupation. Furthermore, this particular group has been ageing at a faster rate than any other category. The median age in this category was just 33 years in 1970, which was lower than that of white collar, sales, professional and administrative occupations. However, it increased by 24 years between 1970 and 2000. Such a rapid increase is not found in any other occupation.

The next oldest age is found in administrative occupations. As of 2000, the median age of males in administrative occupations was 43 years, far lower than that of farming, forestry and fishing. In terms of changes over time, there were no significant changes in median age for this occupation. It fluctuated within the range of 42-44 years between 1970 and 2000. A similar phenomenon has also occurred in professional and clerical occupations. The median age for both professional and clerical occupations has changed by one or two years in the last three decades.

Another occupation that has experienced rapid ageing of the labor force is operators and laborers. The median age of male operators and laborers was 31 years in 1970, but increased to 39 years in 2000.

Table 8.9 Median Age of Male Workers by Occupational Group, 1970-2000

(Unit: %)

Occupation	1970	1975	1980	1985	1990	1995	2000
Total	34	34	35	36	37	37	40
Professional	35	36	36	36	36	36	37
Administrative	42	42	42	44	43	43	43
Clerical	34	34	33	34	35	35	35
Sales	36	36	36	38	42	42	39
Service	31	33	35	37	39	39	38
Operators and laborers	31	31	31	33	34	34	39
Farming, forestry and fishing	33	37	42	46	50	50	57

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

As of 2000, no substantial difference can be found in the median ages of male workers in all occupations except for farming, forestry and fishing. They are more or less distributed within a range of 37 years (for professional occupations) and 43 years (for administrative occupations). The median age for farming, forestry and fishing was the only one with an exceptionally aged labor force. This indicates an exodus of younger people from the agricultural sector and a change in the structure of the economy.

The age structure of occupation for women is somewhat different from that for males. This is illustrated in Table 8.10. As shown in this table, the overall changes in the median age of female workers shows a pattern similar to that of male workers. The median age of women who worked in 1970 was 33 years. It increased to 39 years in 2000. Between 1970 and 2000, the median age for women in the labor force grew by 6 years as it did for men. However, for females, variation in the median age of workers by occupation is great.

The most aged occupation for females is that of farming, forestry and fishing, as it is for males. The median age of female workers in this category was 37 years in 1970. But it increased by 21 years between 1970 and 2000. Even the age of women in the agricultural sector was higher than that of men as of 2000. But the pattern of increase in the median age in the occupations of farming, forestry and fishing for women was nearly the same as that for men.

Two occupational groups where the median age of women increased rapidly between 1970 and 2000 were operators and laborers, and service jobs. The median age was 22 years for both occupational groups in 1970. While the rate

Table 8.10 Median Age of Female Workers by Occupational Group, 1970-2000

(Unit: %)

Occupation	1970	1975	1980	1985	1990	1995	2000
Total	33	33	34	36	35	37	39
Professional	26	26	27	27	27	28	29
Administrative	35	42	42	42	39	35	41
Clerical	22	22	22	22	23	24	27
Sales	38	37	37	38	36	36	39
Service	22	24	32	37	38	40	41
Operators and laborers	22	20	21	30	29	38	42
Farming, forestry and fishing	37	39	43	47	51	55	58

Source: EPB/KNSO (*Population and Housing Census Report, various years*).

of increase in the median age for these two groups varied depending on the time period, the median age as of 2000 was almost identical: 42 years for operators and laborers and 41 years for service occupations.

Two other occupations with a higher median age were administrative and sales occupations. For these occupations, however, gains in median age in the last three decades were not as great as those of service occupations and operators and laborers.

In comparison to the age structure of occupations for men, the median ages of women for clerical and professional occupations were far lower than those of women in other occupations. The median age of women in clerical occupations was only 27 years in 2000, which was 12 years less than that for sales occupations in the same year. The median age of women in professional occupations was also lower and relatively stable across all periods.

In sum, the workforce for both males and females has been ageing in the past three decades. At the same time, the ageing of the labor force has progressed in a different manner according to sex: for men, median age has become similar across different types of occupations; for women, it has become more widely varied.

3) Men's Occupations and Women's Occupations

It is true that the barrier against a specific sex to enter certain categories of employment has been removed or weakened in recent years. Nonetheless, a

Table 8.11 Classification of Men's and Women's Occupations, 2000

Occupation	Men	Women
Legislators, senior officials and managers	Enterprise senior officials, production and operations department managers	
Professionals	Architects and civil engineers; electrical, electronic and mechanical engineers, chemical engineers and metallurgists	Nursing and midwifery professionals, pre-primary education teaching professionals, primary education teaching professionals, education institute teaching professionals excluding formal school education
Technicians and associate professionals	Architect and civil engineering technicians, electrical, electronic and mechanical technicians, ship and aircraft controllers and technicians	Medical examination assistants, college, university teaching assistants and primary, secondary education teaching assistants, education associate professionals besides formal school education
Clerks		Information and reception clerks
Service workers	Police officers, fire-fighters and emergency buoy, protective services workers	Personal care and related workers, hairdressers, barbers, beauticians and related workers, cooks, food service related workers
Sales workers		Door-to-door salespersons and vendors
Skilled agricultural, forestry and fishery workers		
Craft and related trades workers	Building frame and related trades workers, building finishers and related trades workers, metal moulders, welders and related trades workers, transport machinery mechanics, agricultural or industrial machinery fitters and mechanics, electrical and electronic equipment fitters and mechanics	
Plant, machine operators and assemblers	Metal processing plant operators, chemical processing plant operators, power production and related plant operators, motor vehicle drivers, construction and other mobile plant operators	
Elementary occupations	Building caretakers, watch persons, mining and construction labourers, transport related labourers	Domestic and related helpers, cleaners and launderers

Note: The criteria to define female dominant occupations is below 50 of sex ratio in a given occupation. For men's occupations, the criteria is over 1,000 of sex ratio in a given occupation.

Source: KNSO (2001j).

number of occupations still mainly consist of a specific sex nowadays. For instance, most elementary school teachers are women. On the one hand, this may be caused by explicit or implicit sex discrimination in the stage of job entry. On the other hand, such discrimination, in turn is related to the social customs and norms prescribing males and females to a specific types of occupation.

This results in "men's occupations" and "women's occupations" in contemporary Korean society. In this section, the 2000 Census is analyzed to figure out what the men's and women's occupations are. Table 8.11 provides specific details.

In general, women's occupations are more likely than men's to be concentrated in those with a lower prestige. Within the professional groups, women are mainly kindergarten school teachers, elementary school teachers, midwives and so on. These groups of occupations have a relatively low social status among professional occupations. In contrast, most male professionals are engineering specialists with advanced skills. These include architects and civil engineers, electrical/electronic and mechanical engineers, and chemical engineers.

It is easy to find many women in occupations which are traditionally regarded as women's work such as cooking, cleaning, food service and door-to-door sales. These occupations usually have lower social status. Men's occupations with lower social status, however, are largely in construction, security and low-skilled engineering.

Although women's participation in the labor market has increased, there are still clear distinctions between "men's occupations" and "women's occupations." This can be easily discerned by examining the sex ratio in each occupation group.

2. Recent Trends in Industrial Composition

Changes of occupational structure are closely related to those of industrial structure. Because the pace of change in industry is so fast, especially in recent years, the standards of classification of occupations and industries has been frequently altered in Korea. This makes it very difficult to compare industrial

structures across time. This section will examine changing industrial structures between 1995 and 2000.

As shown in Table 8.12, the category of industry containing the most workers was manufacturing in both 1995 and 2000. The proportion of workers in manufacturing was 23.4 percent in 1995 and 20.7 percent in 2000. Although the proportion has decreased in the last five years, more than a quarter of workers were still employed in manufacturing in Korea. The industrial category containing the next largest proportion of workers was wholesale and retail trade: 16.9 percent in 1995 and 15.7 percent in 2000. This category of industry is followed by agriculture and forestry: 15.6 percent in 1995 and 13.1 percent in 2000.

The decrease in the proportion of these categories of industry between 1995 and 2000 was greater than any other industrial sector. The percentage difference for the given five years was 2.7 percentage points for manufacturing, 2.5

Table 8.12 Industrial Composition of Workers, 1995 and 2000

(Unit: %)

Industry	1995	2000
Agriculture and forestry	15.6	13.1
Fishery	0.8	0.7
Mining and quarrying	0.2	0.1
Manufacturing	23.4	20.7
Electricity, gas and water supply	0.5	0.5
Construction	8.6	7.2
Wholesale and retail trade	16.9	15.7
Hotels and restaurants	6.4	7.5
Transport	4.6	4.8
Post and telecommunications	0.8	1.2
Financial institutions and insurance	3.6	3.7
Real estate, renting and leasing	1.5	1.7
Business activities	2.9	4.3
Public administration and defence; compulsory social security	3.8	3.9
Education	5.3	6.0
Health and social work	1.7	2.3
Recreational, cultural and sporting activities	1.3	1.8
Other community, repair and personal service activities	1.8	4.3
Private households with employed persons	0.3	0.4
Extra-territorial organizations and bodies	0.1	0.1
Total	100.0	100.0

Source: KNSO (1997, 2001j).

percentage points for agriculture and forestry, and 1.2 percentage points for wholesale and retail trade. This is closely related to the diversification of the industrial structure as Korean society transforms from an industrial society to a post-industrial one.

Contrary to decreasing trends in manufacturing, agriculture and wholesale and retail trade, the proportion of workers in other community, repair and personal service activities grew by 2.5 percentage points in the last five years. Likewise, the proportion in business activities increased by 1.4 percentage points; the proportion in education, by 0.7 percentage points. The proportion in health and social work, as well as that in post and telecommunications is also growing.

Change in the composition of industry has been occurring differently by the sex of the workers. Table 8.13 indicates changes of industrial composition between 1995 and 2000 according to sex. The industrial field in which most male workers are is manufacturing. The proportion of male workers in manufacturing was 25.9 percent in 1995 and 23.3 percent in 2000. The category containing the next largest proportion of male workers was wholesale and retail trade: 16.4 percent in 1995 and 14.5 percent in 2000. Other category of industry where more than 10 percent of male workers are found was agriculture and forestry.

In 1995, the largest proportion of female workers (21.6 percent) were employed in agriculture and forestry, the next largest were in manufacturing (19 percent), and wholesale and retail trade (17.8 percent). This is followed by hotels and restaurants (11.3 percent). However, the order changed in 2000; wholesale and retail trade had 17.8 percent female workers; agriculture and forestry, 17.1 percent; and manufacturing, 16.5 percent.

The proportion of workers in agriculture, forestry and manufacturing, and wholesale and retail trade decreased between 1995 and 2000 for both males and females. In particular, the percentage decrease in agriculture and forestry was more remarkable among female workers than among male workers.

In contrast, growing proportions in various kinds of service industries for employment by both sexes was noteworthy. In the case of males, the proportion

Table 8.13 Industrial Composition of Workers by Sex, 1995 and 2000

(Unit: %)

Industry	Male		Female	
	1995	2000	1995	2000
Agriculture and forestry	12.4	10.7	21.6	17.1
Fishery	0.9	0.8	0.6	0.6
Mining and quarrying	0.3	0.2	0.1	0.0
Manufacturing	25.9	23.3	19.0	16.5
Electricity, gas and water supply	0.6	0.6	0.1	0.1
Construction	12.1	10.5	2.2	1.6
Wholesale and retail trade	16.4	14.5	17.8	17.8
Hotels and restaurants	3.7	4.3	11.3	12.8
Transport	6.5	7.0	1.0	1.1
Post and telecommunications	0.9	1.4	0.5	0.9
Financial institutions and insurance	2.8	2.9	5.1	5.0
Real estate, renting and leasing	1.8	2.2	0.9	1.0
Business activities	3.3	5.0	2.2	3.1
Public administration and defence; compulsory social security	4.9	5.0	1.9	2.0
Education	3.8	4.0	7.8	9.4
Health and social work	1.0	1.3	2.9	4.0
Recreational, cultural and sporting activities	1.3	1.9	1.2	1.6
Other community, repair and personal service activities	1.3	4.3	2.8	4.3
Private households with employed persons	0.0	0.0	0.9	1.0
Extra-territorial organizations and bodies	0.1	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0

Source: KNSO (1997, 2001j).

in other community, repair and personal service activities increased by 3 percentage points between 1995 and 2000; the proportion in business activities, by 1.7 percentage points. Likewise, the proportion of female workers increased in business activities, education, health and social work and other community, repair and personal service activities.

IV. Conclusion

This chapter briefly sketched the history of the Korean labor force in terms of definitions, age and sex composition of the labor force, and labor force participation rates by various categories of the population. The data used for the analyses were drawn from successive population census reports since 1930. Also raw data from a two percent sample from population censuses since 1980 was

utilized for a more in-depth analysis.

Despite the frequent definitional changes of the labor force, a major trend can be glimpsed. Male labor force participation rates have been stable at around 70-75 percent. Such a stable, high level of economic activity by males seems to be related to the social norm dictating men's responsibility to support the family. In the meantime the female labor force has changed more dynamically. Not only has the overall rate of female labor force participation increased but age specific labor force participation rates have also changed tremendously. In the largest and the smallest cities the age-specific labor force curve was no longer the traditional M-curve as of 2000.

Another noticeable contrasting feature of labor force participation between males and females is the effect of migration experience. The effect was positive for men, but negative for women for most of their working lives. If it is desirable for women to more actively participate in the labor force both at the level of the national economy and at the individual level, efforts should be made to find ways leading women's experience of migration to their labor force participation in a positive manner.

In the second part of this chapter, occupational and industrial structures and their changes over time were examined. Overall changes in occupational structure can be summarized as a decrease in the proportion of workers in manufacturing and agricultural occupations and an increase in the proportion in professional and administrative occupations. Most men are still engaged in manufacturing work. Professional and administrative occupations have become more salient for men's work. In the meantime men are increasingly withdrawing from farming, fishing and forestry occupations. As of 2000, only 13.6 percent of male workers were engaged in agriculture, forestry and fishing.

Manufacturing also does not attract women as it did between 1960 and 1980. Women are not as likely to work in agriculture, forestry and fishing as in the past. Meanwhile, gains in professional and administrative employment among women was evident in recent years.

As occupations for women have become more diversified, female workers are evenly distributed across various occupations except for administrative

ones. This is quite distinct, compared to the case of male occupational structure.

As Korean society ages, the age structure of employees is also changing. In the last ten years, the age structure of occupations in agriculture, forestry and fishing has been ageing very rapidly so that the median age of those in this category of occupation was 57 years in 2000. Women's occupations have also experienced ageing. However, it is interesting that the age structures of professional and clerical occupations for women have remained relatively young, compared to those in other occupations.

Even though participation in the labor market by women has increased remarkably, women are more likely to have certain occupations than men. There still might be "men's occupations" and "women's occupations." Such segregation of occupation by sex could be a result of traditional norms dictating types of occupation as being suited to a specific sex. This unequal share deserves more attention because women are more likely than men to have occupations with a low social status.

The structure of occupations is very closely related to that of industry. Thus, changes in industrial structure usually correspond to changes in occupational structure. In this chapter, change in industrial structure was examined in the short-term period from 1995-2000. The main feature of changes in industrial structure was the decrease in the significance of manufacturing, agriculture, and wholesale and retail trade for both men and women. At the same time, various service sectors gained significance along with the advancement of industrialization. As Korean society develops into a post-industrial, information technology oriented society, changes in occupational and industrial structure are inevitable. Thus, Korean society should be ready to adapt to the newly developed occupational and industrial environment.

POPULATION DISTRIBUTION, INTERNAL MIGRATION AND URBANIZATION

Jin Ho Choi and Se-Hoon Chang

I. Introduction

Korea has experienced profound societal changes since the 1960s. Full scale industrialization began in the second half of the 1960s, and an unprecedentedly high economic growth rate was recorded in the 1970s. Concomitant with industrialization, urbanization has also proceeded very rapidly. The urbanization rate rose from 28 percent in 1960 to 79.7 percent in 2000, and the number of cities also increased from 27 in 1960 to 79 by 2000.

Urbanization was very rapid, particularly in the 1960s, in which the growth of one large city, Seoul, was prominent. Urbanization concentrating on large cities persisted until 1980. Since then satellite cities surrounding Seoul and regional industrial cities have grown fast. A massive migration from rural to urban areas has significantly contributed to this rapid urbanization together with the natural increase within the city.

While rapid industrialization and urbanization has brought about fast economic growth, they have also caused serious problems. Among them excessive population concentration and centralization in the Capital Region, as well as unbalanced regional development have been central policy issues for the

past several decades. To solve the problems, various policy measures have been adopted. However, the result of the continuous governmental efforts has not been satisfactory.

The main objectives of this chapter are to review the changes in population distribution and internal migration patterns among regions, and examine the key features of the urbanization process in Korea for the past four decades. The major sources of data for the analysis are from population censuses.

II. Data

Three kinds of data are available to conduct migration studies in Korea. These are the population census, internal migration statistics from the civil registration, and sample surveys.

1. Population Census

Population census data have been widely used in migration analysis. The Korean population census provides information on place of birth, place of residence five years ago, and of one year ago. The Korean census, starting from 1925, has been regularly conducted every 5 years. It was not until 1960 that the items on place of birth were included in the census. The place of residence five years ago has been surveyed since 1970; and the place of residence one year ago, since 1980.

The information concerning place of residence at different points in time is classified into three tiers from the smallest administrative units of *Eup*, *Myeon*, and *Dong* to the largest units of special cities and Provinces. Between these two tiers, there are City, County and Districts of Special Cities. This information provides material for the analysis of migration streams and the characteristics of migrants at various administrative units.

However, one significant drawback of using census data is that when we compare current residence with place of residence at a certain point in time, we cannot detect all the movement during the specified time period.

2. Civil Registration

Migration statistics from the civil registration in Korea were first published in 1971. Since then the *Annual Report on Internal Migration Statistics* has been published annually. It includes information on migration status, place of origin and destination of migrants in every administrative unit of province, city, and county by age and sex.

Since migration statistics cover all reported movement in the given year, they are much more comprehensive than the statistics from the census data in which repeated or returning movement cannot be identified. Nonetheless, migration statistics also have limitations. Because the statistics are based on the self-reporting of movement by individuals, questions are occasionally raised concerning reliability. Some may have moved but not reported it, while others may have reported movement but had not actually moved. Despite the possibility of such under or over enumeration, it has been generally agreed that the migration statistics from the civil registration have been reasonably reliable in recent years. The quality of migration statistics has improved due to many factors including computer-aided documentation as well as enforced registration of motor vehicles in their actual place of residence.

3. Sample Survey

In addition to the census and registration data, sample surveys are valuable sources for the study of migration. They are useful particularly in analyzing reasons for moving, the selectivity of the migrants, and consequences of migration. Most sample surveys have been done by individual researchers on a small scale.

In recent years, the Korea National Statistical Office (KNSO) has conducted special migration surveys on a national scale. For instance, the special survey in 1983 covered individual migration history, migration and living conditions in the last 12 months, and intent to move in the near future. Also, in the 1997 special survey, 54 items were asked including migration history since birth, place of last residence, place of residence in the previous year, place of residence five years ago, reasons for moving, and economic activity.

III. Research on Internal Migration and Urbanization

There are not many studies on internal migration in Korea. Most studies on migration have been based on census data. Because information on the place of residence five years ago is not available in censuses prior to 1970, studies on internal migration before 1970 dealt with regional migration by age and sex using the census survival ratio method (Yu, 1974, 1975, 1980; T.H. Kwon, 1977).

Since 1980, when the items concerning place of residence one year ago as well as that of five years ago were included in the census, a number of studies have examined the volume of migration, migration between urban and rural areas, migration among as well as within regions and the characteristics of various streams of migration (Kim and Lee, 1976; Kim and Sloboda, 1981; Lee and Lee, 1983; J.H. Choi, 1982, 1986, 1994, 1997; Noh, 1991).

Some studies have shown a special interest in migration toward the Capital Region (Moon and Han, 1989). There have been several studies conducted as a part of the census monograph series after each census (Choe et al., 1989; J.H. Choi, 1993; N.I. Kim et al., 1997).

Migration analysis based on census data cannot properly deal with the determinants and consequences of migration. For this reason, survey data can be more valuable and useful. The KNSO conducted nation-wide sample surveys on internal migration in 1966, 1983 and 1997. The 1966 Special Demographic Survey included several items on migration, and the results were outlined with tabulations (Choi and Park, 1969).

The second national survey on migration in 1983 was analyzed at the micro level: the migration history of individuals, types of migration, the relation between migration and fertility, and the association between migration and social mobility (Choe et al., 1986; Kwon and Jun, 1990). Besides these national migration surveys, a couple of sample surveys have dealt with return migration (O.J. Lee, 1978; J.H. Choi, 1984). Some studies focused on reasons for moving and desire to move within the Capital Region (KRIHS, 1992). More analysis at

the micro level is needed for a better understanding of the selectivity of migration, factors affecting migration and the consequences of migration.

Urbanization is a spatial representation of modernization and comes with various socio-physical phenomena: the urban concentration of the population, congestion in built environments, the formation of urban lifestyles and the deepening of local conflicts. Thus, urban studies have been conducted from various perspectives encompassing demographic, geographical, cultural and socio-political approaches.

This study attempts to analyze urbanization in Korea, especially from a demographic perspective. It has a shortcoming in treating only a few aspects of urbanization just as many studies based on other perspectives. Nevertheless, by analyzing the urbanization process at the macro level, the current study provides more insight on historical trends and characteristics.

A number of demographic studies on urbanization in Korea have paid attention to three main issues: over-urbanization, the importance of rural-to-urban migration as a factor causing urbanization, and the unequal development between cities. This study will also deal with these three issues.

First, there have been debates on over-urbanization in relation to industrialization. Some argue that urbanization has occurred more rapidly than industrialization in developing countries and the case of Korea is not an exception (D.S. Kim, 1991; J.H. Choi, 1991; Davis and Golden, 1955). According to them, a large number of migrants from rural areas have rushed to the city and suffered from a shortage of employment opportunities. The migrants have become a part of the urban poor sooner or later, and chronic urban problems such as the insufficiency of urban infrastructure, crime, and poverty have prevailed.

Other scholars have different views on over-urbanization in developing countries. They argue that given the experience of Western societies, cities in developing countries should not be understood as experiencing over-urbanization. They point out that urbanization in Western societies was not in step with industrialization at the early stage of modernization. They also argue that the "over-urbanization" hypothesis does not have a proper grounding since

it separates urbanization from its social context. Over-population in the city can be a transitory phenomenon appearing in the population redistribution process through the movement of people from over-populated rural areas into cities (Seok, 1986; Cho, 1978). Given these controversial views on urbanization, this chapter will examine the existence of over-urbanization in Korea.

Second, factors of urbanization need to be examined. In general, push and pull factors such as rural over-population and plentiful employment opportunities in the city interact, accelerating population migration to the city. But rural-to-urban migration is not the only source of urban population growth. The urban population can also be increased through territorial expansion of city boundaries or population reproduction in the city (J.H. Choi, 1997; Choi and Choi, 1993; T.H. Kwon, 1988). Thus, it is necessary to examine the role of these factors in the urbanization process.

Third, there have been arguments about the production and reproduction of the prime city with respect to inter-city inequalities. Some assert that an unequal growth strategy led by the state accelerated population centralization into Seoul and the Capital Region, thereby strengthening the position of Seoul as the prime city (S.N. Moon, 1993: 47-50; Moon and Jun, 1992: 65-76; Hong, 1986: 90-92). Others emphasize that relations among cities are not based on "zero-sum" relationships in the long run, while inter-city inequalities could widen temporarily due to different speeds of growth. According to this view, the centralization of Seoul and the Capital Region does not interrupt the growth of other provincial metropolises and small local cities (Kang, 1993: 232-239; 1999: 77-79). This chapter will address this issue through the analysis of urban growth trends by city size.

IV. Population Distribution and Internal Migration

1. Population Distribution

1) Population Distribution by Province

The changes in the population distribution in Korea for the last four decades can be characterized by widening imbalances across regions mainly due to massive movement from rural areas to a few, large urban centers until the 1990s. However, since 1990, the absolute size of the population declined in Seoul and Busan, the two largest cities in Korea.

As shown in Table 9.1, the population of all provinces increased between 1960 and 1970 even with the massive migration from rural to urban areas. This increase in population size is primarily due to the high level of fertility in the 1960s. In terms of the proportion of the population, seven large cities and Jeju province experienced an increase between 1960 and 1970.

In the 1970s, however, all provinces except Jeju showed a decline in population. This decline of population in the provinces persisted during the 1980s with the exception of Gyeongnam province. As with the 1960s, the share of the total population of the seven largest cities and Gyeonggi province increased in the 1970s and 1980s.

The seven special cities and nine provinces in Korea can be classified into three groups in terms of population growth from 1960-1990. The first group is where the population growth rate was higher than that of the national average, and thus, their share of the total population increased. All the seven special cities, Gyeonggi province and Jeju province belong to this category.

The second group is where the size of the population grew, though their share of the total population declined. Chungbuk and Gyeongnam province are included in this group. The third group is the regions showing population decline in both absolute and relative terms. It includes Gangwon, Chungnam, Jeonbuk, and Jeonnam provinces.

A significant change in population growth for various regions was observed

Table 9.1 Size and Distribution of Population, 1960-2000

(Unit: 1,000 persons, %)

Province	1960	1970	1980	1990	2000
Entire country	24,989(100.0)	31,434(100.0)	37,436(100.0)	43,411(100.0)	46,136(100.0)
Major cities					
Seoul	2,445 (9.8)	5,525 (17.6)	8,364 (22.3)	10,613 (24.4)	9,895 (21.4)
Busan	1,164 (4.7)	1,876 (6.0)	3,160 (8.4)	3,798 (8.7)	3,663 (7.9)
Daegu	677 (2.7)	1,081 (3.4)	1,605 (4.3)	2,229 (5.1)	2,481 (5.4)
Incheon	401 (1.6)	643 (2.0)	1,084 (2.9)	1,818 (4.2)	2,475 (5.4)
Gwangju	314 (1.3)	484 (1.6)	728 (1.9)	1,139 (2.6)	1,353 (2.9)
Daejeon	229 (0.9)	407 (1.3)	652 (1.7)	1,050 (2.4)	1,368 (3.0)
Ulsan	207 (0.8)	271 (0.9)	535 (1.4)	805 (1.9)	1,014 (2.2)
Provinces					
Gyeonggi	2,348 (9.4)	2,710 (8.7)	3,850 (10.3)	6,156 (14.2)	8,984 (19.5)
Gangwon	1,637 (6.5)	1,865 (5.9)	1,791 (4.8)	1,580 (3.6)	1,487 (3.2)
Chungbuk	1,370 (5.5)	1,480 (4.7)	1,424 (3.8)	1,390 (3.2)	1,467 (3.2)
Chungnam	2,229 (9.2)	2,451 (7.8)	2,304 (6.2)	2,014 (4.6)	1,845 (4.0)
Jeonbuk	2,395 (9.6)	2,432 (7.7)	2,228 (6.1)	2,070 (4.8)	1,891 (4.1)
Jeonnam	3,239 (13.0)	3,511 (11.2)	3,052 (8.2)	2,507 (6.8)	1,996 (4.3)
Gyeongbuk	3,171 (12.7)	3,475 (11.1)	3,350 (9.0)	2,861 (6.6)	2,725 (5.9)
Gyeongnam	2,811 (11.2)	2,848 (9.1)	2,787 (7.4)	2,867 (6.6)	2,979 (6.5)
Jeju	282 (1.1)	365 (1.2)	463 (1.2)	515 (1.2)	513 (1.1)

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

between 1990 and 2000. During this period, the population of Seoul and Busan declined concomitant with the evolution of the metropolitan areas around these cities. For instance, the proportion of the total population in Seoul has decreased from 24.4 percent in 1990 to 21.4 percent in 2000, with a loss of 720,000 people. Also, for Busan its share of total population fell from 8.7 percent in 1990 to 7.9 percent in 2000.

Such changes in the pattern of population growth for the large urban center corresponds to the stages of urbanization proposed by Vanhove and Klaassen (1980). They argue that in the early stage of urbanization, population increases only in the central city. In the second stage, called the "stage of absolute concentration", population increases both in the central city and the suburbs, but the growth rate is much higher in the central city. In the third stage, the "stage of relative concentration", the population of the suburbs grows much faster than that of the central city. The population of the central city begins to decline in the fourth stage, the "stage of relative decentralization". In the last stage, the "stage

Table 9.2 Population Growth by Region, 1960-2000

(Unit: 1,000 persons, %)

Province	1960-1970	1970-1980	1980-1990	1990-2000
Entire country	6,445 (100.0)	6,002 (100.0)	5,975 (100.0)	2,725 (100.0)
Major cities				
Seoul	3,080 (47.8)	2,839 (47.3)	2,249 (37.6)	-718 (-26.3)
Busan	712 (11.0)	1,284 (21.4)	638 (10.7)	-135 (-5.0)
Daegu	404 (6.3)	524 (8.7)	624 (10.4)	252 (9.2)
Incheon	242 (3.8)	441 (7.3)	734 (12.3)	657 (24.1)
Gwangju	170 (2.6)	244 (4.1)	411 (6.9)	214 (7.9)
Daejeon	78 (2.8)	245 (4.1)	398 (6.7)	318 (11.7)
Ulsan	64 (1.0)	264 (4.4)	270 (4.5)	209 (7.7)
Provinces				
Gyeonggi	362 (5.6)	1,140 (19.0)	2,306 (38.6)	2,828 (103.8)
Gangwon	228 (3.5)	-75 (-1.2)	-210 (-3.5)	-93 (-3.4)
Chungbuk	110 (1.7)	-56 (-0.9)	34 (-0.6)	77 (2.8)
Chungnam	222 (3.4)	-147 (-2.4)	-290 (-4.9)	-169 (-6.2)
Jeonbuk	37 (0.6)	-144 (-2.4)	-218 (-3.6)	-179 (-6.6)
Jeonnam	272 (4.2)	-459 (-7.6)	-545 (-9.1)	-511 (-18.8)
Gyeongbuk	304 (4.7)	-125 (-2.1)	-489 (-8.2)	-136 (-5.0)
Gyeongnam	37 (0.6)	-61 (-1.0)	80 (1.3)	112 (4.1)
Jeju	83 (1.3)	90 (1.5)	52 (0.9)	-2 (-0.1)

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

of absolute decentralization", the population of the metropolitan area as a whole decreases.

According to this hypothesis on the stages of urbanization, Seoul and Busan are currently in the stage of relative decentralization. It seems that other urban centers such as Daegu, Daejeon, and Gwangju will follow such a pattern.

Table 9.2 summarizes the share of growth in total population by province. The table shows that Seoul absorbed 47.8 percent of national population growth between 1960 and 1970. But the share of population growth by Seoul has consistently declined to 37.6 percent in the 1980s. For the recent decade, 1990-2000, it fell to -26.3 percent. A similar pattern is found for Busan. Its share of population growth has decreased since 1980, and became -5.0 percent for 1990-2000. In the meantime, the share of population growth by the other large urban centers like Incheon, Gwangju, Daejeon, and Ulsan has increased.

Of nine provinces, the growth of Gyeonggi has been prominent. In the 1960s, Gyeonggi absorbed 5.6 percent of total national growth. Its share

Table 9.3 Population Growth in the Capital Region, 1960-2000

(Unit: 1,000 persons, %)

	1960	1970	1980	1990	1995	2000
Population Size						
Seoul	2,445	5,525	8,364	10,613	10,231	9,895
Gyeonggi ¹⁾	2,749	3,353	4,934	7,974	9,958	11,459
Capital Region ²⁾	5,194	8,879	13,298	18,587	20,189	21,354
Entire country	24,989	31,434	37,436	43,411	44,609	46,136
Share of the Population						
% Seoul/(Entire country)	9.8	17.6	22.3	24.4	22.9	21.5
% Gyeonggi/(Entire country)	11.0	10.7	13.2	18.4	22.3	24.8
% Capital Region/(Entire country)	20.8	28.2	35.5	42.8	45.3	46.3

Notes: 1) Includes Incheon.

2) Capital Region includes Seoul and Gyeonggi.

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

jumped to 38.6 percent in the 1980s and reached its peak in the 1990s: 103.8 percent of the national population growth in 1990s was absorbed by Gyeonggi province. In contrast, Jeonnam, Chungnam and Jeonbuk have consistently lost population from 1960 to 2000.

In sum, the total population has increased by about 21 million in the last four decades. Of this increase, 35.2 percent and 31.4 percent have been absorbed by Seoul and Gyeonggi province, respectively. Among large cities, Busan absorbed 11.8 percent, Incheon 9.7 percent, and Daegu 8.5 percent. Consequently, changes in the population distribution of Korea for the period from 1960-2000 can be characterized as heavy population concentration into the Capital Region as well as other large urban centers.

2) Population Concentration in the Capital Region

As mentioned above, the main feature of the population distribution in Korea in the past four decades is an excessive concentration of the population into the Capital Region. Table 9.3 shows the population in the Capital Region as well as the entire country, from 1960-2000. As of 2000, 21.5 percent of the Korean population lived in Seoul and 24.8 percent in Gyeonggi province in 2000. Nearly a half (46.3 percent) of the total population is in the Capital Region. Seoul

Table 9.4 Share of Population Growth in the Capital Region, 1960-2000

(Unit: 1,000 persons, %)

	1960-1970	1970-1980	1980-1990	1990-1995	1995-2000	1990-2000
Population Growth						
Seoul	3,080	2,839	-2,249	-382	-336	-718
Gyeonggi	605	1,580	3,040	1,984	1,501	3,485
Capital Region	3,685	4,419	5,289	1,602	1,165	2,767
Entire country	6,445	6,002	5,975	1,198	1,527	2,725
Share of Population Growth						
% Seoul/(Entire country)	47.8	47.3	37.6	-31.9	-22.0	-26.3
% Gyeonggi/(Entire country)	9.4	26.3	50.9	165.6	98.3	127.9
% Capital Region/(Entire country)	57.2	73.6	88.5	133.7	76.3	101.5

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

grew fast until 1990, but since then the population of Seoul has declined. In contrast, the population of Gyeonggi and Incheon continues to grow fast. Now the population of Gyeonggi and Incheon is larger than Seoul.

The extent of population concentration into the Capital Region seems to have been alleviated in recent years. As shown in Table 9.4, the share of total population growth by the Capital Region has declined considerably during the second half of the 1990s. For instance, for the 1990-1995 period, the population growth in Gyeonggi province was 1.65 times the national population growth. However, during this period, the population in Seoul began to decline for the first time in its history. Thus, the population growth in the Capital Region became 1.33 times the national population growth.

In the second half of the 1990s, however, the rate of population concentration into the Capital Region has slowed down. Seoul has continuously lost population. Both Gyeonggi and Incheon absorbed 98.3 percent of national population growth. The population decline in Seoul combined with the rapid increase of population in Gyeonggi and Incheon accounted for 76.3 percent of the national population growth absorbed by the Capital Region.

There have been a couple of plausible explanations for such changes in the patterns of population concentration. First, the regional urban centers have grown large enough to accommodate many important functions of urban centers

which had been taken exclusively by Seoul before. Thus, the motivation to move into the Capital Region has been considerably reduced. Second, the construction of a number of new towns near Seoul may have induced a large number of in-migrants to the Capital Region in the early 1990s. However, the nationwide economic crisis in 1997 retarded in-migration to the Capital Region.

Analysis of the data from the civil registration, however, does not support the plausibility of an explanation based on the inducement of movement to the new towns. The data indicate that from 1985 to 1997 the volume of migration from all over the country to the Capital Region has consistently declined. This pattern has persisted even for the period of 1993-1995 when full scale movement to the new towns near Seoul has occurred. Thus, an explanation based on the growth of regional urban centers seems to be more plausible.

2. Internal Migration

1) Migration Trends

Table 9.5 summarizes the volume and rate of internal migration in Korea. Here, migration is defined as changes of residential place across the *Gu*, *Si* and *Gun* boundaries between the census date and 5 years prior to the given census. From 1995-2000, a total of 9.7 million persons moved across city and county boundaries. This number corresponds to 23.1 percent of the total population aged 5 or over. The number of migrants had increased over time until 1985-1990, but slightly decreased from 1995-2000. The decline of the volume of migration in the second half of the 1990s may be attributable to the economic recession in 1997.

Of the total migrants from 1995-2000, 55.5 percent moved between provinces and 43.2 percent moved between cities and counties within the same province. The other 1.4 percent moved into the country from abroad. Except for the period from 1975-1980, the volume of movement between provinces has always been larger than that of movement between cities and counties within the province. This is partly due to metropolitanization around large cities like Seoul and Busan where suburban development is particularly prominent.

Table 9.5 Internal Migration Trends, 1965-2000

(Unit: 1,000 persons, %)

	Total Migrants	Movement within Province	Movement between Provinces	Other Movement	Migration Rate		
					Total	Within Province	Between Provinces
1965-1970	4,394 (100.0)	1,918 (43.7)	2,457 (55.9)	20 (0.5)	16.2	7.1	9.1
1975-1980	7,658 (100.0)	3,879 (50.7)	3,739 (48.8)	40 (0.5)	22.8	11.5	11.1
1985-1990	9,871 (100.0)	4,380 (44.4)	5,435 (55.1)	55 (0.6)	24.6	10.9	13.5
1995-2000	9,711 (100.0)	4,191 (43.2)	5,386 (55.5)	134 (1.4)	23.1	10.0	12.8

Source: EPB/KNSO (*Population and Housing Census Report*, various years); KNSO (2001d).

The flows of migration are shown in Table 9.6 in terms of in-, out- and net-migration between provinces. For Seoul, the number of in-migrants had increased until 1985-1990, and then decreased. However, the number of out-migrants has consistently increased. Accordingly, the number of net-migrants continues to decline after reaching its peak between 1965 and 1970. In the last five years, Seoul has lost 685,000 due to migration. From 1995-2000, about 1.1 million moved from Seoul to Gyeonggi, which is 66.3 percent of total out-migrants from Seoul. In contrast, only about 430,000 moved from Gyeonggi to Seoul. Therefore, Seoul lost 670,000 to Gyeonggi province. This was mainly due to the rapid growth of suburban areas and satellite cities around Seoul.

As shown in Table 9.6, positive net-migration is found for large urban centers until 1990. However, since 1990, Busan and Daegu have shown negative net-migration as Seoul has. This implies that the metropolitanization process is currently occurring around these large cities, too.

All provinces except Gyeonggi had excessive out-migration until 1990. But from 1995-2000 Chungnam, Chungbuk and Gyeongnam experienced positive net-migration. This can be explained by the spill-over effect of the Capital Region: both Chungnam and Chungbuk are close to the Capital Region. This is also true for Gyeongnam, which is close to Busan.

Table 9.6 Internal Migration Trends by Region, 1965-2000

(Unit: 1,000 persons)

	In-migration				Out-migration				Net-migration			
	65-70	75-80	85-90	95-00	65-70	75-80	85-90	95-00	65-70	75-80	85-90	95-00
Major cities												
Seoul	1,191	1,256	1,333	971	248	753	1,377	1,656	943	503	-44	-685
Busan	309	539	373	216	127	221	348	400	182	318	25	-184
Daegu	-	-	292	201	-	-	213	248	-	-	79	-47
Incheon	-	-	413	339	-	-	174	279	-	-	239	60
Gwangju	-	-	186	164	-	-	122	144	-	-	64	20
Daejeon	-	-	199	210	-	-	96	152	-	-	103	58
Ulsan	-	-	-	110	-	-	-	111	-	-	-	-1
Provinces												
Gyeonggi	346	905	1,457	1,680	320	437	727	908	26	468	730	772
Gangwon	103	105	123	164	184	275	299	178	-81	-170	-176	-14
Chungbuk	56	73	122	169	164	208	190	143	-108	-135	-68	26
Chungnam	99	166	137	262	308	332	326	199	-209	-166	-189	63
Jeonbuk	55	65	81	133	205	274	267	169	-150	-209	-186	-36
Jeonnam	58	89	140	171	277	429	437	226	-219	-340	-297	-55
Gyeongbuk	146	264	245	275	303	400	453	281	-157	-136	-208	-6
Gyeongnam	98	296	360	283	307	385	372	262	-209	-89	-12	21
Jeju	14	22	29	36	12	25	33	31	2	-3	-4	5

Source: EPB/KNSO (*Population and Housing Census Report, various years*); KNSO (2001d).

2) Reasons for Moving

Table 9.7 presents the reasons individual migrants gave for moving in 1966 and 1997. Data are from nationwide special surveys conducted by the KNSO. Here, migrants refers to those who moved across the boundaries of *Gu*, *Si* and *Gun* in the five years prior to the time of the survey. Reported reasons for moving are tabulated separately for individual migrants and for the head of household.

A comparison of the reasons for migration between two points in time indicates that for thirty years economic reasons such as searching for a job, or a transfer of place of work have declined considerably, while housing, family reunion and education have become important reasons to move. For instance, in 1966, 71.6 percent of household heads moved for economic reasons. In 1997 the proportion of migrants reporting economic reasons decreased to 36.4 percent. In contrast, moving for housing rose from 15.8 percent in 1966 to 22.9 percent in 1997. The proportion of migrants who moved for the purpose of

Table 9.7 Reasons for Moving, 1966-1997

(Unit: %)

1966			1997		
Reason	Total Migrants	Household Head	Reason	Total Migrants	Household Head
Seeking a job	13.1	30.0	Job	19.3	36.4
Transfer/ business	17.9	41.6	Education	7.1	10.4
Education	9.2	4.9	Housing	13.2	22.9
Housing	9.2	15.8	Family	56.2	23.5
Family	47.9	5.5	Neighborhood	2.7	4.5
Health	0.4	0.4	Environment/ others	1.5	2.3
Others	2.3	1.7			
Total	100.0	100.0	Total	100.0	100.0

Source: Choe and Park (1969); KNSO (1998).

family reunion also increased from 5.5 percent in 1966 to 23.5 percent in 1997.

Such changes in migration reasons in the past thirty years reflects the industrialization and urbanization of the society. In the 1960s, both urbanization and industrialization began to proceed in full scale in Korea. Thus a majority of migrants moved from rural to urban areas mainly for economic reasons. In the 1990s, however, the urbanization process has almost been saturated, while metropolitanization around large urban centers has been widely observed. Consequently, most migration is between cities or from central cities to suburban areas within the same metropolitan region. For such migrations in the 1990s, reasons of education or housing were more prevalent than economic ones.

3) Migration in the Capital Region

As discussed above, the Capital Region including Seoul, Incheon and Gyeonggi province contains 46.3 percent of the total Korean population. Rapid growth in this particular region characterizes the changes in population distribution in Korea. Thus, this section focuses on migration in the Capital Region.

Table 9.8 presents population movement between the Capital Region and other areas as well as movements within the Capital Region. For the 1995-2000 period, about 1.1 million moved into the Capital Region. Among them, 47.3 percent moved to Seoul and 44.2 percent to Gyeonggi. The number of in-

Table 9.8 Migration in the Capital Region

(Unit: 1,000 persons, %)

	1965-1970	1975-1980	1985-1990	1995-2000
Within the Capital Region	373	747	1,656	1,962
Gyeonggi → Seoul	251	311	440	432
→ Incheon	-	-	102	122
Incheon → Seoul	-	-	64	65
→ Gyeonggi	-	-	65	119
Seoul → Gyeonggi	122	436	825	1,098
→ Incheon	-	-	160	126
In from outside the Capital Region	1,164(100.0)	1,414(100.0)	1,547(100.0)	1,130(100.0)
Seoul ←	940 (80.8)	945 (66.8)	829 (53.6)	535 (47.3)
Incheon ←	-	-	151 (9.8)	96 (8.5)
Gyeonggi ←	224 (19.2)	469 (33.2)	567 (36.6)	499 (44.2)
Out to outside the Capital Region	195(100.0)	443(100.0)	622(100.0)	881(100.0)
Seoul →	126 (64.6)	317 (71.6)	392 (63.0)	432 (49.0)
Incheon →	-	-	45 (7.2)	95 (10.8)
Gyeonggi →	69 (35.4)	126 (28.4)	185 (29.8)	354 (40.2)
Net-migration in the Capital Region				
Capital region	969 (100.0)	971(100.0)	925(100.0)	249(100.0)
Seoul	814 (84.0)	628 (64.7)	437 (47.2)	103 (41.4)
Incheon	-	-	106 (11.5)	1 (0.04)
Gyeonggi	155 (16.0)	343 (35.3)	382 (41.3)	145 (58.2)

Source: EPB/KNSO (*Population and Housing Census Report*, various years).

migrants steadily increased from 1965-1970 until 1985-1990, but decreased from 1995-2000. This indicates that the trend of rapid concentration into the Capital Region has alleviated in recent years.

The specific destination within the Capital Region among the in-migrants has also changed in the last three decades. From 1965-1970, 80.8 percent of total in-migrants to the Capital Region headed for Seoul, but the proportion decreased to 66.8 percent from 1975-1980 and to 53.6 percent from 1985-1990. On the other hand, the proportion of in-migrants to Gyeonggi province has increased.

The volume of out-migrants from the Capital Region to the rest of the country has also rapidly increased. It was 195,000 from 1965-1970, but increased to 622,000 from 1985-1990, and to 881,000 from 1995-2000. Among out-migrants from the Capital Region, 49.0 percent moved out of Seoul.

It is interesting to note that the number of net-migrants changed little from 1965-1990. As shown in Table 9.8, the volume of net-migration in the Capital

Region was 969,000 from 1965-1970; 971,000 from 1975-1980; and 925,000 from 1985-1990. But it drastically declined to 249,000 from 1995-2000, which again indicates a significant change in migration patterns in Korea.

Also notable is that until 1990 the volume of net-migration had been larger in Seoul than in Gyeonggi province. However, it reversed from 1995-2000: 58.2 percent of total net-migrants to the Capital Region were in Gyeonggi province.

Overall, two significant changes are observed. First, the extent of population concentration into the Capital Region has been considerably mitigated in recent years. Second, the destination of the in-migrants into the Capital Region has shifted from Seoul to Gyeonggi province. These changes are understood to indicate that Seoul has currently reached its saturation point. At the same time a decrease of in-migrants from outside the Capital Region indicates that now the potential pool of out-migrants from the rest of the country has shrunk to a great extent.

V. Urbanization

1. "Compressed Urbanization"

In the early 20th century, as imperial Japan triggered a peasant exodus from rural areas through severe exploitation of the rural economy and also urged the construction of new towns, full-scale urbanization started in Korea. The annual growth rate of the rural population between 1915 and 1944 was less than one percent on average. However, for the given years, the urban growth rate per annum was 6.8 percent. The urban population, which composed 2.8 percent of total population in 1915, reached 5.6 percent in 1930 and 13.2 percent in 1944 (GGK, 1934, 1945).

As population migration in the colonial period proceeded at the international level, a substantial proportion of rural-to-urban migrants moved to Manchuria, Sakhalin, and Japan in order to escape from Japanese exploitation or to find jobs. Between 1910 and 1940, overseas migrants totaled about 3,200,000 and domestic migrants were about 870,000 (S.N. Moon, 1993: 34; Seok, 1986:

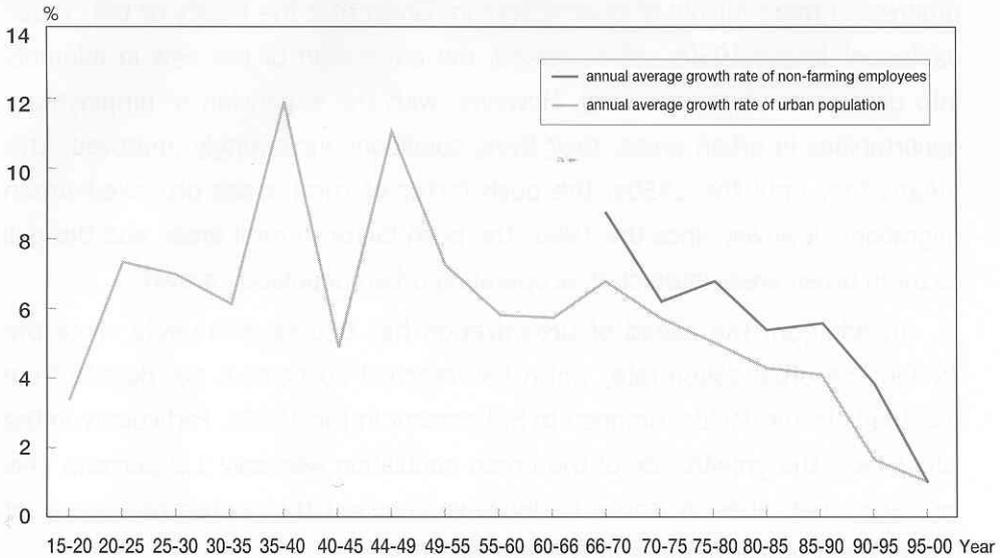
118). Japanese immigrants for the same period were nearly 700,000 and about half of them settled in the cities (Kwon et al., 1997b: 108). Thus, the weight of urban immigrants out of total migrants was not small. Nonetheless, the number of rural-to-urban migrants who moved to adjacent countries far outnumbered urban in-migrants, and the growth of the urban population was delayed at that time.

After liberation from the Japanese rule in 1945, delayed urbanization continued. Massive migration, which resulted from division of the Korean peninsula and the Korean War (1950-1953), accelerated the population concentration into the cities. Upon liberation, about 1,800,000 overseas Koreans, 1,380,000 from Japan and 420,000 from Manchuria and Sakhalin, immigrated between 1945 and 1949. Territorial division forced nearly 740,000 North Koreans to enter the South. In addition, the Korean War resulted in 650,000 North Korean refugees coming into South Korea, though about 700,000 South Koreans were killed during the war (T.H. Kwon, 1977). Most of these immigrants settled in urban areas including Seoul. Accordingly, the urban population increased from 3,470,000 in 1949 to 5,280,000 in 1955, with an annual average growth rate of 7.2 percent. The rate of urbanization rose from 17.2 percent to 24.5 percent during this period.

The expansion of the status of administrative districts from rural areas to cities accelerated explosive growth of the urban population. Through these measures, the number of cities increased from 14 in 1949 to 25 in 1955. This "nominal urbanization" explains about 1/3 of urban population growth between 1949 and 1955 (T.H. Kwon, 1980: 208-210). Also, rural-to-urban migration within the country led the flow of urbanization. The refugees from North Korea made up no more than 22.2 percent of urbanward migrants between 1949 and 1955, while 76.3 percent were the product of "social growth" by way of rural-to-urban migration (Hong, 1979: 57). It suggests that the "delayed urbanization" under Japanese imperialism led to an "urban explosion" after liberation from colonialism.

This urban explosion triggered over-urbanization in the 1950s. Under the socio-political chaos and destruction of the Korean War, the growth rate in manufacturing industries was considerably lower than that of the urban

Figure 9.1 Industrialization and Urbanization Trends, 1915-2000



Source: GGK/EPB/KNSO (*Population and Housing Census Report*, various years); KNSO (2001c, 2002c, 2003a).

population. Most rural-to-urban migrants did not have employment opportunities except for positions such as porter, peddler, vendor, or casual work. They managed to make a living with the aid of the family back in the countryside (Cho and Oh, 2001).

The rapid economic growth based on state-led industrialization spurred population migration to the cities from the 1960s. For developing countries in the 1960s, the average urbanization rate slowly increased from 21.9 percent to 25.8 percent. However, the corresponding rate for Korea rapidly increased from 28.0 percent to 41.2 percent (UN, 1980). Such rapid growth continued until the 1980s. The growth of the urban population (10,870,000) was about twice that of the total population (5,980,000) in the 1980s. It took four decades for Korea to catch up to the path of "Western-type" urbanization, which took about two centuries in the West. For this reason, the urbanization of Korea since the 1960s can be called "compressed urbanization."

It is noteworthy that rapid urbanization since the 1960s kept pace with the growth of mining and manufacturing industries. This is quite different from the urbanization process before then. As shown in Figure 9.1, since the early 1960s

when the First Five Year Economic Development Plan began, industrialization progressed more rapidly than urbanization. Given that the legacy of the "urban explosion" in the 1950s still remained, the adaptation of the new in-migrants into urban areas was not easy. However, with the expansion of employment opportunities in urban areas, their living conditions increasingly improved. This means that until the 1950s, the push factor of rural areas provoked urban migration. However, since the 1960s the push factor in rural areas and the pull factor in urban areas interacted, accelerating urban population growth.

In addition, the speed of urbanization has decreased rapidly since the 1990s. The urbanization rate, which had reached 20 percent per decade from the 1960s to the 1980s, dropped to 5.3 percent in the 1990s. Particularly in the late 1990s, the growth rate of the urban population was only 1.2 percent. This indicates that cities in Korea today have reached the maturation stage of urbanization similar to those in Western societies.

All the facts described above lead to the conclusion that both assertions regarding the over-urbanization issue are partially valid in Korea. More specifically, the urban explosion occurred in the 1950s while urbanization progressed in parallel with industrialization from the 1960s. Thus, though urbanization in Korea proceeded at a very rapid speed throughout the 20th century, all the processes cannot be defined as over-urbanization. Rather, over-urbanization appeared in the period of socio-political chaos between the late 1940s and 1950s. This confirms that rapid urbanization was not directly related to over-urbanization. In addition, over-urbanization was a temporary phenomenon caused by socio-political upheaval, at least in the case of Korea.

2. Role of Rural-to-Urban Migration in Urbanization

For the past half century, rural-to-urban migration has operated as the pivotal factor in urban population growth in Korea. As shown in Table 9.9, net migrants from rural areas between 1965 and 2000 reached nearly 8,000,000. Particularly for the period 1965-1990, rural residents who moved to cities amounted to 320,000 per year. Thus, rural-to-urban migration is viewed as being the locomotive of compressed urbanization.

Table 9.9 Migration between Rural and Urban Areas, 1965-2000

(Unit : 1,000 persons)

Period	Urban		Rural		Net migration to urban areas
	In-migration	Out-migration	In-migration	Out-migration	
1965-1970	3,359	1,919	1,037	2,476	1,440
1970-1975	4,029	2,833	1,122	2,318	1,196
1975-1980	6,379	4,536	1,239	3,082	1,842
1980-1985	7,008	5,472	1,358	2,893	1,535
1985-1990	8,705	7,119	1,111	2,697	1,586
1990-1995	8,893	8,703	1,194	1,384	190
1995-2000	8,338	8,117	822	1,043	221

Source: N.I. Kim et al (1997: 26); EPB/KNSO (*Population and Housing Census Report*, various years).

Examination of the urbanization process during the last four decades reveals that the effect of rural-to-urban migration on urbanization differs considerably by period. According to Table 9.10 rural-to-urban migration had a strong influence on urbanization: it accounts for about 3/4 of urban population growth in the late 1960s. Rural-to-urban migrants made up nearly 40 percent of urban population growth in the 1970s and the 1980s. However, in the 1990s the contribution of rural-to-urban migration to urban growth sharply dropped to 10 percent. Rural-to-urban migration ceased to function as a driving force of urbanization.

Natural growth was another driving force for the growth of the urban population. Except for the late 1960s when the flow of rural-to-urban migration was greatest, it continued to occupy 40 percent of urban population growth. Thus, since the 1960s, natural growth has functioned as a carriage for compressed urbanization along with rural-to-urban migration. Moreover in the 1990s, when the absolute size of rural-to-urban migrants decreased rapidly, the share of natural growth increased to 2/3 of urban population growth. Currently, it is leading the urbanization process.

The readjustment measures of administrative districts played a part in urban population growth, too. Through the frequent readjustment of districts, the number of cities increased from 27 in 1960 to 79 in 2000. As a result, since the 1980s changing to city status from rural area has explained 20-30 percent of urban population growth.

Table 9.10 Factors of Urban Population Growth, 1960-2000

(Unit: 1,000 persons, %)

Period	Urban Population Growth (in thousands)	Factors of Urban Population Growth (%)			
		Natural Growth	Net Migration	Enlargement of Urban Districts	Changing to City Status
1960-1966	2,709	42.1	40.6	9.3	8.0
1966-1970	3,223	26.8	73.2	0.0	0.0
1970-1975	3,842	47.2	45.1	2.5	5.2
1975-1980	4,638	45.7	39.7	4.1	10.5
1980-1985	5,506	44.4	36.8	1.3	17.4
1985-1990	5,866	36.3	27.0	6.2	30.4
1990-1995	2,727	72.8	7.0	1.3	19.0
1995-2000	1,719	62.2	12.9	0.0	24.9

Source: Lee and Lee (1983: 125); Choi and Choi (1993: 11); EPB/KNSO (*Population and Housing Census Report*, various years); KIAC (2001).

It should be noted that changing to city status from rural area has exerted a considerable influence on urban population growth, whereas the enlargement of the established urban districts has not had a significant effect. It is because the government, which was worried about urban overcrowding and megalopolitanization, has avoided the enlargement of established urban districts. Instead, the government has attempted to accommodate urban over-population by constructing satellite cities surrounding metropolises or by developing new towns in rural areas.

In sum, the vast flow of rural-to-urban migration led to urbanization at an early stage. However, the consistent driving force of the urbanization process since then has been the population reproduction of cities themselves and urban territorial enlargement. Thus, it is expected that these internal factors will still be important for ongoing urbanization.

3. Urbanization and Changes of Inter-city Hierarchy

Urbanization has changed not only the relationship between urban and rural areas but also the relationships between cities. The greatest change found in the relationship among cities was the "one-pole-concentration into Seoul", though it has relaxed gradually. Seoul was the first-runner of urban growth in Korea and

Table 9.11 Urban Growth Stages by City Size, 1960-2000

	High Growth Stage	Medium Growth Stage	Low Growth Stage	Negative Growth Stage
1960s (27)	S C:1 (2)	A:1, B:1, C:6, D:9 (17)	C:3, D:5 (8)	-
1970s (32)	A:1, B:1 C:7, D:2 (11)	S, A:1 C:7, D:9 (18)	D:2 (2)	D:1 (1)
1980s (40)	A:2, B:2, C:15 (19)	S, A:1 C:6, D:2 (10)	C:6, D:3 (9)	C:1, D:1 (2)
1990s (71)	A:3, B:7, C:21, D:4 (35)	B:1, C:4, D:4 (9)	A:1, C:4, D:7 (12)	S, A:1, C:2, D:11 (15)

Notes: 1) high growth stage: $p > u$ & $p > t$, medium growth stage: $t < p < u$,
low growth stage: $0 < p < t$, negative growth stage: $p < 0$
t: annual average growth rate of total population
u: annual average growth rate of urban population
p: annual average growth rate of a particular city's population.

2) S: Seoul

A: large cities over 1,000,000 persons

B: medium cities of 500,000-1,000,000 persons

C: small cities of 100,000-500,000 persons

D: petite cities under 100,000 persons

3) Figures in parenthesis are number of cities.

Source: EPB/KNSO (*Population and Housing Census Report*, various years); I. Kim (1983).

absorbed most rural-to-urban migrants. However, around the 1970s Seoul had already become a metropolis, beginning to pass over the high-speed growth stage. In the 1990s, "counter-urbanization" appeared as Seoul marked a negative growth rate.

Such a relaxation of centralization in Seoul has contributed to lessen the extent of regional inequality somewhat. However, the problem of regional inequality remains mostly untouched. The metropolis of Seoul, facing a bottleneck of growth, could accommodate no more in-migrants. It pushed them into neighboring areas in the Capital Region. In other words, the centralization of Seoul was transformed into the centralization of the Capital Region. Indeed, since the 1990s the size of the population of Seoul decreased in both absolute and relative size. In the meantime, the population in the Capital Region

continued to increase, though its growth slowed down somewhat. As a consequence, the Capital Region came to occupy about half of the total population of Korea. This fact shows that the "one-pole-concentration into Seoul" has been reproduced in the form of the "one-pole-concentration into the Capital Region": the metropolis of Seoul has been transformed into a megalopolis that embraces its surrounding areas.

It should be noted that despite the enlargement of the Capital Region, the growth of cities in other provinces has been neither delayed nor halted. Table 9.11 shows the patterns of urban growth by city size over time. The new industrial cities such as Ulsan and Pohang developed rapidly in the 1960s. From 1970 to the 1980s other industrial cities including Changwon, Masan, and Gumi were newly constructed to pursue heavy and chemical industrialization. The satellite cities of Seoul including Seongnam, Bucheon, and Anyang have also grown quickly during this period. These cities continue to grow into medium cities with over 500,000 population as of the 1990s. They were developed as targets of a state-led development strategy or as beneficiaries of fast population growth in Seoul.

As shown in Table 9.11, a substantial number of provincial cities have been in a high growth stage. Large cities have played an important role in the urbanization of the entire country. However, it does not necessarily mean that small and medium size cities were excluded in the process of urban population growth. In fact, over time, cities of such sizes have become evenly distributed across different stages of urbanization. There have been, however, a few small cities that stayed at the low growth stage for a long period or slid down to a declining stage. These cities have been viewed as exceptional cases to the general trend. They were underdeveloped due to regional characteristics such as degenerated ports or mines (i.e. Samcheonpo, Choongmu, Taebaek) or due to growth control measures from the government (i.e. Gwacheon). The continuous growth of most cities in provinces indicates that the central metropolis and other provincial cities were not on a unilateral zero-sum relationship.

In sum, though many changes in inter-city relationships have occurred in the process of rapid urbanization, the basic characteristics of urbanization have still remained: the coexistence of centralization into the Capital Region and the

development of provincial cities. Of course, in the 1950s and 1960s the urban population grew in proportion to urban size, widening regional inequalities. However, since the 1970s the correlation between urban size and the urban growth rate has become less clear. In the 1990s, a counter-urbanization phenomenon began to appear in a few metropolises.

One of the characteristics of urbanization in Western Societies is equal development among cities and non-existence of the prime city. For developing countries, it was accompanied by severe regional inequality. However, in Korea, urbanization is characterized by the coexistence of two contradictory tendencies: one-pole centralization and decentralized development. This dichotomy differentiates Korean urbanization from the experience of Western societies as well as that of other developing countries.

VI. Conclusion and Policy Implications

This chapter, using census data, examined inter-regional population distribution, migration and urbanization in Korea since the 1960s. The results are summarized as follows.

Population has been concentrated in the Capital Region, with a continuous metropolitanization process until 1990. However, since the 1990s the size of the population in metropolises such as Seoul and Busan has decreased. From the late 1990s the tendency toward centralization in the Capital Region has weakened considerably.

The total amount of migration has continued to increase, with the migration rate between city, district and county reaching 24.6 percent in 1990. However, it has declined somewhat recently. Also intra-regional migration has increased, with the growth of provincial metropolises such as Busan, Daegu, Gwangju, and Daejeon. As a result, in-migration to the Capital Region has begun to decrease. As for the motives for migration at the individual level, the proportion of migrants with economic motives has declined, while the proportion with social motives like housing or marriage has risen.

Urbanization has been examined with a focus on three issues. First, socio-

political upheavals such as liberation from colonialism and the Korean War caused over-urbanization from the late 1940s to the 1950s. Rapid economic growth since the 1960s expanded the capacity of urban economies, contributing to the solution of over-urbanization problems. Second, external factors of urban growth such as rural-to-urban migration were important at the early stage of compressed urbanization. However, internal factors (i.e. the natural growth of the urban population and the enlargement of cities) has become increasingly important. Third, despite the continuous centralization into Seoul or into the Capital Region, the growth of small and medium cities in provinces has continued. The simultaneous growth of metropolises and small to medium cities makes Korean urbanization distinct from urbanization in developing countries as well as Western societies.

The following suggestions for policy development can be drawn from findings on population distribution and migration. First, the "reversion of population concentration" indicates that as urbanization in Korea has nearly entered into the maturation stage, provincial metropolises gradually played roles as pivotal regional cities. Thus, the existing regional policies geared to reverse or interrupt the "natural" flow of population should be modified. It is necessary to build the new policies to tune the "natural" flow.

Second, the rate of migration continued to increase until the end of 1980s but has decreased afterward. The number of migrants moving for economic reasons has decreased gradually. This indicates that Korean society is restoring its socioeconomic stability. Such changes require a new population policy or new local development policies that help to reconstruct local communities for the stable socio-cultural life of local residents.

Third, as the number of migrants has decreased and the share of intra-regional migration has increased gradually, the problem of regional inequality seems to be less severe. However, high-quality human resources continue to flow into the Capital Region. This suggests that policies attempting to lessen regional inequality should consider the qualitative aspect of migrants. Policies should enhance the capacity of provinces to produce and attract excellent human resources as well as provide the necessary infrastructure.

As with the findings on population distribution and migration, the results

from the analysis of urbanization contain the following implications for policies. First, without a proper understanding of the complexity and multi-dimensionality of urbanization, the efforts of government to solve various urban problems cannot be effective nor efficient. Indeed, the multilateral experiments conducted by governments have not produced effective outcomes. Such failures are mainly due to a lack of understanding of urbanization.

Urban centralization and concentration problems caused by rapid urbanization are not just limited to the spatial and economic problems. There are also problems in the political and cultural spheres such as the centralization of political power and cultural capital. Nevertheless, the government has focused only on the spatial and economic problems at a superficial level. The government has been indifferent to the problems of urbanization associated with political and cultural aspects, which operate at "underlying" levels. Such a biased prescription and approaches have been an obstacle to solving urban problems. Thus, the government needs to thoroughly examine the characteristics of compressed urbanization and to enhance the flexibility of urban policies in the future.

Second, urban population policies have been limited to inter-city population redistribution in order to disperse the over-population of metropolises. However, such "urban-style" measures leave out the population in rural areas and are not effective. The population redistribution policies of urban areas need to be extended to include the population in both urban and rural areas.

Third, most urban policies until now have been *ex post facto* ones to solve already-existing urban problems. Therefore, future-oriented policies (i.e., policies to improve the quality of life) have been insufficiently examined. Policies considering the future as well as the present are required to achieve sustainable urban development. Such policies should pay attention to the quality of life as well as the quantity of the population.

INTERNATIONAL MIGRATION AND KOREAN COMMUNITIES OVERSEAS

Tai-Hwan Kwon

I. Introduction

Korean society was isolated from the outside world for centuries before Japan invaded in the early 20th century. The result is well reflected in the distinctiveness of Korean culture. The major cultural elements including language, food, costume, housing, farming, and kinship were clearly distinguishable from neighboring countries such as China and Japan.

Border crossings of note by Koreans began in the later period of the 19th century. Destitute farmers in northern Korea started to cross over to Manchuria and Siberia. The movement of Koreans beyond the Korean peninsula, however, greatly expanded after the invasion of Korea by Japan in 1910. In contrast, a large flow of return migration was formed immediately after the liberation of Korea from Japanese rule in 1945.

There was virtually no international migration in South Korea in the 1950s except for refugee movement between the North and South during the Korean War. Nevertheless, in the 1960s, movement toward the "New World" started in South Korea with contract labor and agricultural emigration to Germany and South America. The 1965 revision of the U.S. immigration law opened a highway

for Koreans to migrate to the country, and thus a Korean community began to expand quickly in the United States. On the other hand, Koreans who had settled in Japan, China and Russia led a stable community life of their own. In recent years, however, these communities have begun to experience rapid transformation due to changes in world politics and the economy. This chapter will review the trends in the international migration of Koreans and draw an overall picture of Korean communities in China, Japan and the United States.

II. Overview of International Migration

1. Beginning of the Diaspora

The movement of Koreans across national boundaries in a significant volume was first observed in the 1860s. The migrants were poor peasants in northeastern Korea who had been severely hit by a series of poor harvests and famine for over a decade. Many destitute farmers had no option but to cross the border to find fertile land in Manchuria and Siberia. This exodus of farmers for survival is considered the first seed of the current Korean communities overseas. The number of Koreans who settled in Kando, the southern Manchurian region bordering Korea, is known to have been around 7,700 in the 1860s (Cui et al., 1989: 771). The number increased rapidly thereafter, and exceeded 200,000 in 1910. In Yonhaeju, a southern Siberia region bordering northeast Korea that belonged to Manchuria until 1860, the number of Koreans was reported to have been 10,137 in 1882, exceeding the number of Russian residents. The Korean population in Yonhaeju grew to 32,410 in 1902, 45,396 in 1908, and 188,480 in 1926 (S.J. Koh, 1973: 55-59).

The early movement of northeastern Koreans, however, should not be understood as the result of natural catastrophes in the region only. According to the royal records of the Chosun Kingdom, famine had widely prevailed all over Korea and a large number of roaming peasants had been found elsewhere since 1850. In 1862 a peasant riot was staged in Jinju, a town located in southeast Korea, to protest hunger and corruption. The riot spread to other regions like a fire and developed into the Donghak Peasant War in 1894. If the poor harvest

Table 10.1 Background of the Korean Diaspora, 1852-1899

1852	· The number of migrants increased due to a poor harvest
1853	· Starvation throughout Korea
1856	· Excessive flooding in the Younngnam region
1862	· Peasant riots erupted in Jinju and spread to Chungcheong, Jeolla, and Gyeongsang provinces. Peasant riots in Jeju, Hamheung, Kongju, and other towns
1863	· Civil riots in Namhae
1875	· Civil riots in Ulsan
1878	· Severe floods in Gyeongsang and Jeolla provinces
1880	· A large number of people from Hamgyeong-do fled beyond the border due to corruption and exploitation
1889	· Poor harvest and peasant riots in Gilju and Jeongseon
1890	· Peasant riots in Hamchang-hyun
1892	· Civil riots in Gyeongsang province, Hamheung-bu, Deokwon-bu, and Geomcheon and Kangkye in Pyeongan province
1893	· Civil riots all over the country
1894	· Donghak peasant war and the China-Japan War
1895	· Assassination of Empress Min by Japanese assassins
1899	· Civil riots in Jeonju, Impa and other towns

Source: Kwon and Shin (1977: 322-323).

was confined to a certain region or a certain year, hunger could easily have been relieved either by relief grains or by the migration of farmers within the country. The situation was similar in other areas for a prolonged period and fertile land was readily available in a nearby foreign territory. Therefore, crossing the border was the first choice that destitute farmers in bordering areas would make.

According to royal records, many northeastern people fled to Kando crossing the border in 1880. However, the number of migrants in the late 19th century was not very significant if the total population of Korea at the time is taken into account. However, if only the population of the northeast province, Hamgyeong-do, or of the northern part of the province, Hamgyeongbuk-do is considered, we can imagine how urgent the situation of the region was from the volume of exodus to Kando. According to a survey in 1990, about 94 percent of Korean Chinese in Yanbian (or Kando) originating from Hamgyeong-do province were from the northern part (Han and Kwon, 1993: 74). This indicates that the early migrants were mostly "simple border transgressors" to adjacent areas. Such a

movement was difficult in earlier times because of tight border control by both China and Korea. The border control loosened due to the prevalence of famine and social unrest in Korea, and the rapid downfall of the Qing Dynasty combined with the resultant political instability in China. Previously, China had controlled the border tightly to prevent Koreans from entering Kando since the area was sanctified as the home of the Qing Dynasty.

2. Exodus during the Colonial Era

In the early 20th century, the emigration of Koreans accelerated. Both the place of origin in Korea and the place of destination overseas became diversified. A new diaspora began with labor migrations to Hawaii and Mexico between 1903 and 1905. The number of migrants was 7,394 and 1,031, respectively (Kim and Patterson, 1974: 90; Chun, 1996: 41). Migration to Hawaii was stopped by pressure from Japan to protect Japanese laborers there in 1905 (I.J. Yoon, 2001: 25). In other words, an exodus of Koreans to foreign countries was delayed until Japan officially colonized Korea in 1910.

The annexation of Korea by Japan prompted a large number of Koreans to move to Manchuria due to resentment of the occupation or to stage an independence movement. As a result, Koreans in Manchuria doubled from 220,000 to 459,500 between 1910 and 1920. Their destinations were dispersed widely beyond the Kando region. With the growing size of the Korean community, the volume of return migrants also increased and the proportion of returnees reached about 30 percent.¹⁾ The migration flow to Manchuria dwindled rapidly after 1920, as shown in Table 10.2. The major reason for this appears to be the Japanese control of Korean migration to Manchuria to weaken the independence movement based in Manchuria. In addition, a population decrease in northeast Korea, the base of early migrants, might have partially accounted for it.

The volume of labor migration to Japan exploded in the 1920s. Korean laborers were attractive in Japan because of their low wages which were

1) According to C. Kim (1965: 31) the migrants from Korea to Manchuria between 1911 and 1920 numbered 325,700, while the increase in the Korean population in Manchuria between 1910 and 1920 was about 240,000.

Table 10.2 Korean Population in China and Japan, 1910-1944

(Unit: Persons, %)

Year	China		Japan	
	Population	Annual growth rate (%)	Population	Annual growth rate (%)
1910	220,000	-	790 ¹⁾	-
1915	282,070	3.36	3,989	26.99
1920	459,427	9.76	30,175	40.47
1925	531,973	2.93	133,170	29.69
1930	607,117	2.64	298,091	16.12
1935	826,570	6.17	628,678	14.92
1940	1,450,384	11.24	1,190,444	12.77
1944	1,658,572	3.35	1,936,861	9.73

Note: 1) For 1909.

Source: Han and Kwon (1993: 27); M.W. Lee (1996: 53-54).

equivalent to half or one third of local wages. Considering, however, that the overseas migration of Koreans in the entire period of colonialism was articulated by the overall colonial scheme of Japan, it seems unwise to separate the movement to Japan from that of Manchuria.

The life of Korean farmers deteriorated greatly due to Japan's systematic exploitation of the land following the nationwide land survey conducted in the late 1910s. Most poor peasants lost their land, fell into debt, and had no option but to flee from their home villages. Their place of destination was primarily determined by their place of origin. Those from the north headed mostly for Manchuria and those from the south for Japan. Rural to urban migration within the country was limited because of a very low level of urbanization, and further thwarted in the 1930s because of the Great Depression.

With less job opportunities in Korean cities, there was a big wave of emigration throughout the 1930s. There were 740,700 Koreans who moved to Manchuria and the total number of Koreans residing in Manchuria increased from 607,000 to 1,450,000 between 1930 and 1940. A similar number of Koreans entered Japan in the same period (J.I. Park, 1957: 22-32). A big increase of Korean migrants in Manchuria in the late 1930s, as clear from Table 10.2, is largely explained by the group migration policy of the colonial government of Korea to develop Manchuria as a rice supply base to Japan by transplanting

Table 10.3 Returnees and Migrants to South Korea from Overseas after Liberation of Korea

(Unit: 1,000 persons)

Place of origin	Registration data		1949 Census	Estimates	
	Foreign Affairs	Social Affairs		Chul Kim	T.H. Kwon
Japan	1,118	1,407	936	1,300	1,379
China	423	619	270	430	416
North Korea	649	456	481	150	740
Total	2,190	2,482	1,687	1,880	2,535

Source: T.H. Kwon (1977: 177).

Korean farm villages to Manchuria (Han and Kwon, 1993: 29-36). The migration of Koreans to Manchuria virtually ceased after Japan invaded China in 1939.

The migration to Japan had shown a persistent increasing trend during the entire period of colonialism. Nevertheless, the 1930s witnessed the relatively small growth of the Korean population in Japan, as a result of the intervention of the Japanese government to limit the number of Korean laborers entering Japan to protect their own laborers. The situation regarding the demand for Korean laborers, however, changed completely with Japan's preparation for war. Japan started to draft Korean youth and sent them to factories and mines in Japan in 1939. Korean labor draftees sent to Japan numbered a total of 692,000 in the six-year period from 1939 to 1944. The proportion of labor draftees among all types of migrants was about 30 percent at the initial stage, and increased rapidly until no other type of migrants were found at the final stage of World War II (T.H. Kwon, 1977: 185). In this period, a growing number of Korean migrants returned to Korea because their life in Japan became increasingly unstable and difficult.²⁾

In summary, the Korean population in China increased from 220,000 in 1910 to 459,000 in 1920, 607,000 in 1930, and 1,659,000 in 1944, showing 7.5 fold growth in the 45 years of colonialism. There were few Koreans in Japan at the annexation of Korea to Japan in 1910, but the number grew rapidly

2) Between 1941 and 1944, the net size of Korean migration was 739,244, whereas the total number of Koreans who moved to Japan was 984,560. This can be taken as an indication that a substantive proportion of migrants returned to Korea in a fairly short time (T.H. Kwon, 1977: 180, 185).

thereafter. It was reported to be 133,000 in 1925, rose to 1,190,000 in 1940, and reached 1,937,000 in 1944. The Korean population in China and Japan at the time of Korea's liberation in 1945 was approximately between 1,700,000 and 2,000,000. The total number of migrants to Russia was documented as 100,000 in 1923 and 200,000 in 1936. The estimated figure for the late 1920s was, however, 250,000, and the inflow of Koreans into Russia is known to have virtually ceased in the late 1930s when Koreans in Russia were forced to move to central Asian regions such as Uzbekistan and Kazakhstan (S.M. Koh, 1990; 13, 28-29).

3. Liberation and Return Movement

The defeat of Japan in World War II and the resultant liberation of Korea from Japanese rule caused a stream of returning Koreans from Japan and China. The return movement was much greater in Japan where the history of Korean settlement was relatively short and labor draftees consisted of the majority of migrants in late colonial years. The liberation also brought about the division of Korea into two political entities, North and South Korea, and a new type of migration occurred between the two parts. Therefore, it is necessary to conduct a separate look for North and South Korea in examining the trends and patterns of international migration in the post liberation era. However, population data on North Korea are very limited. It is also known that migration crossing the national border has been negligible except for the Korean War years 1950-1953 and that migration has strictly been controlled in the North. Therefore, discussion on the international migration of Korean people after the liberation should be confined to the southern part of the peninsula.

There were a series of efforts to evaluate the volume of international migration in South Korea. The first of its kind was to collect data needed for the distribution of relief goods to those who returned to Korea from foreign countries and refugees from North Korea. Three sets of such data were made available by government agencies: statistics from the Ministry of Foreign Affairs, data from the Ministry of Social Affairs, and census reporting. In addition, C. Kim and T.H. Kwon drew an overall picture of those movements separately. These five sets of

Table 10.4 Population Trends of Koreans Overseas, 1970-2000

Year	Population	Annual growth rate (%)	Population excluding Soviet Union & China	Annual growth rate (%)
1970	-	-	702,928	-
1975	-	-	1,016,016	7.37
1980	-	-	1,590,832	8.97
1985	-	-	2,006,216	4.64
1989	-	-	2,320,099	3.63
1991	4,943,590	-	2,890,597	10.99
1996	5,544,229	2.29	-	-
2000	5,653,809	0.49	-	-

Note: The reference date for all data was presented as the beginning of each year. Thus the data was rearranged using the figure standing for the closing date of the previous year.

Source: MOFAT (2002).

data reveal significant differences from each other, as is clear from Table 10.3.³⁾ The trends and patterns of return migration from overseas and return and refugee migration from North Korea can be summarized as follows:

(1) The total number of Koreans repatriated from Japan was about 1,500,000. Of the total, about 1,300,000 to 1,400,000 took permanent residence in South Korea.

(2) The returnees from Manchuria totaled about 700,000 or 800,000 and about 400,000 people entered South Korea.

(3) Migrants from North Korea consisted of refugees and returnees. Together, the number of migrants ranged from 650,000 to 750,000.

(4) There was virtually no return migration of Koreans from Russia.

3) The government statistics manifested significant differences in terms of the main purpose of the survey. The figures from the Ministry of Social Affairs that were apparently collected to obtain basic data for relief planning show the largest volume of immigration, while the coverage of the census figures appears to have been about two thirds of what should be expected. The major reason for the high level of under-enumeration in the 1949 census might have been a large number of omissions of those who returned to their place of rural origin. On the other hand, deliberate false reporting seems to have been prevalent in the Ministry of Social Affairs registration in order to receive relief medicines and food. It is apparent in Kim's estimate for the North that only refugees were counted and excluded return migrants who had moved to the northern part of the Korean peninsula in the colonial period. See T.H. Kwon (1977: 176-179) for further discussion on the quality of these data sets.

Overall, there were about 4,000,000 Koreans overseas at the end of Japanese colonial rule. Among them, 2,200,000 to 2,300,000 Koreans returned to the Korean peninsula, and those who settled in South Korea were estimated at 1,800,000-1,900,000. If the migrants from North Korea are added, the population gain due to international migration in South Korea was about 2,500,000-2,600,000, which was equivalent to 12-13 percent of the total South Korean population in 1949. These cross border migrations having taken place on the Korean peninsula immediately following the liberation had contrasting demographic implications for the two Koreas. Population pressure was slightly relieved through migration in the North, whereas it was greatly built up in the South in a short period of time.

4. Migration to the "New World"

After the Korean War ended in 1953, South Korea (Korea, hereafter) was virtually closed to overseas migration for a decade. A new wave of international migration erupted in the mid 1960s when contract labor and agricultural migrations to West Germany and Latin America took place. The movers often perceived this opportunity as a shift from a hopeless poverty ridden society to a long dreamed of new world. The "real" road to a new world was opened with the revision of the immigration law in the United States in 1965. Its impact can be readily shown by the upward trend of the Korean population in the United States. According to the U.S census, there were 8,568 ethnic Koreans in 1940. The number increased to 65,150 in 1970, and further to 1,076,872 in 2000 (Yu, 2001).

The overseas diplomatic missions of Korea collect data on Koreans residing in their respective foreign countries every year, and the data for 2000 are summarized in Table 10.5. According to the table, about 5,650,000 Koreans, regardless of their citizenship, resided in 150 foreign countries at the end of 2000. The total number of Koreans in the United States was about 2,100,000 and the number becomes 1,760,000 if temporary residents are excluded. Judging from Table 10.5, the United States is the country that accommodates the largest number of ethnic Koreans outside Korea. Next to the United States,

Table 10.5 Number of Koreans in Foreign Countries, 2000

(Unit: Persons, %)

Region/ Country	All residents	Citizenship holders	Permanent residents	b+c	(d/a) X100	% of a
	a	b	c	d	e	f
Asia/Pacific	2,670,723	1,756,825	582,530	2,339,355	87.6	47.2
Japan	640,234	-	551,942	551,942	86.2	11.3
China	1,887,558	1,738,200	1,696	1,739,896	92.2	33.4
Oceania	65,565	18,383	27,099	45,482	69.4	1.0
Others	77,366	242	1,793	2,035	2.6	1.4
North America	2,264,063	710,200	1,179,526	1,889,726	83.5	40.1
USA	2,123,167	638,873	1,125,198	1,764,071	83.1	37.6
Canada	140,896	71,327	54,328	125,655	89.2	2.5
Latin America	110,460	10,717	76,997	87,714	79.4	2.0
Europe	595,073	517,363	18,911	536,274	90.1	10.5
CIS	521,694	508,076	4,110	512,186	98.2	9.2
Germany	30,492	6,747	7,918	14,665	48.1	0.5
Others	42,887	2,540	6,883	9,423	22.0	0.8
Middle East	7,208	37	326	363	5.0	0.1
Africa	5,256	91	817	908	17.3	0.1
Total	5,652,783	2,995,233	1,859,107	4,854,340	85.9	100.0

Note: See Table 10.4.

Source: The same as Table 10.4.

China, Japan and the CIS (Soviet Union) were listed as major countries with sizable Korean populations. Each of them had more than 500,000 Koreans, and those residing in these four countries accounted for 91.5 percent of all Koreans overseas. Canada, Brazil and Australia form the next group, having 50,000-140,000 ethnic Koreans. Although the number of Koreans in countries other than China, Japan, CIS and the United States was negligible until 1970,⁴⁾ it increased markedly in recent years to 246,000 in 1990 and 481,000 in 2000. This indicates a rapid diffusion of Koreans all over the world along with the growing tendency toward international migration among Koreans.

Migration to the West was first initiated by the Korean government in the early 1960s, as part of a population control policy. Policies on international migration were also to alleviate the burden of unemployment and to earn foreign currency. Under this scheme, about 21,000 mining workers and nurses were dispatched to Germany between 1963 and 1978. Most of them did not return to

4) It would have been about 21,000 in 1970, if calculated from Tables 10.4, 10.7, and 10.9.

Korea and settled down in Germany and other Western nations after the contract period.

The Korean government planned to send a large number of farmers to Latin America and establish Korean agricultural communities there. Thus, the government purchased land in forest areas to reclaim it as farms, and sent the applicants to Brazil and Argentina in the early 1960s. The policy was implemented without proper preparation and ended in total disaster. Reclamation failed and most migrants left the land located in remote forest areas to move to cities. Later, many of them moved again to the United States or Canada.

One important note should be mentioned here concerning the Korean migrants to Germany and Latin America. Most of them, except the nurses, were neither laborers nor farmers in Korea, but college educated with a middle class background. That is, the prime purpose of international migration at the time was to escape from a country of no future and extreme poverty.

Migration to the United States began to explode with the enactment of the new immigration law in 1965 and its implementation in 1968. Prior to this, migration to the United States was very limited and was related mostly to the Korean War. Three types of migration occurred during the post war years through the late 1960s. The first was the emigration of women, the so-called "war brides" married to American soldiers. The next was composed of students, mostly men, who entered the United States to pursue advanced studies. Most of these early students did not return to Korea, but settled down in the United States. This may be called as the "brain drain" type of migration. The third was the adoption of deserted war orphans born between American soldiers and Korean women by American families.

The 1952 American immigration law stipulated an immigration quota for each country, and the quota for Korea was 105 every year. The new immigration law adopted in 1965 abolished the quota, and permitted the immigration of family members of American citizens. In addition, it set regulations to consider technical skills for employment as the major factor for successful immigration. The new law resulted in a rapid increase of Korean migrants in the United States from 1969. The number of registered Korean immigrants in the U.S. was a mere 2,000 until 1964. It increased to 3,800 in 1968, to 9,300 in 1970, and further to

31,000 in 1976 (Koo and Yu, 1983: 435). According to the U.S. census, Koreans residing in the country numbered 70,000 in 1970 and 800,000 in 1990, showing an eleven-fold increase during this 20 year period.

III. Korean Community in China

1. Community Characteristics

Korean Chinese, called "Chosunjok", live mostly in the three provinces of Northeast China, that is, Jilin, Heilungjiang and Liaoning Province. About 92 percent of Korean Chinese were reported to reside in this area according to the 2000 Chinese census. Among them, Jilin Province including Yanbian had 60 percent of the Korean Chinese population, and Yanbian alone 43 percent. In a word, the Korean Chinese community is characterized by a high concentration of residents. This trait has originated from the fact that they were the pioneering settlers in the region. In Kando, currently in Yanbian, Koreans consisted of 68 percent of all residents in 1910. This proportion rose to 82 percent in 1922 and never fell below 70 percent until the Japanese retreat from Manchuria in 1945 (Han and Kwon, 1993: 28).

The proportion of Koreans in Manchuria is very low if the whole area is considered. Koreans, however, settled in the land where the Han Chinese or Manchurians did not reside. As a consequence, their contact in everyday life was limited to fellow Koreans. A distinct language and cultural traditions were the major mechanisms for this segregation. With an increase in Koreans, their community expanded into various parts of Manchuria.

Although the proportion of Koreans in Kando among all Koreans was reduced from 68 percent in 1912 to 39 percent in 1944, the figure rose to 50 percent after the founding of the New China (Han and Kwon, 1993: 28, 51). It was due mainly to a selective return migration of Koreans to the Korean peninsula in terms of the place of residence. It was apparent that returnees were concentrated among those who had stayed in areas other than Kando and had a relatively short history of migration. Judging from these background factors, there should have been a tendency of migrants originating from southern Korea

Table 10.6 Distribution of the Korean Chinese Population by Province, 1982-2000

(Unit: Persons, %)

Region	1982 census		1990 census		2000 census		Growth rate	
	Population	%	Population	%	Population	%	1982-1990	1990-2000
Total	1,765,240	100.0	1,923,361	100.0	1,923,842	100.0	1.07	0.00
Manchuria	1,733,967	98.2	1,868,377	97.1	1,775,198	92.3	0.93	-0.50
Jilin	1,104,071	62.5	1,183,567	61.5	1,145,688	59.6	0.87	-0.31
(Yanbian)	654,706	42.8	821,497	42.5	842,135	43.8	1.06	0.24
Heilongjiang	431,644	24.5	454,091	23.6	388,458	20.2	0.63	-1.51
Liaoning	198,252	11.2	230,719	12.0	241,052	12.5	1.90	0.42
Others	31,273	1.8	54,984	2.9	148,644	7.7	7.05	9.62

Source: PCO (1985, 1993, 2003).

to return to their homeland on a large scale compared to the migrants of northern origin. Due to this process of selective return migration, the regional concentration and cultural uniformity of Korean communities in China was strengthened after the New China was founded.

Korean villages contrast sharply with Chinese villages. The shapes of the houses and roofs are different, and the walls have different colors as well. In rural areas, one can instantly tell which is a Korean village or not with a cursory look from a distance. Such a distinction can also be made in towns. Street scenes and images contrast between Korean and Chinese residential areas. In other words, Koreans in China were culturally isolated.

The segregation of daily life can be widely observed in realms other than housing. Koreans have kept their own traditions in clothing, food, weddings, various rituals, network formation, and so forth. When the question of interethnic marriage is raised, Korean Chinese overwhelmingly oppose it. It can be frequently heard from Korean Chinese that nurturing friendships between Koreans and Chinese is difficult, even in school, due mainly to different lifestyles and mutual distrust. Koreans in China have led their lives on an island isolated from the majority Chinese culture and society.

This cultural isolation is mostly explained by the migration history of Koreans and their distinct culture including the language and a subsistence economy. Another important contributor might be Chinese policies for minority nationalities. These policies encouraged minority groups to use their ethnic

languages even in the public realm, to preserve and develop their ethnic cultures, and to promote ethnic education. These are known to have contributed greatly to build up ethnic pride and identity among minority nationalities. On the other hand, the policies have also been effective in preventing minorities from advancing to the core of Chinese culture and society.

2. Population Trends and Community Crisis⁵⁾

In recent years, Chosunjok (ethnic Korean) intellectuals frequently express a deep worry about the future of Korean society in China. Many argue that the Korean Chinese community is disintegrating rapidly and will disappear in the near future. First of all, the population situation is extremely grim for Korean Chinese. The Korean population has grown continuously since 1953, but is expected to enter a stage of increased negative growth in a few years time. Korean minorities have shown the lowest level of fertility among all ethnic groups since the mid 1970s. It reached a below replacement in the late 1970s and 55 percent of replacement level recently.

In Yanbian, the Korean population revealed a reduction not only in total growth but also in natural growth in 1996. Since Yanbian is the center for Koreans, a lower rate is expected in remote areas. The total fertility rate was calculated as 1.74 for 1974 and 1.81 for 1981, but lowered to 1.1 in 1999 in Yanbian prefecture (O.K. Ryang, 2001: 6). The current level indicates, if it continues, that the population will be reduced by approximately 40 percent by 2030 and 60 percent by 2050. This stark fact is often interpreted as a signal for the coming disintegration of Korean communities in China.

The symptoms of disintegration are not limited to this. Among them are the big flows of youth from rural villages to various types of cities in China such as nearby towns, newly developing industrial centers and metropolitan cities in China, as well as heavy labor migration of middle-aged Chosunjok to South Korea. The influx of Han Chinese into Korean villages in rural areas, an increase of marriages between Han men and Chosunjok women, and the export of

5) For a detailed discussion on this topic, please refer to T.H. Kwon (2003a) and T.H. Kwon and Piao (2003).

Chosunjok brides to rural Korea are also considered as symptoms of the break-up of Korean communities.

The movement of the Korean Chinese is influencing Korean communities significantly. The migration of young women to Korea through marriage arrangements with Korean men has particularly important implications for the growth and structure of the Korean population in China.⁶⁾ The total number of Chosunjok women registered to marry Korean men between 1992 and 2001 was more than 45,000,⁷⁾ while the number of Korean women aged 20-29 in China is 195,000. The marriage migration would have lowered the fertility of Korean Chinese by at least 20 percent. In addition, it has caused a serious marriage squeeze among Korean Chinese youth and forced young rural men to move to the cities.

The migration of Korean Chinese is mostly of three types. For adults, labor migration is typical except for the marriage migration of women to Korea. For school children, education related migration is prevalent: First from remote rural villages to villages adjacent to local cities, then to regional centers, and finally to major cities in China or other countries. In the case of internal migration, women and single persons appear to be more migratory. The single migration of married men and women is also frequently noticed. These patterns of migration have brought significant changes in Korean Chinese communities. Dispersion of family members, such as the separation of husband and wife, or children living alone or with their grandparents only, has been widely observed. Moreover, the separation of a couple due to migration often ends in divorce.

The disorganization of Korean villages in rural areas does not necessarily mean the disintegration of the Korean community in general. It has been widely observed in Heilungjiang Province that villagers move to nearby towns with Korean ethnic schools for their children's education, and, as a result, new larger Korean communities develop in those towns (Piao, 1999: 6; Cheong, 1999: 82-90). In Liaoning and Jilin, there were several successful projects to establish new

6) The so-called marriage migration started in 1992 in response to a campaign to find brides for aged bachelors in rural Korea who had little chance of getting married with native women.

7) According to vital statistics in Korea, the number of marriages between Korean men and Chinese women was 47,564 from 1992-2000. Among the Chinese women the number of non-Korean Chinese was estimated to be 2,500.

Korean towns using traditional Korean villages adjacent to large or medium-size cities as a base. In addition, Korean migrant communities were developed and are expanding rapidly in some metropolitan cities like Beijing, and in coastal cities such as Qingdao and Weihai.

In sum, Korean communities in China are transforming rapidly; Urban-centered life will replace agricultural village life, Koreans communities will be dispersed widely beyond Northeast China, and the average size of each community will increase substantively.

3. Identity Crisis and Changes in the Value System⁸⁾

Korean Chinese have maintained dual identities since the inception of the New China. They regard themselves as Chinese citizens with Korean ethnic nationality. Thus, they distinguish the fatherland from the motherland. This dual identity has been acceptable to the Chinese government as consistent with policies on ethnic minorities, while ethnic nationalism has been strongly suppressed. Ethnic minorities have enjoyed various kinds of special treatment from the government, but were controlled carefully so as not to develop political power. For example, Koreans consisted of 70 percent of the total Yanbian population in 1953, but the proportion was reduced to about 40 percent by transferring an exclusive Han Chinese district to Yanbian and bringing many Han farmers and laborers to remote Yanbian areas.

This control of the Han majority in ethnic composition has weakened the power of the Korean minority over every field of life including education, administration, politics, and the economy, even in autonomous Yanbian. As minority nationalities in Tibet and Shinjiang staged a series of revolts in the early 1990s. China's response to these incidents was the tightening of its grip on minority nationalities. The opportunity for Korean Chinese to succeed in every domain of public life has narrowed since 1990.

Koreans in China have also had serious confusion over their national identity as well. China had maintained a blood tie with North Korea by the mid 1980s

8) For a detailed discussion on this topic, please refer to Han and Kwon (1993: 93-126) and T.H. Kwon (2003b).

before it began to pursue an economic relationship with South Korea, and Korean Chinese had naturally thought of North Korea as their motherland. In the meantime, a strong tension was built up between China and North Korea during the Cultural Revolution, and therefore, Korean Chinese had to keep some distance from North Korea. Their emotional ties with North Korea weakened further as the country fell into serious economic difficulties while the Chinese economy showed signs of a departure from stagnation.

In the beginning of the 1980s, an economic exchange between China and South Korea started, and political relations were restored in 1992. In this process of change in international relations, South Korea emerged gradually as a new motherland to the Korean Chinese. They thought of South Korea as a land of opportunity, and there was a rush to visit Korea with a sense of kinship to realize their dream of a new life. Soon, however, many Korean Chinese were disillusioned with a deep sense of loss of their new identification with the new motherland. Most now want to identify themselves neither with North Korea for its poverty and backwardness, nor with South Korea for its unrestrained capitalism and exploitation of Korean Chinese labor.

The modernization and economic growth of China has had a great impact on the Korean Chinese community. It means to them the expansion of their daily experience, and broader and more substantive contact with Han culture. The first cultural item to be influenced is language. The use of the Korean language has increased recently at least in the economic aspect, with growing business relationships between Korea and China. However, the language is often regarded as a crucial barrier for Korean Chinese to succeed and to raise their socioeconomic status in China. Accordingly, there is a growing tendency for Korean parents to send their children to Chinese schools in towns and cities. This tendency has brought worries about the loss of ethnic language and an ultimately weakening Korean identity among the younger generation of Korean Chinese.

The Korean community in China has a history of more than one hundred years. However, the depth and breadth of change in the last decade exceeds that of the rest of the century. The base of the Korean community was rural life embedded in rice farming, but this base is being uprooted rapidly. The younger generation is being immersed into capitalistic ways of living. The lives of Korean

Chinese are under the growing influence of South Korea in all fields except politics and administration. The South Korean influence is readily observed in mass culture, art, rituals, values, education, and technology.

In Korean communities in China, there are significant conflicts between generations, between men and women, and between the rich and the poor. Anomie has also spread widely. Community solidarity has weakened and many symbols of ethnic culture have disappeared. It may be said that the Korean community in China is in the process of rapid disorganization. Nevertheless, this kind of disorganization is not unfamiliar to us. This may be what communities all over the world are commonly exposed to.

IV. Korean Community in Japan

1. Social Status and Discrimination

The status of Koreans in Japan differs greatly from that of Koreans in other countries. Koreans either in China or in the United States consider themselves as a component of their respective societies. The majority of them have citizenship of their countries of residence and are treated as a minority nationality in a multi-ethnic society. In Japan, however, Koreans are legally separated from Japanese. Koreans in Japan, called *Jainichi*⁹⁾ Korean or simply *Jainichi*, are mostly composed of those who migrated or were drafted to Japan as Japanese imperial subjects in the colonial period and their children. In short, *Jainichi* Koreans are a product of Japanese colonialism.

They, however, unexpectedly lost their Japanese citizenship and were classified as foreigners in 1952 based on the agreement on Japanese citizenship between the United States and Japan adopted at the end of the American occupation of Japan. The 1951 immigration decree was enforced, which denied citizenship to Japanese subjects originating from former colonies. Thus, Koreans in Japan were forced to declare the nationality of either North or South Korea. Most Koreans at that time originated from the South, but about 90 percent of them took North Korean nationality. *Jainichi* Koreans holding South Korean

9) "*Jainichi*" stands for "in Japan" in Japanese.

nationality have increased steadily since the 1960s, and now exceeds the number holding North Korean citizenship. This was due to the large number of citizenship transfers after the normalization of diplomatic relations between South Korea and Japan in 1965.

Although the size of the population was relatively small, Koreans had been treated as a special, but generally hated group in Japan. They made up more than 90 percent of all foreigners by the early 1950s, and therefore, were thought of as a major threat to the uniqueness of Japanese ethnicity and culture (M.W. Lee, 1996: 98; S. Ryang, 2001: 63-64). On the part of Koreans in Japan, however, strong antagonism against the Japanese developed from their bitter colonial experiences. This feeling, in turn, had the feedback effect of making them tightly controlled and severely discriminated against in Japanese society. Their proportion among foreign residents is still the largest, but it was reduced to 53 percent in 1993 and further to a level below 50 percent in recent years.

The nature of the discrimination that Koreans had to undergo was diverse. They were discriminated against not only as foreigners, but also as former colonial subjects. They were deprived of the right to provide their children with ethnic education in formal institutions. Most second and third generation Koreans in Japan had no chance to learn their own ethnic language and culture through school education. Most first generation Koreans who speak Korean in everyday life have to communicate with their children in Japanese. In a word, most second or third generation Koreans, who are not easily distinguishable from Japanese in appearance and behavior and have adopted Japanese names, have been fully assimilated into Japanese culture and society.

Although they feel themselves to be part of Japanese society, Jainichi Koreans had to encounter various types of discrimination. They were banned from being employed in public institutions and large business firms and not free to travel abroad. Such discriminations were taken for granted until the 1960s. However, Jainichi Koreans have staged a series of legal challenges to abolish the discriminatory laws against so-called "foreigners" since 1970.¹⁰⁾ These

10) These include Jong-Seok Park's suit against Hitachi for nullifying discrimination in employment toward Jainichi Koreans in 1970; Kyoung-Deuk Kim's legal challenge to be a lawyer without naturalization in 1972; Jong-Seok Han's suit against fingerprinting for foreigner registration in 1980; and a lawsuit to seek employment as a teacher in public schools in 1982.

challenges have contributed to bringing about significant institutional changes, not through a change in Japanese attitudes toward ethnic discrimination, but by building international pressure against such practices (Tanaka, 1995: Section 2-5). To Jainichi Koreans, these changes meant shedding a new positive light on their ethnic identity.

2. Population Dynamics

Hunger was the most important reason for the international migration of Koreans during the colonial period regardless of their place of destination. The outcome, however, was quite different between Chosunjok in China and Koreans in Japan. The number of returnees after the liberation of Korea was very different; about 60 percent did not return from China, while about 75 percent returned from Japan. This difference was associated with the fact that Koreans in China were mostly settled down in rural villages and engaged in farming, while those in Japan had a relatively short history of migration, largely caused by the forced labor draft. According to the first set of data on the Jainichi Korean population, about 647,000 Koreans were reported to have resided in Japan in 1946 (Tanaka, 1995: 38-39). The number fell to 545,000 in 1950.¹¹⁾

Most of those who stayed had neither houses to live nor farms to cultivate in Korea, but succeeded in building a stable living in Japan. They usually lived in cities and engaged in non-agricultural jobs. These patterns of work and residence persist, with about 40 percent of Jainichi Koreans reported to be living in either Osaka or Tokyo in 1993. It is known that those residing in metropolitan cities amounts to 85 percent (M.W. Lee, 1996: 92; Tanaka, 1995: 38-39).

The registered number of Koreans in Japan, mostly Jainichi Koreans, increased without disruption for forty years starting in 1950. The tempo of growth was, however, very slow. The population was 614,000 in 1970 and increased to 688,000 in 1990. The trend has reversed and the tempo of population decline has accelerated since 1990. Compared to the total population of Japan, the growth rate of the Jainichi Korean population has decreased persistently. For example, the Korean population grew by 26 percent

11) The difference of 100,000 can be attributed to the return migration after March 1949.

Table 10.7 Number of Registered Foreigners and Koreans in Japan, 1950-2000

(Unit: Persons, %)

Year	Foreigners	Koreans	% Koreans	Growth rate for Koreans	Growth rate for Japan
1950	598,696	544,903	90.3	-	-
1960	650,566	581,257	89.3	0.65	1.18
1970	708,458	614,202	86.7	0.55	1.03
1980	782,910	664,536	84.0	0.79	1.13
1985	850,612	683,313	80.3	0.56	0.68
1990	1,075,317	687,940	63.9	0.13	0.44
1995	1,362,371	666,376	48.4	-0.64	0.31
2000	1,686,444	635,269	37.7	-0.96	0.26

Source: M.W. Lee (1996: 94).

between 1950 and 1990, while the total population of Japan grew by 48 percent.

Such a phenomenon cannot be explained by a difference in the rate of natural growth. Koreans in Japan have shown a younger age structure compared to the population of Japan as a whole, with a higher birth rate and a lower death rate. Surveys on Korean families in Japan also reported that the number of children in the Korean family was much greater than the Japanese average (M.W. Lee, 1996: 134-135; K.G. Lee, 1983: 139). In short, factors other than natural growth affected the slower growth of the Korean population in Japan. Population loss due to migration could have been an important factor between 1959 and 1984. In this period, 93,339 Koreans including their Japanese wives were repatriated to North Korea. Among them, 88,611 were sent during the first phase of repatriation, 1959-1967, and the repatriation was further concentrated in the first three years.

Naturalization to Japan by marriage and declaration of their children's citizenship as Japanese are considered to be important contributors to the slower growth of the Korean population. The first generation Koreans had a strongly negative attitude toward marriage with Japanese, and the norm of ethnic endogamy has prevailed in the Korean community. As a result, interethnic marriages with Japanese were often treated as a betrayal. However, with the increasing domination of the second and third generation Koreans who are accustomed to Japanese culture and unable to read and speak Korean, the norm

Table 10.8 Ethnic Composition of Marriage Partners for Koreans in Japan

(Unit: Persons, %)

Year	Married persons	% of Koreans	% of Japanese	% of other ethnic persons	Sex distribution of Koreans married to Japanese	
					Men	Women
1960	5,839	79.3	20.1	0.6	73.5	26.5
1971	10,771	72.0	27.1	0.8	47.4	52.6
1980	10,316	59.3	39.8	0.8	40.2	59.8
1985	11,031	43.6	55.7	0.7	41.1	58.9
1990	15,013	31.1	68.4	0.4	25.2	74.8
1992	13,638	28.8	70.6	0.6	27.2	72.8
1997	8,504	25.9	73.2	0.9	37.3	62.7
2000	10,016	20.6	78.1	1.3	28.8	71.2

Source: M.W. Lee (1996: 142); DHL (1998, 2001).

of endogamous marriage lost its hold on the Korean community.

The changing pattern of spouse selection is well reflected in the ethnic composition of the marriage partners of Koreans in Japan. As shown in Table 10.8, the proportion of endogamous marriage was about 80 percent in 1960, but decreased to 60 percent in 1980. The norm of endogamy weakened further and the proportion decreased to 30 percent in 1990. Marriages with Japanese women were more common among Korean men in earlier years. Nevertheless, the tendency reversed around 1970, and marriages between Korean women and Japanese men came to outnumber the opposite by seven to three in the 1990s. This growing sex imbalance in the interethnic marriage of Japanese Koreans indicates a deepening of the marriage squeeze in the Korean community in recent years.

For Koreans, naturalization to Japanese citizenship was very difficult and limited to women married to Japanese men until 1983. In the case of children from marriages between Koreans and Japanese, Japanese citizenship was granted only to those with Japanese fathers. In 1985, this regulation of paternal lineage was abolished, and a new nationality law was adopted to satisfy the equal right requirements between men and women. The new law opened the door for all children born under Japanese mothers and foreign fathers to claim Japanese citizenship. About 30,000 Koreans obtained Japanese nationality in the first three years of the implementation of the law.

Owing mostly to the decline of fertility to a below replacement level, and a growing number of marriages between Koreans and Japanese, the Korean population in Japan began to manifest a rapid decline in absolute number from 1990. The number of Koreans registered as foreigners was reported to be 688,000 in 1990, but fell to 666,000 in 1995 and further to 635,000 by 2000, as shown in Table 10.7. If we select Jainichi Koreans only, who are classified as "foreigners with special permission for permanent residence", the reduction was more salient. The number decreased from 579,000 to 507,000 between 1993 and 2000, showing a 12.4 percent decline. Unlike Jainichi Koreans, the volume of other Korean migrants has grown more rapidly in recent years. In this process of change, three types of Korean communities have emerged in Japan; that is, Jainichi Koreans with Korean nationality, Jainichi Koreans with Japanese nationality, and temporary migrants from South Korea.

3. Identity Questions

The identity of Jainichi Koreans differs profoundly from generation to generation. The first generation regarded themselves as "sojourners", the typical diaspora identity (Lie, 2000: J12; O.K. Ryang, 2001: 59). Their ultimate life goal was to return to their homeland safely and to live comfortably at home after their return. Therefore, they refused to get assimilated to Japanese culture and, instead, tried hard to maintain their own ethnic culture.

The place or nation to go back to was, however, confusing to Jainichi Koreans since Korea was divided into two political entities hostile to each other. The division of the Korean peninsula meant the division of the Korean community in Japan, and, accordingly, the peninsula situation directly influenced the Korean community in Japan. Most Jainichi Koreans have called themselves simply "Jainichi" ("in Japan") rather than "Jainichi Chosenjin" or "Jainichi Kankogjin" (North Koreans in Japan or South Koreans in Japan), dissociating themselves with either of the countries. Among second or third generation Koreans, it is common to remain permanent resident foreigners with no nationality.

Ethnicity, culture, and nationality were inseparable to first generation

Koreans in Japan. Such a unity in identity is no longer found among second or third generation Koreans. Changes in living conditions and the expansion of contact have continuously weakened the unitary identification of Koreans in Japan. The new generation has accepted Japanese culture as natural through formal education and uses the Japanese language in every domain of life except family living, and their ability to use the Korean language has been profoundly impaired. Accordingly, the second and third generations tend to develop dual or multiple identities, by separating ethnicity, culture and nationality from each other. This is often interpreted to be part of a process of the weakening ethnic identity of Jainichi Koreans.

In the mid 1980s, however, some naturalized Koreans initiated a drive "to reinstate their original ethnic family names" in order to make their ethnic identity public. Naturalized Koreans had to register their new family names because of a law prescribing that a citizen of Japan should bear a Japanese family name. As a result, many naturalized Koreans used their Korean family name in private and their Japanese name in public. Their ethnic name has been considered as the most important component of ethnic identity for Jainichi Koreans. Among naturalized Koreans embittered by the loss of their Korean name, a few formally requested to the government to put their original ethnic names on the civil registry in the mid 1980s. The requests were turned down, and it prompted the formation of "a gathering for the reinstatement of ethnic names" to stage a legal battle. Although the number of legal cases was rather small, this movement was enough to indicate that ethnic identity is not inseparable from state identity to Jainichi Koreans and that naturalized Koreans tend to develop an ethnic identity of their own.

Currently, a few Jainichi Koreans are claiming openness in the expression of Korean ethnicity. They argue that one can express his or her Korean ethnic identity by disclosing it to friends or at a workplace, even though they use a Japanese name. This argument is meant to liberate the concept of ethnic identity from what has been narrowly defined by a few exclusive elements beyond the control of individuals, and to replace it by a new cultural concept that is inclusive and broadly defined to make ethnic identity a matter of individual choice. If the idea of the first generation considering the marriage with a Japanese as betrayal

to the Korean people is labeled a "totally closed ethnic identity", the thinking of this young generation could be called a "totally open ethnic identity" (Kashiwazaki, 2000).

V. Koreans in the United States

1. Population Trend

Population figures for Koreans living in the United States show marked differences depending on the source of data. According to the Korean government, the total number of Koreans residing in the United States was 2,123,000 at the end of 2000. Koreans with U.S. citizenship or permanent resident status totaled 1,764,000. On the other hand, the number of Koreans reported in the 2000 U.S. census was 1,077,000. Significant undercounting is apparent in the census data, while the Korean figures are believed to be grossly overreported. The Korean data were collected through Korean American Associations all over the States, and the reported figures are known to be two or three times greater than the census counts.

The U.S. census provides data about Koreans from 1940, and Korean population trends were constructed from the census data as shown in Table 10.9. The trend does not deviate much from current demographic opinion.¹²⁾ In other words, the census figures, though significant underreporting is apparent, are of much better quality than the data collected by the Korean government. The consensus among demographers is that the proportion of Koreans omitted from the U.S. census would not exceed 20 percent and the actual size of the Korean population in the States is 1,200,000-1,300,000. Those omitted consisted mostly of illegal immigrants, students, the old aged, recent immigrants, and women in interracial marriages and their children.

12) In population, natural growth and migration add up to total growth. In the case of the Korean population in the United States, the volume of total growth can be drawn from the census and the gains through migration from immigration reports, and the trends in natural growth from these two sets of data. On these grounds, the natural growth rate of the Korean population in the U.S. was calculated as 1.9 percent for 1940-1970, 1.4 percent for 1970-1980, 2.1 percent for 1980-1990, and 1.1 percent for 1990-2000.

Table 10.9 Korean American Population Growth and the Number of Korean Immigrants in the United States, 1940-2000

(Unit: Persons; %)

Year	Census Population	Annual Growth rate	Period	No. of Immigrants (A)	(A) / Population Increase
1940	8,568	-	1941-1950	107	-
1950	-	-	1951-1960	6,231	72.2 ⁿ
1960	-	-	1961-1970	34,526	-
1970	65,150	6.76	1971-1980	267,638	91.6
1980	357,393	17.02	1981-1990	333,746	75.6
1990	798,848	8.04	1991-1998	136,651	63.4
2000	1,076,872	2.99	1941-1998	778,899	-

Note: 1) For 1941-1970.

Source: Barringer and Cho (1989: 19); Yu (2001: T1).

The number of Koreans (1,076,872) reported in the 2000 census was equivalent to 0.4 percent of the total U.S. population (281,420,000) and 10.5 percent of the Asian population (10,243,000). It is 34.8 percent larger than the 1990 census population. According to the census, the number of Koreans residing in the U.S. was negligible until 1970.

The growth of the Korean population began to accelerate in the late 1960s with the implementation of the new immigration law. The number of Koreans who entered the United States with immigration visas increased markedly in the 1970s and 1980s. About 268,000 Koreans entered the United States in the 1970s, and that is equivalent to 91.6 percent of the total increase of Koreans occurred in this decade. In the 1980s, 334,000 came to the United States, which accounts for 75.6 percent of the Korean American population growth. The number of Korean immigrants fell sharply in the 1990s, as shown in Table 10.9. The number of Korean immigrants between 1991 and 1998 was 137,000 and the share in total population growth decreased to 63.4 percent.

2. Characteristics of Korean American Community

The social background of Korean immigrants in the United States varies greatly in terms of the period of immigration. The majority of early immigrants were women married to American soldiers, including so-called war brides, and orphans or deserted children mostly born between Korean women and American

soldiers. For example, the former were approximately 6,000 and the latter 5,000 among a total of 17,000 Korean immigrants in the period 1950-1964 (Yu, 1977; P.G. Min, 1995). They were rarely integrated into the mainstream Korean community in the United States and remained as marginal to American society as well. The strong prejudice of Koreans against those women and their children has played an important role in their failure to be accommodated into the Korean community. Most women married to American soldiers scattered all over the place, led a hard life, underwent divorce, and experienced various types of social discrimination. The number of Korean students entering the U.S. from 1945 to 1965 was about 6,000. They were mostly men, settled down in the United States after their studies, and became the first generation of Korean Americans to be engaged in professional occupations.

The immigration quota for Koreans was set to 105 per year until 1965. However, the new immigration law adopted in 1965 abolished the quota and greatly enlarged the opportunity for immigration. With the change in the law, family members of Korean Americans rushed to the United States, and it developed into a chain migration. There was also a type of exodus to the United States among middle class Koreans to realize their "American dream". What they dreamed for was invariably a world free from political dictatorship, social unrest, economic instability, and educational problems.

Korean immigrants to the U.S. since the late 1960s have shown a great diversity in their social background. Meanwhile, regulations to curb the migration of professional workers were enacted in both Korea and the United States. For example, Korea prepared a regulation to prevent a brain drain in 1975. The U.S. government adopted a migration regulation in 1976 to respond to pressure from various professional associations in the U.S. As a result, the chance to immigrate for middle class Koreans was narrowed substantively. Korea also stepped into the process of political democratization in 1987 and successfully managed such major international sports events as the 1986 Asian Games and the 1988 Olympics. These events helped Koreans to restore their national pride and may have helped to reduce migration to foreign countries including the United States.

If we compare the number of Koreans who received government permission for overseas emigration and the U.S. data on Korean immigration, it is apparent

that two thirds of Korean emigrants were headed for the U.S. in the 1970s and 1980s. A concentration of migrants was observed in the ages 25-39 for men, in 20-34 for women, and among children aged 0-4. The proportion of female migrants was higher than that of male migrants in all age groups, but the degree of female dominance was more salient at younger working ages and among children aged 0-4 (T.H. Kwon and D.S. Kim, 2002: 360).

This pattern is confirmed by the sex ratios of Korean immigrants in the U.S. For example, the sex ratio or the number of males per 100 females was about 65 for children aged 0-4 but only about 35 for those aged 20-29. Also noteworthy is that the proportion of children among Korean immigrants was twice as high as that of all immigrants (Koo and Yu, 1983: 436). This indicates that the immigration of women married to American men and of orphans has always been an important factor for Koreans who have moved to the United States since 1970. However, girl preference appears to be strong in the case of the adoption of Korean children.

The migration of Koreans to the United States has a hundred year history, and the Korean American community has now grown substantively. Nevertheless, the community reveals marked differences from other Korean communities overseas. It is still in the formative stage and has not stabilized. Most Korean Americans came to the United States after 1970, and accordingly, the first and 1.5 generation Koreans are still dominant in their generational composition.

Although Korean Americans are distributed all over the country, they have still shown a residential concentration. According to the U.S. census, the largest portion, 32.1 percent, of Koreans lives in California and 17.2 percent are in the New York-New Jersey area. In other words, about half of the Korean population settled down in these two areas. Korean Americans are also known to have a tendency to choose metropolitan cities for their residence. Such a tendency toward residential concentration has weakened since the 1992 Los Angeles riot, as evidenced in the growth pattern of the Korean population in each state in the last decade. For instance, the highest growth rate occurred in Georgia, and states that manifested a growth of more than 50 percent were Nevada, North Carolina, New Jersey, Tennessee, Delaware, Washington, Arizona, Florida, and

Virginia.

The residential concentration of Korean immigrants can be understood as a mechanism for adaptation to the host society. Most Korean migrants were not equipped with enough language ability and other qualities essential to get into mainstream American culture and society. Accordingly, they prefer settling down in Korea towns in large cities where English proficiency is less demanding. In addition, they can utilize their Korean social networks in those towns such as place of origin, schools attended, and kinship relations for their adaptation to the new environment.

The majority of Korean Americans went to the United States seeking the "American dream". The dream is, however, nothing but a dream in reality for most Korean Americans. They are striving for survival, have had to endure various kinds of racial or ethnic discrimination, and have little to show to their friends in Korea. First generation Korean immigrants tend to justify their hardship with the belief that the United States is the best place for the education and the future of their children. Most of them ran small retail stores for ethnic minorities, or worked in the service sector.¹³⁾ Most first generation Korean Americans are rarely interested in American politics or culture. They generally show more interest in Korean politics, no less than many Koreans in Korea. Everyday life is also governed by Korean mass culture. They read local Korean language newspapers, watch Korean television programs, attend Korean churches, and participate in Korean civil associations. In a word, the majority of first generation Korean Americans dwell in Korean enclaves isolated from American society.

Christian churches play the most important role in the adaptation of first generation Koreans to American society. About 70 percent of Korean Americans attend church, which is 3.5 times greater than the figure in Korea. This very high proportion of churchgoers is largely explained by the role Korean American churches play. The church usually functions as an one-point service station for

13) According to survey data, the proportion of economically active Koreans in these categories was 47.6 percent in 1989. According to data collected by the Korean Council in New York and Los Angeles in 1963, the proportion of self-employed shopkeepers, service workers and manufacturers was 74.2 percent and 49.5 percent respectively (Choi and Park, 1996: 84-92).

newly arrived Koreans. There, they can meet fellow Koreans who can speak Korean, get information on employment and business possibilities, and solve various kinds of settlement problems. In fact, Korean churches are sometimes blamed for making it difficult for Korean immigrants to accommodate American ways of living and thinking. For example, Korean churches in the United States, like those in Korea, are characterized by a conservative patriarchal orientation. This particular fact is known to have a negative influence on the adaptation of their members to mainstream American culture (Choi and Park, 1996: 121-125; S. Kim and K.J. Kim, 2000).

3. Generation and Identity

Unlike first generation immigrants, the 1.5 and second generation Korean Americans learn American culture through formal education and peer group gatherings. At home, they often talk to their parents in Korean, or answer in English to their parents' questions in Korean. Sometimes, they experience difficulty in communication with their parents. Most of them reject Korean culture. This generational gap is known to cause severe conflicts between older and younger generations in the Korean American community. First generation Korean Americans try to identify themselves as "Koreans", while the second generation pursues "American" identity. However, second generation Korean Americans also can experience various kinds of racial discrimination in everyday life, and this usually brings them to a serious identity crisis. Through this process, they realize that they are different from most Americans, and tend to claim the title "Korean Americans" (L. Kim, 1999).

The Los Angeles riot in 1992 provided a turning point in the life of Korean Americans. For the younger generation, the riot gave an opportunity to think about who they were all over again. The riot aroused nationwide attention to the Korean community in the United States. The riot started out as a racial conflict between whites and blacks. The media, however, described the incident as an expression of the grievances of black people toward Korean Americans, and Korea towns in the region were attacked and looted. Watching what their parents had achieved with such sacrifices was washed away in a moment, the

1.5 and second generation Korean Americans felt strong solidarity with the parent's generation and a greater affinity to Korea town. They participated in the rebuilding of Korea towns and mobilized politically alienated Korean Americans to organize street demonstrations and struggle politically for the first time. In other words, they came to recognize through the Los Angeles riot that they were Koreans, too. The rising status of Korea in the international arena also helped the 1.5 and second generation Korean Americans recover their Korean identity (E.T. Chang, 1999; Choi and Park, 1996: 132-142).

This formation of solidarity does not mean overcoming the cultural gap between generations. American culture is taken for granted by Korean American youth. For them, interethnic or interracial marriages are natural. This may lead to the conclusion that the assimilation of Korean Americans to American culture is just a matter of time. This view, the melting-pot theory of America, however, has been subject to diverse criticisms. It cannot explain properly the striking differences between ethnic groups and the continuous reproduction of various ethnic cultures in the United States.

A perspective incorporating such criticism is the salad-bowl theory that views American culture as representing diversity in unity rather than an assimilated whole. It may be argued that ethnic identity is essential for ethnic minorities since ethnic solidarity functions as important social capital in a multiethnic society like the United States (I.J. Yoon, 2001). The development of the "Korean American" identity among Korean American youth can be better understood in this context. Then, the content is influenced in part by the relationship between Korea and the United States and the status of Korea in the World.

VI. Concluding Remarks

The number of Koreans overseas has grown substantially since 1970. The Korean government counted 703,000 in 1970 excluding Koreans in China and the Soviet Union (CIS) who had no diplomatic relations with Korea at that time (Table 10.4). The number tripled in 19 years, and became 2,322,000 in 1989.

After 1990, Koreans in China and the Soviet Union were also counted, and the Korean population overseas reveals an increase from 4,832,000 in 1990 to 5,654,000 in 2000. The primary component of these increases was the rush of Koreans to the United States, which started in the late 1960s. Another important factor was the rapidly growing number of Koreans staying in foreign countries as temporary residents. For example, the proportion of temporary residents among Koreans overseas was only 5.6 percent in 1994, but increased to 14.1 percent in 2000. The trend is expected to continue with the growing dependency of the Korean economy on the world market.

Korean communities overseas change rapidly. For Korean Chinese, the place of residence is changing fast from farm villages to urban centers. They began to move beyond Manchuria to industrial as well as metropolitan cities all over China, searching for new opportunities. The migrants, however, live together by building Korean villages in the newly settled cities. In a word, Korean Chinese society is under a total reshaping through regional dispersion and concentration. The traditional communities are on the verge of disappearing, and individual families dissolve frequently in this process. Furthermore, the Korean Chinese population has already entered the stage of reduction due to the world's lowest level of fertility and the marriage rush of Korean Chinese women to Korea. Many Korean Chinese intellectuals worry about the current situation. They predict that the Korean Chinese population will be halved in less than 50 years and that this rapid population reduction will bring Chosunjok autonomy in Yanbian to an end in the near future.

Most Jainichi Koreans have already been assimilated to Japanese culture with the shift of generational domination from the first generation to the second and third generations. The Jainichi Korean population has declined considerably in recent years. The phenomenon is largely explained by two factors. One factor is a growing number of Jainichi Korean youth marrying Japanese to become naturalized to Japan, and the other is the tendency to choose Japanese citizenship in the case of children born under Korean-Japanese couples. As a consequence, the share of Koreans among foreign residents has dropped markedly in Japan. It exceeded 90 percent in 1950, but fell below 40 percent in 2000. In a word, Jainichi Korean society is undergoing a rapid process of

dissolution. This trend coincides with the surfacing of a "Korean Japanese" identity in a limited group of ethnic Koreans holding Japanese citizenship.

The Korean American community in the United States is still expanding, although the tempo has fallen significantly since 1990. In contrast to *Jainichi* Koreans or *Chosunjok*, Korean Americans come from a diverse background. They are composed of the brides of American soldiers, orphans adopted by American families, students pursuing an advanced education, those seeking upward mobility, and immigrants coming on family invitation. Their occupations and behavior vary along with their background. Nevertheless, their life tends to be confined to Korean enclaves. They still lack power to resist various types of discrimination. Accordingly, political empowerment and activism are often mentioned as the most important issues in the Korean American community.

The relationship between Korean communities overseas and Korea, the motherland, was remote or marginal until the early 1980s, but has been closer since the mid 1980s. Now, Korea's role in the world and its policies on Koreans overseas have emerged as important issues in Korean communities. The identities of second and third generation Koreans living in foreign countries will undoubtedly depend on the meaning their motherland provides them with. It is also well acknowledged that the network of Koreans overseas is a vital resource for Korea's ability to compete in the global market. Therefore, policy considerations by the Korean government on Koreans overseas is an urgent, as well as an important, issue.

POPULATION POLICIES

Sang-Tae Park

I. Introduction

Ever since the end of World War II and especially after the Korean War (1950-1953), population problems have become a matter for public concern and debate in Korea. The primary reason for this lies in the sharp rise in the rate of population growth. This paper attempts to present the population problems broadly discussed so far and examine their policy implications. Several topics are selected and briefly reviewed for this purpose.

Korea has experienced a substantial change in the growth and structure of the population over the last several decades. Along with China and Japan, Korea has nearly completed its demographic transition, reaching low levels of fertility and mortality. The Korean government together with private organizations have successfully made, and continued to support, the strongest efforts to reduce initially high levels of fertility to low levels compatible with the country's economic and social development goals. Behind the success of the program was the support of married couples who adhered to birth control practices.

The population of Korea is now classified as being in incipient decline or "transition completed," which is characterized by a fertility rate declining to or

even below the replacement level. It is generally accepted that social and economic development is closely related to demographic progress. In other words, social and economic development cannot be achieved with high fertility and mortality. Also, medium and low levels of fertility and mortality may not be realized without substantial social and economic development.

Noticeable, however, is the fact that the experience of China questioned the validity of such a view, which was based on the experience of more developed countries. Threshold hypothesis is an example. Improving economic and social conditions are unlikely to have much effect on initially high fertility in a developing country until a certain level of social and economic development is attained; but once that level is achieved, fertility is likely to enter into a decreasing stage and ultimately stabilize at a much lower level. Levels of literacy and urbanization have been most frequently mentioned in this hypothesis (UN, 1973: 95-96). In the case of China, however, these two indicators were not in accordance with the levels of most countries that had experienced a fertility decline from a traditionally high level, a gross reproduction rate (GRR) of 3 or above, to a medium level, GRR 2-2.9. The experience of China suggests that unlike other social and economic policies, the adoption of a population policy based simply on general models or existing theories would not necessarily lead to the achievement of policy goals due to the existence of intervening variables not yet discussed.

II. Population Policies and Thoughts on Population

Population policy in this chapter is defined in a narrow sense: policies being concerned with efforts to affect the size, distribution, and structure of the population and its processes of change including fertility, mortality, and migration. Population policy can also be viewed, from a broad perspective, to include efforts to regulate economic and social conditions that are likely to have demographic consequences. However, population policy here is narrowly understood as positive and deliberate action taken by the government to achieve

adopted goals in the interest of national well-being.

1. Optimistic and Pessimistic Views in East Asia

Before the modern era optimistic views of population growth dominated. The central proposition was that a large population is the source of national wealth and security. The underlying assumption could be expressed as follows: The ratio of national product to total population remains constant or improves as population increases. The reasoning for such an assumption was the belief that the resources of the earth were inexhaustible and the growth of population promotes the efficiency of production (Hutchinson, 1967: 108-109).

Precursors to recent theories on population can be found in ancient writings. Of great antiquity is the thesis that excessive population growth may reduce output per worker, depress the living standards of the masses and engender strife. Such an idea appears in the works of Confucious and his school, as well as in the works of other ancient Chinese philosophers. Some of these writings suggest that the authors had a concept of optimum population, more specifically, optimum size of population engaged in agriculture. Postulating the ideal population size for a given land, they argued that the government is primarily responsible for maintaining optimum population levels by removing people from over-populated to under-populated areas.

These ancient writers in East Asia also paid attention to another aspect of population, the checks to population growth. They observed that mortality increases when the food supply is insufficient; premature births make for high infant mortality rates; war checks population growth; and the high cost of the marriage ceremony reduces marriage rates (Yang, 1983).

Despite these views on population and resources, the doctrines of Confucious regarding family, marriage and procreation were essentially favorable to population increase. As for the motivation and values of Koreans on this matter, there are plenty of sources. It has been widely known that Korea has had a long tradition of pro-natalistic thoughts and policies. However, there have also been a significant number of pessimistic views on having a huge population. An example is *Shil-hak*(實學) (S.T. Park, 1984). *Shil-hak* is an academic school

developed by scholars in Korea from the 17th to the 19th century. It represented a group of scholars advocating a revised form of Confucianism, i.e., one which incorporates some modern scientific thought including economic utility concepts.

2. Remarks on the New Population Policy

According to UN projections, the global demographic transition will end by the middle of the 21st century. Current UN population estimates show that population growth rates are declining nearly everywhere and at a faster rate than was projected. Even regions that have been late in joining the world demographic transition will undergo declines from high fertility and mortality to low fertility and mortality by the middle of the 21st Century, ultimately reaching zero population growth (ZPG), but with possible regional variations. This universal trend is viewed as being without precedent in world history (Harbison and Robinson, 2002: 37).

Consequently, overpopulation fears will fade as world fertility falls. One of the major debates in the past was the population-resource relationship, i.e., the global carrying capacity. Assuming that some resource materials may be substituted by some alternatives, the most important factor is the capacity of food production to feed the population. With the primitive level of productivity in the hunting, fishing, and gathering stages of human economic development, several million could not be sufficiently fed on the entire planet. The population-carrying capacity, therefore, is very much dependent on the technological level of the society for the production of food together with the land available for crops and the amount of water available for irrigation over the long term. During the 20th century, many experts with various backgrounds estimated that the population would meet the carrying capacity. The numbers they presented indeed showed a large variation ranging from one to one hundred billion. Thus, the concept of over, under, and optimum population is impossible to define without ambiguity and subject to open-ended interpretation. In addition, in measuring the capacity, social well-being must be considered in addition to material well-being. The level of such criteria may be determined by our generation as well as by future generations.

Population growth is regarded as a signal for a dismal future in some areas of the world, while in other areas it may be a signal to a bright future. Each country or regional government nowadays is in a position to formulate new population policies to meet its own needs for development. Most countries in the world are in a unique position in formulating new population policies to meet their own needs for development purposes. Just as Korea demonstrated her capacity for successful family planning programs in the early 1960s and the 1970s, Korea now must overcome such new challenges as low fertility and population ageing.

At this stage of social, economic, and demographic development, priority must be given to maintaining the stability of the age and sex structure. For this purpose, keeping a fertility level at near replacement is indispensable. Due to a lag in the effect of mortality improvement, temporary population growth is unavoidable, but it seems that the size of the growth will be in the range that Korea can afford.

III. Policies Affecting Fertility

1. Low Fertility-A New Social Problem

As mentioned in the previous section, Korea had a successful birth-control program. In the early 1960s, however, the word "birth control" had been a taboo in Korea and even its euphemistic expression "family planning" was not explicitly mentioned until the end of the decade.

The total fertility rate (TFR) in Korea increased from 5.40 births per woman in the early 1950s to 6.33 births in the late 1950s because of the baby boom that followed immediately after the Korean War. However, the TFR showed a sharp decline thereafter, down to 4.0 births from 1970-1975, to 2.4 births from 1980-1985 and to 1.4 births from 1995-2000. It is estimated to further decline to 1.2 births after 2001 (See Chapter 3). Noticeable is the fact that the TFR in Korea has never been over 2.0 births per woman for the last decade and that the TFR in 2000 and thereafter will become lower than the average of more developed countries. According to the Korea National Statistical Office (KNSO),

the TFR in 2002 was 1.17 children per woman while it stood at 1.32 in Japan and 2.01 in the United States. Korea has confronted a long and continued crisis of low fertility.

Such continuing low fertility, especially lower than the replacement level, will give rise to many problems no less serious than those that high fertility would bring about. First, an ultimate decrease in the size of the population can be foreseen within a few decades, although it may be delayed by increased life expectancy. There are few countries in the world which would accept and welcome such depopulation.

At the same time, rapid ageing is underway and it will accelerate in the coming years. A decline in fertility increases the proportion of the aged. As long as the mortality rate of infants and children has room for further improvement, rising life expectancy has little to do with age structure. The ageing process is discussed in section VI.

2. World Fertility Decline and Policy Turnabout

As of 2001 more than 40 percent of the world population was in areas of a below-replacement fertility level. The proportion is projected to increase and pronatalistic policies will be widely accepted in all countries within a few years except for those where the fertility level is still very high.

Such low fertility and mortality, resulting in low population growth rates combined with an ageing population, are new issues challenging Korean society. At this moment, reviewing some experiences in more developed countries could be instructive.

During and after the world depression of the 1930s, declines in fertility had caused GRR to fall below one in countries including Austria, England, Wales, Luxemburg, Norway, Sweden, Switzerland, France, and Germany. These trends invoked concern about eventual depopulation (Glass, 1940: 150-159). The different goals of each government shaped a variety of responses to the situation. Most policies were generally aimed at encouraging fertility and increasing the capacity of families to raise children in accordance with higher living standards.

After World War I, official recognition was given to the pro-natalistic movement in France. In Germany, Italy and Japan where military expansionist regimes were in power, such policies as allowances, marriage loans, tax benefit, maternity aid, and awarding medals for the mothers of many children, were practiced. However, the impact of the measures appears to have been little because of the economic and political insecurity during the period and the difficulty of allocating sufficient resources to achieve the desired goals.

In France a well known policy was the legal prohibition of the distribution of birth control devices and induced abortions from 1920-1923, as well as the family allowance system of 1932 and after. Because of insecurity and economic problems, the French policies on fertility appear to have had little impact before World War II. Spengler concluded that the family allowance system failed to stimulate the birth rate of France (Spengler, 1938: 254-255). Two reasons for the failure were pointed out: the allowance was inadequate to cover the cost of childcare; and the trend toward smaller families had altered economic and cultural patterns and therefore were not readily reversible.

In Germany pro-natalist measures were linked with the nationalist and expansionist policies of the government led by Hitler from 1933. A policy discouraging contraception and prohibiting induced abortion was adopted. The policy emphasized financial aid to parents with loans, tax benefits, and grants and services for the support of children. German measures seem to have contributed to higher rates of marriage and fertility to some extent, although the influence cannot be completely isolated from the effects of general economic recovery. As for the family allowances, they had some effect on fertility as a measure of social policy, but not as demographic policy. There is no simple answer as to whether and how the allowances affected family size (Glass, 1940: 219).

In Japan, as early as the 18th and 19th centuries, measures designed to stimulate population growth were adopted. The measures included attacks on anti-natalistic attitudes and positive assistance to parents. However, their effects were to some extent checked by widespread abortion and delay of marriage. The measures had not been enough to remedy the general stagnation of the population in the absence of more fundamental economic and social changes

(Taeuber, 1958: 29-33).

In the Soviet Union and the former socialist countries of Central and Eastern Europe, a wide variety of population-related policies were implemented after World War II. The measures to raise fertility included liberal maternity leave, financial support for mothers staying at home, family and child care allowances, birth grants, subsidized prices for child clothing and care, loans to newly weds, and rents and pensions tied partially to family size. They contributed to increasing fertility to some extent, but after a few years they were taken for granted and had little or no effect on fertility (Frejka and Ross, 2001: 245-246).

In the 21st century, government policies must rest upon the voluntary participation of individuals. In other words, government policies will have a greater chance of success if they are in accordance with individual beliefs.

Religious teachings related to fertility are thought to provide major support to traditional values for the large family. In the modern era, religious values have given way to secular attitudes and ideas. In the past, higher fertility was of central importance in community life especially familial and kinship ties. Where the nuclear family is subordinate to wider kinship groups, the burdens of parenthood are eased by the cooperation of other members of the household. In modern industrial society, the ever-increasing opportunity cost of parents, especially of women, makes large families a liability rather than an asset. Reinforcing traditional values for the large family with careful consideration of the changed social structure could be one of best policy alternatives for Korea.

3. Policy Implications for Fertility

Korean culture has been traditionally characterized by ancestor worship and filial devotion. Such sentiments have been preserved over the last several centuries. The *Li-ji*(禮記), one of the classics of the Confucian School, introduced three types of impiety: those who do not work to support their old parents; those who follow their parents blindly and do not challenge even the unjust decisions of their parents; and those who do not marry or become heirless, which means having no son. Mencius, one of the most respected Confucian scholars in Korea, regarded the heirless as those committing the worst type of

impiety. This cultural value made Korean women prefer sons and has resulted in an unusually high sex ratio at birth in Korea in the last decade.

Recently, however, late marriage, not marrying, divorce, and separation are more frequently practiced than ever before. They are becoming more easily accepted in society. They will become more prevalent and form norms governing the marriage behavior of Korean men and women which will certainly lead to low nuptiality and fertility.

Past experiences have made it clear that there must be some prerequisites for successful pro-natalistic policies (Harbison and Robinson, 2002: 45-46). Any new policies with pro-natalistic purposes should be female-centered and female-directed. Also, the policies should be embedded in more comprehensive programs of health, education, and family support toward prospective mothers. Policies that enforce a male-dominant economic and social order will certainly face strong opposition from feminist groups. Therefore, women must be involved in planning the policies and executing the programs. In this respect, the most relevant unit for the program should be woman and her children.

The policy would have to offer a significant amount of economic support and provide a strong motivation for a woman to have a child. This means that the financial and psychological costs of women having more children would be subsidized by the state. The measures may include state run day-care centers, pre and post maternity leave arrangements at work, and subsidies for educational expenses at least through secondary school. Such measures would be very effective in Korea considering the strong drive of parents for the education of their children. In addition, artificial insemination is a well-established procedure, but now ova can also be artificially implanted, extending a woman's normal fecundity.

Any future pro-natalist policy would have to be promoted through a vast mass media campaign aimed at changing public attitudes toward fertility. This campaign would have to aim to create a strong positive image of having more children.

Other significant proposals have been suggested by some writers (Harbison and Robinson, 2002: 45-46). For instance, parents should be given an extra vote

in national elections for each child under age 20; that adults of working age be obliged to pay a part of what would otherwise be their social security tax directly to their own parents, and to reduce the costs and increase the benefits of having more children.

IV. Policies Affecting Mortality and Health Conditions

Prolongation of human life is universally viewed as a positive goal, providing incentives for direct efforts in the areas of medicine and public health. Barring catastrophic and completely unpredictable events such as thermo-nuclear warfare, unusually severe famines, the reappearance of great epidemic diseases or the appearance of new ones, life expectancy is likely to continue to improve. Health policies are interrelated with other economic and social policies. As the living standard improves with economic development and income growth, demands for medical and health services increase. If these demands are met with sufficient supplies of services, labor productivity may improve and thus help further economic development.

Facing many challenging health problems, the government must select priority areas for action, bearing in mind limitations on resources. In more developed countries, the priority areas in the medical and health services are usually selected based on the results of research using economic utility (cost-benefit) approaches. In other words, the return of investment in medical and health services are weighed against that of investment in other fields. In Korea there have been few such analyses at the national level and therefore, more comprehensive and in-depth studies are needed from now on.

To ensure a better quality of life, there should be a greater allocation of resources to preventive medicines than of curative medicines. A high priority must be given to the formulation of systematic and synthetic policy programs to protect vulnerable and disadvantaged groups such as women in the peri-natal period, infant and child groups, and the aged.

Improvement in nutrition for the whole population and protection from

environmental pollution are the challenging problems. These require efforts to prevent common infectious diseases and cope with the outbreak of new diseases such as SARS (severe acute respiratory syndrome).

To formulate better health policies, securing demographic data is indispensable. Statistics collected and distributed by the Korean government in past decades include data on mortality by age and sex and some morbidity, which are not usually available in most developing countries. However, more budget and greater resources are required to improve the quality and coverage of the data. To join more developed countries in terms of demographic data quality, mortality and morbidity data by region, occupation, and education as well as age and sex must be produced. Obtaining such information and analysing the data is the main avenue to understanding and hence improving life expectancy as well as health conditions.

V. Policies Affecting Population Distribution

1. Population Redistribution Policies

Poverty in rural areas is a problem that has existed for a long time. However, three new factors have affected current rural conditions in the process of industrialization and urbanization.

The first factor is that, until recently, there has been unprecedented overcrowding in rural areas where fertility rates are still high, while urban employment conditions have not been sufficient to absorb the surplus rural population. The second factor is that conversely many rural areas in more developed countries suffer from depopulation. Finally, in terms of spatial distribution, the utilization of land for agriculture increased near large cities, even though the soil fertility is not better than that of remote areas.

The various experiences of countries under different circumstances cannot be reviewed systematically since there are many indirect measures to encourage or discourage migratory flows, especially, rural-to-urban. Following is a general review of the types of population redistribution policies most widely adopted so

far (UN, 1973: 217-224).

1) Return of Rural Migrants

The attempt to dissuade rural migrants from moving to urban centers, or to organize their return to the villages, is the most direct measure adopted by some countries. Basic assumptions for this policy are that both the economic and social costs of maintaining surplus labor are much greater in the cities than in the countryside; the urban unemployment problem would be eased by such measures. Examples of such policies in more developed countries are those of Paris and London in the 16th and the 17th centuries.

In general, however, such policies have not been considered either feasible or desirable in countries of market economies. In such centrally planned economies as China, a variety of measures have been adopted effectively. Examples are the Great Leap Forward movement in 1958 and the Xia Fang policy in 1968, which was designed for educated youths to return to the countryside to be reeducated by the poor and peasants (Chen, 1972).

In the late 1970s and early 1980s, the Korean government encouraged urbanward migrants to return to rural areas by providing land and resettlement grants. However, the government discontinued the policy because its effect on population redistribution was negligible given the enormous cost of the program.

2) Rural Development

There have been suggestions that urban problems might be eased by means of a program for rural development. By improving living conditions and expanding employment opportunities in rural areas, the motivation for migration to urban areas is thought to lessen. Thus, cities would grow more slowly than they otherwise would. Most rural development programs have been set up to develop sparsely populated areas with sufficient resources to build up both agricultural and industrial capacity. The Hokkaido project of Japan, the Mindanao project of the Philippines, the trans-islands migration projects of Indonesia, and the development of virgin lands in the former Soviet Union are the most widely known projects of such a type.

Rural development efforts made by the government in the last decades in

Korea include rural electrification, expansion of infrastructure (schools, post office, police), increased medical services, and the enhanced availability of mass media. These have improved living conditions roughly comparable to large cities. However, recent rapid urbanization in rural areas has made this policy less effective than before.

3) Decentralization of Industry

A number of governments have taken steps to discourage further concentration in crowded city areas through various regulations on the location of industrial units. (i.e. the creation of zones around cities allocated for industry). Such decentralization policies are very often based on regional development plans. The policy aims at two goals; first, to check the flow of migrants into already heavily industrialized cities; second, to create favorable conditions for an influx of migration.

In April 1970, the Korean government passed a bill, the "decentralization of Seoul metropolitan area," which included seven long-term plans and" was proclaimed for the balanced development of regions in the country (KIHASA, 1991: 593-5).

4) Construction of New Towns

Building new urban settlements is a recent measure to check migration to large cities and metropolitan areas. The policy has been known to be more effective in large countries than in small ones. It is associated with the development of small, insulated urban settlements which are self-sufficient with respect to employment, shopping, and community facilities. Building new towns is usually connected with policies for the decentralization of industry.

In Korea, Kumi, Ulsan, and Ansan are new cities (industrial complexes) constructed as a measure to relieve demographic pressure on large cities. In addition, five new towns near Seoul i.e., Bundang, Ilsan, Buchon, Pyongchon, and Sanbon were constructed for such purposes.

5) Development of Growth Poles

The development of growth poles is one of the most widely adopted policies

as more countries are in the process of industrialization. The term "growth pole" has been used with at least two distinctly different meanings. In economics it is used to describe the polarity of certain firms or industries in an abstract economic space. In demography, it is simply used to refer to geographic nodes attractive to industrial development and population settlement. Growth poles are cities, already existing or being planned, with the design to grow large enough to serve as counter-places to very large cities in which economic expansion and population settlement have already been accomplished. Growth pole cities may be suburban satellites within commuting distance of a major metropolis or they may be developed in isolated regions as nuclei for new industrial complexes.

In the early phase of industrialization, the benefits of large cities are not available to small or medium size cities. However, in later stages of industrialization, as the total size of the city population increases, the excessive overcrowding and inconvenience of large cities outweigh the benefits.

As mentioned before, the Korean government, under the "national land development plan" in 1971, divided the whole country into eight large regions consisting of seventeen medium size areas, in each of which a growth pole city was designated. The policy had a positive effect on regional development, absorbing some of the surplus rural population. However, developments in transportation means and the small size of the country made the effects negligible in Korea.

2. Views on the Population Concentration of the Seoul Metropolitan Area

There are two contrasting views on the population concentration in and around the Seoul Metropolitan Area; one is the laissez-faire view, which proposes to admit the reality and abolish various regulations against concentration; another is the interventionist view, which recommends that policies against concentration should be continuously executed and even reinforced.

The laissez-faire view considers the concentration as "natural" and "given." Following the principles of neoclassical economics, the view holders

contend that in free market economies the total sum of the benefits of concentration is greater than that of the costs. They object to the negative aspect of concentration, i.e., regarding the phenomena as a harmful by-product of economic growth. Rather, they focus on the positive aspect of it, as a prerequisite and necessary condition for growth, which leads to a functional division of labor and an increase in productivity, and thus to economic growth.

On the opposite side, the interventionist view follows the Keynesian view that free competition breeds "market failures." Regional development plans that operate on the basis of free market principles result in a regional imbalance of development. The government, which is for the good of the people, therefore, should intervene to correct the distortion with necessary administrative measures including heavy taxation. Moreover, without any intervention, the laissez-faire policy will lead to the relative deprivation of residents in less developed areas, worsening the quality of life of residents in concentrated areas, and jeopardize the harmony of the Seoul Metropolitan Area and the other areas (S.H. Chang, 1998).

There is no evidence that the laissez-faire policy without any government intervention has ever achieved the desired goals perfectly. In the meantime no empirical evidence has been found in a free market economy that interventionist policies alone result in balanced regional development and the economic growth of the whole country. Admitting market principles and minimum intervention by the government has become a modal pattern of policies.

3. Expansion of the Seoul Metropolitan Area and National Development

In an effort to make Korea a business and transportation hub of North-East Asia and to enhance its ability to compete in the World, in 2003, the Ministry of Construction and Transportation announced a plan to develop a new belt, the Suwon-Inchon axis, in addition to two already existing axes, Seoul-Inchon and Seoul-Suwon. The plan runs counter to the efforts made by the government, which have included the prohibition and restriction of unchecked expansion by the construction of housing and factories within the Seoul Metropolitan Area.

The turnabout in policy is thought to be a consequence of the decentralization of the government, which has resulted in the proliferation of new plans by the local governments within the Seoul Metropolitan Area. Redistribution policies advocated by governments in the past are no longer effective. Indeed the restrictions on factory expansion has lowered the competitiveness of many enterprises.

In a free market economy, for balanced regional development, strong measures are needed especially on tax redistribution through the taxation of development benefits and for the improvement of financial independence through tax law revisions. In addition, establishing labor training institutions and especially competitive high schools in local government areas might be very effective in Korea.

The most important factor for the concentration in Korea is thought to be the political structure. Since World War II, except for a short period of time from April 1960 to May 1961, Korea has been under a centralized presidential system. Although centralized systems are often very effective for economic development, the regimes before 1993 were dictatorships in their nature or authoritarian at best. As all social institutions were completely controlled by the government in the hands of a monopolistic group, other institutions in economy, commerce, and culture have become subordinate to the political institution. Major decisions are made by a few men of influence. Businesses, for example, which were geographically located far from government offices had to spend extra time and effort to contact them. The remarkable development in communication systems and the adoption of local autonomy in the government system will help alleviate such burdens in the future.

VI. Age Structure and Ageing

1. Demographic Significance of Age Structure

The proportion of the elderly (aged 65 or over) in the total population remained at 3.0-4.0 percent from 1960-1980, and started to increase rapidly thereafter, reaching 7.1 percent in 2000. It is projected to be 14 percent by 2020 (KNSO, 2003a). The potential support ratio (the number of people in the labor force aged 15-64 divided by the number aged 65 or over) was over 15 in 1950, but has dropped to 10 in 2000. The ratio is projected to drop further to 5 in 2020. The pace of population ageing in Korea is projected to be one of the fastest in the world (Cho and Lee, 2001: 7).

The age structure of a population in a given area is determined by its fertility, mortality and migration. Without significant mass international migration, the level of fertility has much more impact on the age structure of a population than mortality does.

The age structure of a population with high fertility is considered "young", while that of a population with low fertility is considered "aged." United Nations publications present estimates of the differences between these two populations utilizing stable population models (UN, 1973: 274). For example, in the case of the gross reproduction rate (GRR) being 1, the proportion of the aged 60 or over is in the range of 17-22 percent depending on the level of mortality (measured by expectation of life at birth) to be 20, 40, and 70 years. Under the assumption of GRR being 3, the corresponding proportions are in the range of 3.9-4.3 percent, for the respective level of mortality as above. On the other hand, in the case of expectation of life at birth being 20 years, the proportion of those aged 60 or over is in the range of 16.9-3.9 percent depending on the assumed levels of fertility, GRR being 1-3. When expectation of life at birth is assumed to be 70 years, the proportion is in the range of 21.9-4.3 percent.

It is obvious that age structure has an important bearing on the ratio of dependency. Also, the age structure of a population has an impact on consumption levels and patterns, since people at different ages have different needs.

In general, it has been shown that rapid population growth and the characteristics associated with it (i.e., a young age structure) place a heavy burden on the economy and society. A rapid growth of population implies an accelerated expansion of all needs, including consumption, education, health, housing and other facilities required to maintain the existing standard of living. Although there may be some advantages of population growth, most demographic and economic models confirm that low population growth is a prerequisite for the growth of income, especially in less developed countries.

2. Social and Economic Effects of Ageing

This section first reviews the disadvantages of population ageing. Then, it examines debates on this matter. It has often been argued that the ageing of population tends to depress living standards in industrialized countries. In countries where fertility has declined to a very low level, ageing results in a shifting ratio of children to aged persons. This has important implications because the cost of raising a child and that of supporting an old person is not the same.

Not only the relative size of the working population, but also the efficiency of workers may be affected by population ageing in general and the ageing of the labor force in particular. A young labor force is more efficient than an older one, since younger people may have better qualities such as physical strength, enthusiasm, adaptability, capacity to learn new skills, and ability to pursue innovation. Some authors believe that efficiency, not only of workers but also of their instruments of production tends to decline as population ages, since the need for renewing equipment is not felt as strongly in an older population as a younger one. On the other hand, wisdom, experience, patience, breath of view, stability and judgement are qualities more prevalent among older workers than younger ones.

As for the flexibility of the economically active population, it is generally accepted that young people are more mobile and adaptable and a decline in their share of the labor force will result in less flexibility, other things being equal. Compared to younger workers, older workers have been viewed as being less

likely to migrate in search of better employment opportunities. Some put great emphasis on the possibility that economic, cultural, and political progress may be slowed down where the population has a relatively large proportion of aged persons.

While the family has been an efficient social institution for the care of dependent children, it seems unlikely to continue to provide adequate security for older persons in contemporary society since an increasing proportion of elderly people have fewer children or tend to live apart from their children. Owing to the rapid growth of the elderly population and the breakdown of the extended family, an increase in public expenditure for the elderly seems inevitable. Among these, the provision of housing suited to the aged has become a growing public concern. Increasing longevity also presents a challenge in the sphere of health and medical services, which are saddled with soaring medical costs (UN, 1973: 289-292).

There are also, however, rebuttals on the disadvantages of an elderly population. Some are from the perspective of economics (Schultz et. al., 1991: 11-30). First of all, some economists question the notion of population ageing and argue that the definition is more elusive. Population ageing is usually defined as the increase in the share of elderly persons beyond a particular age (i.e. 60 or 65). Thus, it is necessary to select the age at which people become elderly persons. This age has conventionally relied on the age required for pension eligibility. But increasingly, the establishment of age criteria for the elderly becomes arbitrary due to changing attitudes toward what is an appropriate retirement age.

One of the most significant trends among the older population is a decline in labor force participation rates. For example, in the United States, 27 percent of those aged 65 or over were in the labor force in 1950; by 1987 this proportion declined to 11 percent. The figures were more dramatic if we focus on men. In 1950 about 46 percent of elderly men were in the labor force; by 1987 only 16 percent were employed or seeking work. The U.S. is not alone in its trend toward early retirement. In some countries, older workers are often asked to leave the job at around the age of 55.

Savings are an important precondition for economic growth because they

provide the capital tool that is necessary to undertake investments, which in turn generally increases productivity. Savings may decline since social security benefits reduce the need to save for retirement. On the other hand, the availability of social security benefits may encourage early retirement from the labor force. Since early withdrawal implies a short working life and long retirement years, it can be predicted that people may put in more savings while working. The net impact of social security benefits and early retirement operating from opposing directions has not yet been confirmed.

Some predict that population ageing and slow population growth reduce investment. Slow population growth and population ageing are associated with a reduction in labor force growth. It also raises the ratio of capital to labor and reduces further investment ratios. However, increases in income per capita, which is consistent with population ageing, compensate the ratio of reduction.

Compared to younger workers, older workers often receive high wages but are perceived to be less productive. However, researches regarding the effects of age on occupational performance indicate that these vary widely according to occupation and industry. In some occupations requiring endurance and physical strength, productivity deficits of older workers have been found. In other occupations, such as sales, older workers have been found to be more productive than younger workers.

As population ageing is expected to continue in Korea, many studies for practicable solutions are needed.

3. Policy Implications of Ageing

Population ageing is occurring more rapidly in Korea than in any other country in the world, mainly due to the rapid decline of fertility in recent years. It is emphasized that failure to take account of it now will result in a severe "time" penalty later. Some of the policy recommendations suggested by ESCAP deserve attention here to accommodate population ageing in Korea (ESCAP, 1996: 20-24).

First, misconceptions concerning the role of the elderly should be corrected at the individual level. In Korea, the role of the elderly has not been accounted for to the extent that it deserves. The role of the elderly is changing within

changes of social structure. It is closely related to ongoing changes in individual roles and family structure. The elderly are capable of contributing to the benefit of others in their family, community and the country.

The elderly should be considered as valuable human resources that should be utilized for social development. Their skills, expertise, and experiences, which are mostly unutilized resources, can be made use of at a reasonable cost. They should be encouraged to take more active roles, looking after their grandchildren in the household, exposing children to tradition and their cultural heritage, inculcating the moral values of people in their communities, and participating in environmental protection activities for the country.

Second, the family continues to be the main source of social and economic support for the elderly. The traditional role of the family in caring for the aged should be maintained and strengthened through the implementation of appropriate systems, for example, the development of public housing for multi-generational households. More attention should be paid to help the elderly carry out income-generating work. In addition, returning a part of the tax paid by children to their own parents may be effective, as mentioned in the previous section on fertility.

Local-level organizations can engage in training and developing the human resources of the elderly, and provide economic opportunities in line with national policies on the elderly population. National level organizations can play an active role in policy formulation and legislative development for the sake of the elderly.

Third, the importance of non-governmental organizations (NGOs) has been recognized recently owing to their informal structure and their grass-roots character. NGOs in collaboration with the government are indispensable, and the networking of international agencies for the exchange of information is necessary for successful programs. In addition, the support of the mass media is essential to disseminate messages to a wider segment of the population. A positive image of elderly persons could be promoted by publishing articles in newspapers. Radio and television networks can play an effective role through dramas or shows portraying harmony, love, and understanding of the elderly.

Finally, with the rapid increase in the number and the proportion of the

elderly population, a better understanding of the complicated problems of the elderly is urgently needed. Steps should be taken to promote policies and programs based on further research on the consequences of ageing. For this purpose, sample surveys at the national level, regional studies and focus group studies should be carried out periodically.

VII. Sex Structure and Gender Inequality

Sex preference as reflected in the sex ratio at birth was one of the most serious social problems in Korea, especially after the decline of fertility below TFR 3.0. Recently, the problems caused by this trend seemed to have been alleviated to some extent. However, it still remains to be seen whether the ratio will be in the normal range in the near future.

Gender inequality problems are reflected in the ever increasing incidences of divorce in Korea, which will eventually lead to family instability and lower the level of fertility.

The World Plan of Action adopted in 1974 gave a high priority to improving the status of women. The importance of the improvement in the status of women has been reaffirmed by most subsequent international conferences since then. In most societies, although the extent may vary, there are differences in gender roles and expectations. Men and women have different responsibilities, perform different tasks, and have different concerns. They may also react differently to changes in their lives.

Table 11.1 presents three major indices, which were constructed and estimated by the United Nations Development Plan (UNDP). The human development index (HDI) is based on three indicators; longevity measured by life expectancy at birth; educational attainment measured by adult literacy and the gross school enrollment ratio; and the standard of living measured by real GDP per capita. The gender-related development index (GDI) is an adjusted measure of HDI in accordance with the achievements of men and women in society.

The gender empowerment measure (GEM) uses variables constructed

Table 11.1 Demographic and Gender-Related Characteristics of Selected Countries, 1999

Characteristics	Norway	Japan	Hong Kong	Korea	China
Population (in millions)	4.0	126.8	6.7	46.4	1,264.8
Urban population (%)	75.1	78.6	100.0	81.1	31.6
Age Structure					
% Age 0-14	19.8	14.9	16.8	21.2	25.3
% Age 65+	15.5	16.7	10.4	6.8	6.7
TFR (1995-2000)	1.8	1.4	1.2	1.5	1.8
Rank (HDI) ¹⁾	1	9	24	27	87
(GDI) ²⁾	1	11	23	29	76
(GEM) ³⁾	1	31	-	61	-
Life Expectancy at birth					
Female	81.3	84.1	82.2	78.4	72.5
Male	75.4	77.3	76.7	70.9	68.3
% Literate (15+)					
Female	99.+	99+	89.7	96.2	75.5
Male	99.+	99+	96.4	99.1	91.2
Income Ratio ⁴⁾	0.63	0.43	-	0.45	-
% Women in Parliament ⁵⁾	36.4	10.8	-	5.9	21.8
% Female Legislators ⁶⁾	31.0	9.0	22.0	5.0	-
% Female Professional ⁷⁾	58.0	44.0	38.0	31.0	-

- Notes: 1) HDI: Human Development Index.
 2) GDI: Gender Development Index.
 3) GEM: Gender Empowerment Measure.
 4) Ratio of estimated female to male earned income.
 5) Seats in Parliament held by women.
 6) Female legislators, senior officials, and managers.
 7) Female professional and technical workers.

Source: UNDP (2001).

explicitly to measure the relative empowerment of women and men in political and economic spheres of activity. Two variables are chosen to reflect economic participation and decision-making power: women's share of administrative and managerial positions and their share of professional and technical jobs. The third variable, women's share of parliamentary seats, is chosen to reflect political participation and decision-making power.

Despite the efforts the Korean government has made through programs in education, employment and other services, there is still a wide gender gap in access to education and employment, especially politically important positions. This is clearly revealed in Table 11.1.

The achievement made by Korea in gender equality in terms of GEM is very poor compared to the levels it has achieved in other measures.

It must be acknowledged, however, that recent efforts of the Korean government in establishing and implementing policies have been impressive. In addition, many new organizations have been created for improving the condition of women. Two activities are worthy of note. One is the revision of the Family Registration Act proposed by the administration. Another is the bill for an increase of the women's quota in National Assembly membership proposed by the legislative body. The government has provided considerable financial assistance to promote women's participation in national development.

VIII. International Migration and Foreign Labor

1. Streams of Migration

In the 1980s, the newly industrialized economies of East Asia began to attract migrant workers from less prosperous regions in Asia. The sustained growth of the economy in Japan and that of the newly industrialized economies in Hong Kong, China, Korea, and Singapore has widened income disparities among countries in the region and contributed to the generation of jobs that have been attracting migrant workers. In the 1970s, a majority of migrant workers were from Bangladesh, India, Indonesia, Pakistan and the Philippines. Korea was also a major labor exporting country in the 1970s, but it has become a labor importing country. In the 1990s, a majority of migrant workers in Korea were from Bangladesh, India, Pakistan, the Philippines, and Sri Lanka (Gubhaju et al., 2001: 53-54).

Korea has experienced various types of international migration flows. As a result, foreign workers now constitute a significant proportion of the labor force. The success of the integration of foreign workers into the economy depends on a number of factors, including the attitude and actions of the government of the country and the people receiving the migrants as well as the attitudes and the culture of the immigrant group itself (UN, 1973: 258-261).

In the country of destination, a social structure that provides immigrants with opportunities equal to those of natives is an aid to rapid integration. It is well known that the social integration of immigrants in North America in the 19th century was facilitated by more equal opportunities to climb the social ladder. The absence of rigid social stratification and racial and religious prejudices has been cited as a factor in the smooth assimilation of immigrants in Brazil. Immigrant groups have varied in their degree of assimilability. Great differences in language, religion, physical appearance, social customs and cultural traditions are likely to impede integration.

2. Recent Policies for Labor Migration

On July 17, 2002 the government designed a package of measures to utilize foreign human resources and introduced the tentatively named "employment guidelines for foreigners." As of March 2002, the number of migrant workers in Korea totalled 337,000 of whom 78.9 percent were found to have stayed on an expired visa. The increasing number of illegal workers has been regarded as a factor leading to the destabilization of the employment market. Under the new guidelines, ethnic Koreans with foreign nationalities will be permitted to acquire jobs in the service industry, to access social welfare benefits, and to stay for at least two years if they have relatives in Korea.

The guidelines were introduced in order to operate the "industrial trainee" system, introduced in 1993, with more flexibility. In the guidelines the government has decided to increase the trainee quota from 126,750 to 145,500, which will include 130,000 industrial trainees for small or medium size manufacturing companies, 3,000 for fishing, 5,000 for agricultural and livestock, and 7,500 for construction companies.

On March 28, 2003, the government proposed a work permit systems for foreigners to replace the industrial trainee system to effectively cope with the labor shortage problem in small or medium size firms. The system is designed to legally authorize migrant workers to have the same conditions as domestic workers including participation in collective action. Undocumented workers will be granted an extension of their stay until August, 2003, right after when the

National Assembly is expected to pass the bill.

The abuse of illegal migrant workers has seriously tarnished Korea's image in the international community in recent years and there have been some anti-Korean campaigns in their home countries. If introduced as planned, the work permit system will help improve the country's image.

Thus, the bill is designed to give more work opportunities to ethnic Koreans and improve the country's image while relieving labor shortage problems in a few areas of industry. It is thought that the system has more benefits than ill-effects such as rising wages, increasing unemployment rates for locals, and difficult labor management relations. A more careful design for the stable supply of foreign labor force is needed. The government should pay heed to the serious concerns of small or medium size businesses, which might face a sharp increase in expenses, and national labor union resistance in the coming years.

IX. Concluding Remarks

Rapid population growth resulting from high fertility and declining mortality was a major concern in Korea in the 1960s through the 1980s. Recently, low fertility and low mortality, which has resulted in low population growth rates and population ageing, have emerged as challenging new issues in Korea. Greater efforts must be put into the formulation of successful policies and programs to achieve compatible national and individual fertility goals. Also notable is the fact that, despite the decline in fertility to below the replacement level, the Korean population continues to grow due to built-in population momentum.

In the long run Korea will have a smaller but older population as a consequence of low fertility and increased longevity. Evidence from more developed countries suggests that although fertility may sometimes rebound, it is highly unlikely that fertility will rebound and reach the replacement level in the near future. Mortality reduction, especially of a particular age and sex (i.e. males in their forties) will continue to be an important policy goal, which would further facilitate the ageing process.

The effects of population ageing are tremendous and profound. They include

serious burdens for economic and social support and health care systems. The rising number of the elderly combined with the declining number of younger people concurrently suggests that there will be a shortage in the labor force. However, some economists in more developed countries contend that the problem of population ageing is not as serious as it has been indicated by demographers in such economic terms as productivity and savings.

The status of women in Korea in terms of GDI and GEM standards, developed by the UNDP, is very poor compared to other countries at similar levels of economic and social development. Female domestic workers and service workers may be the most vulnerable to exploitation and harassment because they usually work in poor conditions. Achieving gender equality and equity is urgently needed to make the country more developed.

Family disorganization, reflected by the ever-growing rate of divorces, has a great impact on the demographic processes of fertility and mortality. Traditional values are becoming less internalized by the younger generation. Traditional values such as familism and filial duty must be modified as the structure of society transforms. Nonetheless, the basic functions of family and the importance of its functions remain as in the past. The family as the basic unit of society must be protected by the government as well as by individuals. Marital stability would be greatly improved with more emphasis on both the traditional and modern values of the family.

International labor migrations can bring career and financial benefits to the migrant and his or her family. However, it is difficult to regulate many recruitment agencies. Indeed, some agencies defraud potential and actual migrants. In response to the demand from both private and public sectors for inexpensive labor, the government has accepted that they may be beneficial for the economy. As the importance of international labor migration increases, intergovernmental discussion and planning in East Asia must be frequently maintained and expanded.

Korea has become an urban country and this transformation is most conspicuous in its recent history. Managing this process so as to contribute to the alleviation of poverty, gender equality, regionally balanced development and sustainable development in general is the great challenge that planners and

policy makers will face in the coming decades (S.T. Park, 2003).

Finally, much effort should be made to bridge the gap between researchers and policy makers through publication and dissemination of research findings. The improvement of knowledge on the issues could be achieved through the collection and analyses of comparable sets of data and indicators through quantitative survey research including action-oriented research. Case studies and focus-group studies using a qualitative approach would be indispensable to understand the issues that are sensitive to conditions in different social and economic strata.

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APPENDIX

Table 1	Census Populations by Province, 1925-2000	332
Table 2	Census Populations by Sex and Age Group, 1925-2000	334
Table 3	Census Populations by Province and Sex, 2000	343
Table 4	Census Populations by Age and Sex, 2000	344
Table 5	Projected Populations, 2000-2050	347
Table 6	Korean Life Tables, 2001	349

Table 1 Census Populations by Province, 1925-2000

	1925	1930	1935	1940	1944	1949	1955	1960
Whole country	19,522,945	21,058,305	22,899,038	24,326,327	25,917,881	20,188,641	21,526,374	24,989,241
Urban	850,157	1,189,791	1,606,179	2,818,460	3,411,542	3,474,152	5,281,432	6,996,746
Rural	18,672,788	19,868,514	21,292,859	21,507,867	22,488,600	16,714,489	16,220,954	17,992,495
<i>Eup</i>					2,651,198	1,888,467	1,437,088	2,258,713
<i>Myeon</i>					19,837,402	14,826,022	14,783,866	15,733,782
Seoul - teukbyeolsi	(342,626)	(394,240)	(444,098)	(935,464)	(988,537)	1,446,019	1,574,868	2,445,402
Busan - kwangyeoksi	(106,642)	(146,098)	(182,503)	(249,734)	(329,215)	(473,619)	(1,049,363)	(1,163,671)
Daegu - kwangyeoksi	(76,534)	(93,319)	(107,414)	(178,923)	(206,638)	(313,705)	(488,960)	(676,692)
Incheon - kwangyeoksi	(56,295)	(68,137)	(82,997)	(171,165)	(213,833)	(265,767)	(321,072)	(401,473)
Gwangju- kwangyeoksi	(23,734)	(33,023)	(54,607)	(64,520)	(82,431)	(138,883)	(233,358)	(314,420)
Daejeon- kwangyeoksi	(8,614)	(21,696)	(39,061)	(45,541)	(76,675)	(126,704)	(173,143)	(228,987)
Ulsan- kwangyeoksi	(12,016)	(14,903)	(16,111)	(--)	(18,676)	(24,375)	(26,286)	(29,664)
Gyeonggi-do	2,019,108	2,157,413	2,451,691	2,864,389	3,092,234	2,740,594	2,363,660	2,748,765
Gangwon-do	1,332,352	1,487,715	1,605,274	1,764,649	1,858,230	1,138,785	1,496,301	1,636,767
Chungcheongbuk-do	847,476	900,226	959,490	944,870	980,488	1,146,509	1,192,071	1,369,780
Chungcheongnam-do	1,282,038	1,382,888	1,526,825	1,575,945	1,675,479	2,028,188	2,222,725	2,528,133
Jeollabuk-do	1,369,010	1,503,695	1,607,236	1,598,614	1,674,692	2,050,485	2,126,255	2,395,224
Jeollanam-do	2,158,513	2,332,256	2,508,346	2,638,969	2,749,969	3,042,442	3,127,559	3,553,041
Gyeongsangbuk-do	2,332,572	2,416,762	2,563,251	2,472,211	2,605,461	3,206,201	3,363,798	3,848,424
Gyeongsangnam-do	2,021,887	2,135,716	2,248,228	2,241,902	2,417,384	3,134,829	3,770,209	4,182,042
Jeju-do	(205,194)	(208,331)	(207,220)	(213,947)	(221,366)	254,589	288,928	281,663
Whanghae -do	1,461,879	1,523,523	1,674,214	1,812,933	2,014,931			
Pyoengbuk-do	1,417,091	1,562,791	1,710,352	1,768,265	1,882,799			
Pyoengnam-do	1,241,777	1,331,705	1,469,631	1,662,316	1,826,441			
Hamgyeongbuk-do	626,246	745,124	852,824	1,102,272	1,124,421			
Hamgyeongnam-do	1,412,996	1,578,491	1,721,676	1,878,992	2,015,352			

Table 1 Census Populations by Province, 1925-2000 (continued)

	1966	1970	1975	1980	1985	1990	1995	2000
Whole country	29,159,640	31,435,252	34,706,620	37,436,315	40,448,486	43,410,899	44,608,726	46,136,101
Urban	9,780,443	12,929,002	16,792,771	21,434,116	26,442,980	32,308,970	35,036,473	36,755,144
Rural	19,379,197	18,506,250	17,913,849	16,002,199	14,005,506	11,101,929	9,572,253	9,380,957
<i>Eup</i>	2,646,151	2,850,355	3,723,354	4,539,666	4,817,236	3,603,647	3,484,148	3,755,782
<i>Myeon</i>	16,731,345	15,653,957	14,187,007	11,462,533	9,188,270	7,498,282	6,088,105	5,625,175
Seoul - teukbyeolsi	3,793,280	5,525,262	6,889,502	8,364,379	9,639,110	10,612,577	10,231,217	9,895,217
Busan - kwangyeoksi	1,426,019	1,876,391	2,453,173	3,159,766	3,514,798	3,798,113	3,814,325	3,662,884
Daegu - kwangyeoksi	(845,189)	(1,080,819)	(1,310,768)	(1,604,934)	2,029,853	2,229,040	2,449,420	2,480,578
Incheon - kwangyeoksi	(525,827)	(643,384)	(800,007)	(1,083,906)	1,386,911	1,817,919	2,308,188	2,475,139
Gwangju - kwangyeoksi	(403,495)	(501,967)	(607,011)	(727,600)	(905,896)	1,139,003	1,257,636	1,352,797
Daejeon - kwangyeoksi	(314,991)	(413,823)	(506,708)	(651,792)	(866,148)	1,049,578	1,272,121	1,368,207
Ulsan - kwangyeoksi	(112,848)	(159,433)	(252,570)	(418,326)	(551,014)	(682,411)	(967,429)	1,014,428
Gyeonggi-do	3,102,325	3,353,272	4,039,132	4,933,862	4,794,135	6,155,632	7,649,741	8,984,134
Gangwon-do	1,831,185	1,865,426	1,861,560	1,790,954	1,724,809	1,580,430	1,466,238	1,487,011
Chungcheongbuk-do	1,548,821	1,480,338	1,522,203	1,424,083	1,391,004	1,389,686	1,396,728	1,466,567
Chungcheongnam-do	2,902,941	2,858,202	2,948,553	2,956,214	3,001,179	2,013,926	1,766,854	1,845,321
Jeollabuk-do	2,521,207	2,431,892	2,456,403	2,287,689	2,202,078	2,069,960	1,902,044	1,890,669
Jeollanam-do	4,048,769	4,004,832	3,984,123	3,779,736	3,748,428	2,507,439	2,066,842	1,996,456
Gyeongsangbuk-do	4,472,895	4,555,866	4,858,551	4,954,559	3,010,945	2,860,595	2,676,312	2,724,931
Gyeongsangnam-do	3,175,146	3,118,634	3,280,052	3,322,132	3,516,660	3,672,396	3,845,622	2,978,502
Jeju-do	337,052	365,137	411,732	462,941	488,576	514,605	505,438	513,260

- Notes : 1) In 1925, Seoul, Busan, Daegu, and Incheon were classified as urban, while Gwangju and Daejeon classified as rural.
 2) Between 1930 and 1940, Seoul, Busan, Daegu, Incheon, Gwangju, and Daejeon were classified as urban.
 3) Figures in parentheses indicate that Seoul was included in Gyeonggi-do; Busan in Gyeongsangnam-do; Daegu in Gyeongsangbuk-do; Incheon in Gyeonggi-do; Gwangju in Jeollanam-do; Daejeon in Chungcheongnam-do; and Ulsan in Gyeongsangnam-do.
 4) All figures, except in 1955, include people in special enumeration districts, institutional households, and foreigners. Figures in 1955 exclude foreigners.
 5) For 1970 and 1975, rural population included those whose residency status was not identified to be *Eup* or *Myeon*, but lived in rural areas.

Table 2 Census Populations by Sex and Age Group, 1925-2000**Both Sexes**

	1925	1930	1935	1940	1944
Total	19,020,030	20,438,108	22,208,102	23,547,465	25,120,174
0 - 4	3,069,586	3,281,683	3,671,581	3,897,658	4,278,618
5 - 9	2,324,093	2,657,660	2,886,471	3,237,238	3,562,531
10 - 14	2,157,223	2,220,479	2,531,631	2,721,264	3,008,747
15 - 19	1,877,066	2,051,939	2,101,905	2,263,663	2,350,425
20 - 24	1,470,283	1,711,543	1,897,029	1,835,093	1,869,326
25 - 29	1,472,542	1,371,976	1,613,770	1,704,599	1,671,576
30 - 34	1,259,397	1,384,062	1,285,942	1,456,721	1,567,460
35 - 39	1,139,848	1,197,402	1,308,753	1,205,407	1,356,763
40 - 44	949,548	1,055,400	1,112,764	1,201,302	1,138,860
45 - 49	817,690	889,145	991,393	1,016,874	1,086,046
50 - 54	673,697	737,442	797,501	885,031	902,634
55 - 59	588,370	607,955	666,028	713,241	743,975
60 - 64	480,125	483,750	503,268	552,549	607,464
65 - 69	389,454	367,736	381,639	391,881	426,058
70 - 74	207,604	252,258	247,966	256,193	302,049
75 - 79	104,274	116,623	145,798	133,218	154,221
80 - 84	39,230	51,055	64,663	75,533	61,451
85 and over					31,970
Unknown					

Note: All figures exclude foreigners (except in 1960, 1966, and 1970).

Table 2 Census Populations by Sex and Age Group, 1925-2000 (continued)**Both Sexes**

	1949	1955	1960	1966	1970
Total	20,166,756	21,502,386	24,989,241	29,159,640	31,435,252
0 - 4		3,376,648	3,549,564	4,480,921	4,316,143
5 - 9	5,877,777 ¹⁾	2,867,388	3,781,551	4,612,872	4,531,942
10 - 14	2,514,640	2,621,021	2,822,255	3,590,027	4,393,348
15 - 19	2,022,651	2,394,911	2,383,154	2,708,146	3,088,134
20 - 24	1,717,726	1,754,400	2,279,449	2,298,683	2,523,170
25 - 29	1,495,317	1,439,127	1,913,186	2,244,334	2,204,293
30 - 34	1,265,721	1,389,448	1,556,334	1,959,774	2,193,279
35 - 39	1,142,184	1,168,579	1,416,737	1,552,795	1,854,200
40 - 44	947,333	1,054,062	1,187,470	1,346,826	1,461,903
45 - 49	774,149	947,881	1,033,761	1,116,535	1,284,628
50 - 54	681,634	679,901	884,576	947,632	1,024,535
55 - 59	616,519	614,994	664,538	788,723	855,041
60 - 64	1,075,726 ²⁾	480,506	566,571	550,953	665,258
65 - 69		359,204	404,732	437,384	434,715
70 - 74		191,742	297,002	267,288	315,444
75 - 79		107,355	140,663	171,669	175,416
80 - 84		39,995	68,440	59,630	83,836
85 and over		15,224	24,169	25,348	29,967
Unknown	35,379		15,089	100	

Note : 1) Less than 10 years old.

2) 60 years or older.

Table 2 Census Populations by Sex and Age Group, 1925-2000 (continued)**Both Sexes**

	1975	1980	1985	1990	1995	2000
Total	34,678,972	37,406,815	40,419,652	43,390,374	44,553,710	45,985,289
0 - 4	4,227,360	3,794,692	3,702,555	3,279,790	3,427,409	3,130,258
5 - 9	4,453,698	4,420,946	3,916,350	3,862,508	3,096,115	3,444,056
10 - 14	4,527,330	4,440,137	4,475,985	3,991,917	3,711,980	3,064,442
15 - 19	4,146,912	4,239,729	4,316,264	4,448,996	3,863,491	3,691,584
20 - 24	3,123,126	4,053,638	4,245,090	4,396,309	4,304,378	3,848,186
25 - 29	2,507,450	3,082,172	4,070,408	4,333,500	4,137,913	4,096,978
30 - 34	2,224,238	2,519,241	3,115,238	4,207,714	4,230,239	4,093,228
35 - 39	2,189,144	2,223,341	2,581,181	3,201,210	4,133,864	4,186,953
40 - 44	1,800,153	2,131,651	2,187,508	2,539,269	3,071,101	3,996,336
45 - 49	1,398,820	1,781,813	2,089,212	2,176,890	2,464,295	2,952,023
50 - 54	1,197,379	1,325,925	1,695,259	2,010,018	2,063,768	2,350,250
55 - 59	939,205	1,125,353	1,267,757	1,622,853	1,913,461	1,968,472
60 - 64	737,552	822,057	1,006,876	1,157,059	1,495,082	1,788,849
65 - 69	542,827	620,283	722,817	900,314	1,043,979	1,376,122
70 - 74	325,213	425,096	501,254	595,116	762,544	918,121
75 - 79	204,290	229,286	312,090	377,171	455,673	600,598
80 - 84	90,917	118,207	137,660	195,312	246,191	303,759
85 and over	43,352	53,242	75,728	94,326	131,818	173,206
Unknown	6	6	420	102	409	1,868

Table 2 Census Populations by Sex and Age Group, 1925-2000 (continued)

Male

	1925	1930	1935	1940	1944
Total	9,726,150	10,398,889	11,271,005	11,839,295	12,521,173
0 - 4	1,560,053	1,661,240	1,864,127	1,974,157	2,159,146
5 - 9	1,200,503	1,361,625	1,478,064	1,655,425	1,815,269
10 - 14	1,117,122	1,153,608	1,301,810	1,398,317	1,545,793
15 - 19	964,185	1,058,199	1,080,314	1,142,250	1,174,771
20 - 24	749,424	860,573	959,748	908,119	889,337
25 - 29	754,495	692,154	811,545	845,382	812,916
30 - 34	654,292	706,726	652,568	725,152	768,255
35 - 39	594,449	618,681	669,307	606,498	675,127
40 - 44	497,970	548,241	572,611	608,860	575,438
45 - 49	425,428	460,921	508,714	515,050	554,141
50 - 54	347,447	379,603	409,120	445,617	451,506
55 - 59	291,999	305,594	334,045	355,954	366,961
60 - 64	231,498	235,138	248,205	270,603	293,122
65 - 69	181,586	171,553	179,466	186,391	200,965
70 - 74	94,614	114,519	113,398	115,515	136,940
75 - 79	45,498	50,191	62,583	56,882	65,901
80 - 84	15,587	20,323	25,380	29,123	24,464
85 and over					11,121
Unknown					

Table 2 Census Populations by Sex and Age Group, 1925-2000 (continued)

Male					
	1949	1955	1960	1966	1970
Total	10,188,238	10,752,973	12,543,968	14,684,147	15,779,615
0 - 4		1,742,778	1,820,312	2,318,664	2,228,736
5 - 9	2,991,580 ¹⁾	1,495,871	1,958,379	2,391,295	2,349,086
10 - 14	1,282,027	1,371,568	1,480,279	1,857,472	2,274,301
15 - 19	1,029,625	1,256,904	1,248,791	1,399,246	1,573,179
20 - 24	863,715	808,143	1,175,602	1,203,321	1,298,687
25 - 29	759,752	635,243	916,751	1,116,120	1,096,819
30 - 34	652,043	679,017	727,096	975,994	1,108,853
35 - 39	589,925	585,542	687,559	734,345	915,069
40 - 44	488,270	530,158	598,867	659,331	691,062
45 - 49	393,673	496,405	518,017	559,889	628,934
50 - 54	340,893	337,483	444,283	465,588	506,554
55 - 59	294,192	295,560	318,745	376,426	407,895
60 - 64	485,605 ²⁾	217,405	257,447	248,035	302,362
65 - 69		156,091	174,206	182,750	181,431
70 - 74		80,971	120,719	104,987	120,835
75 - 79		43,441	55,635	62,232	60,931
80 - 84		15,312	25,744	20,423	26,355
85 and over		5,081	8,186	7,932	8,526
Unknown	16,938		7,350	97	

Note : 1) Less than 10 years old.

2) 60 years or older.

Table 2 Census Populations by Sex and Age Group, 1925-2000 (continued)**Male**

	1975	1980	1985	1990	1995	2000
Total	17,445,246	18,749,306	20,227,564	21,770,919	22,357,352	23,068,181
0 - 4	2,189,456	1,963,963	1,922,758	1,726,863	1,821,350	1,641,166
5 - 9	2,302,542	2,282,813	2,025,353	1,999,001	1,626,922	1,831,446
10 - 14	2,348,676	2,293,386	2,310,570	2,054,494	1,913,801	1,615,013
15 - 19	2,124,156	2,186,973	2,227,322	2,267,129	1,987,044	1,913,885
20 - 24	1,611,767	2,067,729	2,185,720	2,294,290	2,237,940	2,028,206
25 - 29	1,271,743	1,540,965	2,027,185	2,160,912	2,078,417	2,057,321
30 - 34	1,131,486	1,293,533	1,589,610	2,142,825	2,146,351	2,068,202
35 - 39	1,111,449	1,127,158	1,324,369	1,648,205	2,103,016	2,117,492
40 - 44	885,250	1,080,457	1,108,685	1,315,182	1,579,850	2,029,413
45 - 49	649,961	868,659	1,042,989	1,100,966	1,261,509	1,496,104
50 - 54	576,664	609,166	809,619	994,511	1,028,887	1,185,239
55 - 59	449,224	521,797	560,580	760,993	923,625	959,680
60 - 64	334,479	373,222	440,387	494,845	673,719	836,465
65 - 69	229,780	260,597	306,710	375,752	420,873	593,974
70 - 74	123,219	161,867	190,553	233,308	293,696	348,226
75 - 79	68,241	74,175	103,513	127,905	160,498	211,347
80 - 84	26,304	31,546	36,163	54,861	71,267	94,135
85 and over	10,843	11,296	15,140	18,830	28,370	39,715
Unknown	6	4	338	47	217	1,152

Table 2 Census Populations by Sex and Age Group, 1925-2000 (continued)

Female

	1925	1930	1935	1940	1944
Total	9,293,880	10,039,219	10,937,097	11,708,170	12,599,001
0 - 4	1,509,533	1,620,443	1,807,454	1,923,501	2,119,472
5 - 9	1,123,590	1,296,035	1,408,407	1,581,813	1,747,262
10 - 14	1,040,101	1,066,871	1,229,821	1,322,947	1,462,954
15 - 19	912,881	993,740	1,021,591	1,121,413	1,175,654
20 - 24	720,859	850,970	937,281	926,974	979,989
25 - 29	718,047	679,822	802,225	859,217	858,660
30 - 34	605,105	677,336	633,374	731,569	799,205
35 - 39	545,399	578,721	639,446	598,909	681,636
40 - 44	451,578	507,159	540,153	592,442	563,422
45 - 49	392,262	428,224	482,679	501,824	531,905
50 - 54	326,250	357,839	388,381	439,414	451,128
55 - 59	296,371	302,361	331,983	357,287	377,014
60 - 64	248,627	248,612	255,063	281,946	314,342
65 - 69	207,868	196,183	202,173	205,490	225,093
70 - 74	112,990	137,739	134,568	140,678	165,109
75 - 79	58,776	66,432	83,215	76,336	88,320
80 - 84	23,643	30,732	39,283	46,410	36,987
85 and over					20,849
Unknown					

Table 2 Census Populations by Sex and Age Group, 1925-2000 (continued)

Female

	1949	1955	1960	1966	1970
Total	9,978,518	10,749,413	12,445,273	14,475,493	15,655,637
0 - 4		1,633,870	1,729,252	2,162,257	2,087,407
5 - 9	2,886,197 ¹⁾	1,371,517	1,823,172	2,221,577	2,182,856
10 - 14	1,232,613	1,249,453	1,341,976	1,732,555	2,119,047
15 - 19	993,026	1,138,007	1,134,363	1,308,900	1,514,955
20 - 24	854,011	946,257	1,103,847	1,095,362	1,224,483
25 - 29	735,565	803,884	996,435	1,128,214	1,107,474
30 - 34	613,678	710,431	829,238	983,780	1,084,426
35 - 39	552,259	583,037	729,178	818,450	939,131
40 - 44	459,063	523,904	588,603	687,495	770,841
45 - 49	380,476	451,476	515,744	556,646	655,694
50 - 54	340,741	342,418	440,293	482,044	517,981
55 - 59	322,327	319,434	345,793	412,297	447,146
60 - 64	590,121 ²⁾	263,101	309,124	302,918	362,896
65 - 69		203,113	230,526	254,634	253,284
70 - 74		110,771	176,283	162,301	194,609
75 - 79		63,914	85,028	109,437	114,485
80 - 84		24,683	42,696	39,207	57,481
85 and over		10,143	15,983	17,416	21,441
Unknown	18,441		7,739	3	

Note : 1) Less than 10 years old.

2) 60 years or older.

Table 2 Census Populations by Sex and Age Group, 1925-2000 (continued)

Female

	1975	1980	1985	1990	1995	2000
Total	17,233,726	18,657,509	20,192,088	21,619,455	22,196,358	22,917,108
0 - 4	2,037,904	1,830,729	1,779,797	1,552,927	1,606,059	1,489,092
5 - 9	2,151,156	2,138,133	1,890,997	1,863,507	1,469,193	1,612,610
10 - 14	2,178,654	2,146,751	2,165,415	1,937,423	1,798,179	1,449,429
15 - 19	2,022,756	2,052,756	2,088,942	2,181,867	1,876,447	1,777,699
20 - 24	1,511,359	1,985,909	2,059,370	2,102,019	2,066,438	1,819,980
25 - 29	1,235,707	1,541,207	2,043,223	2,172,588	2,059,496	2,039,657
30 - 34	1,092,752	1,225,708	1,525,628	2,064,889	2,083,888	2,025,026
35 - 39	1,077,695	1,096,183	1,256,812	1,553,005	2,030,848	2,069,461
40 - 44	914,903	1,051,194	1,078,823	1,224,087	1,491,251	1,966,923
45 - 49	748,859	913,154	1,046,223	1,075,924	1,202,786	1,455,919
50 - 54	620,715	716,759	885,640	1,015,507	1,034,881	1,165,011
55 - 59	489,981	603,556	707,177	861,860	989,836	1,008,792
60 - 64	403,073	448,835	566,489	662,214	821,363	952,384
65 - 69	313,047	359,686	416,107	524,562	623,106	782,148
70 - 74	201,994	263,229	310,701	361,808	468,848	569,895
75 - 79	136,049	155,111	208,577	249,266	295,175	389,251
80 - 84	64,613	86,661	101,497	140,451	174,924	209,624
85 and over	32,509	41,946	60,588	75,496	103,448	133,491
Unknown		2	82	55	192	716

Table 3 Census Populations by Province and Sex, 2000

	Total population			Koreans			Foreigners		
	Both	Male	Female	Both	Male	Female	Both	Male	Female
Whole country	46,136,101	23,158,582	22,977,519	45,985,289	23,068,181	22,917,108	150,812	90,401	60,411
Urban (<i>Dong</i>)	36,755,144	18,484,139	18,271,005	36,642,448	18,417,822	18,224,626	112,696	66,317	46,379
Rural (<i>Eup</i>)	3,755,782	1,885,263	1,870,519	3,742,053	1,876,875	1,865,178	13,729	8,388	5,341
(<i>Myeon</i>)	5,625,175	2,789,180	2,835,995	5,600,788	2,773,484	2,827,304	24,387	15,696	8,691
Seoul-teukbyeolsi	9,895,217	4,966,993	4,928,224	9,853,972	4,943,550	4,910,422	41,245	23,443	17,802
Busan-kwangyeoksi	3,662,884	1,827,062	1,835,822	3,655,437	1,822,539	1,832,898	7,447	4,523	2,924
Daegu-kwangyeoksi	2,480,578	1,247,562	1,233,016	2,473,990	1,243,681	1,230,309	6,588	3,881	2,707
Incheon-kwangyeoksi	2,475,139	1,250,383	1,224,756	2,466,338	1,244,327	1,222,011	8,801	6,056	2,745
Gwangju-kwangyeoksi	1,352,797	674,228	678,569	1,350,948	673,166	677,782	1,849	1,062	787
Daejeon-kwangyeoksi	1,368,207	690,600	677,607	1,365,961	689,340	676,621	2,246	1,260	986
Ulsan-kwangyeoksi	1,014,428	522,062	492,366	1,012,110	520,656	491,454	2,318	1,406	912
Gyeonggi-do	8,984,134	4,538,265	4,445,869	8,937,752	4,507,362	4,430,390	46,382	30,903	15,479
Gangwon-do	1,487,011	747,351	739,660	1,484,536	746,162	738,374	2,475	1,189	1,286
Chungcheongbuk-do	1,466,567	736,271	730,296	1,462,621	734,196	728,425	3,946	2,075	1,871
Chungcheongnam-do	1,845,321	927,824	917,497	1,840,410	924,986	915,424	4,911	2,838	2,073
Jeollabuk-do	1,890,669	936,683	953,986	1,887,239	935,330	951,909	3,430	1,353	2,077
Jeollanam-do	1,996,456	988,249	1,008,207	1,994,287	987,463	1,006,824	2,169	786	1,383
Gyeongsangbuk-do	2,724,931	1,361,753	1,363,178	2,716,218	1,357,358	1,358,860	8,713	4,395	4,318
Gyeongsangnam-do	2,978,502	1,488,847	1,489,655	2,970,929	1,484,009	1,486,920	7,573	4,838	2,735
Jeju-do	513,260	254,449	258,811	512,541	254,056	258,485	719	393	326

Table 4 Census Populations by Age and Sex, 2000

	Both sexes	Male	Female	Sex ratio
Total	45,985,289	23,068,181	22,917,108	100.66
0 - 4	3,130,258	1,641,166	1,489,092	110.21
0	599,073	315,765	283,308	111.46
1	589,431	307,738	281,693	109.25
2	627,019	327,973	299,046	109.67
3	647,695	337,686	310,009	108.93
4	667,040	352,004	315,036	111.73
5 - 9	3,444,056	1,831,446	1,612,610	113.57
5	686,220	364,263	321,957	113.14
6	690,082	369,301	320,781	115.13
7	697,324	371,804	325,520	114.22
8	704,815	373,690	331,125	112.85
9	665,615	352,388	313,227	112.50
10 - 14	3,064,442	1,615,013	1,449,429	111.42
10	635,058	338,272	296,786	113.98
11	609,729	322,993	286,736	112.64
12	602,762	317,863	284,899	111.57
13	601,647	312,843	288,804	108.32
14	615,246	323,042	292,204	110.55
15 - 19	3,691,584	1,913,885	1,777,699	107.66
15	626,549	327,213	299,336	109.31
16	678,573	354,377	324,196	109.31
17	742,472	384,101	358,371	107.18
18	799,214	411,643	387,571	106.21
19	844,776	436,551	408,225	106.94
20 - 24	3,848,186	2,028,206	1,819,980	111.44
20	864,780	464,067	400,713	115.81
21	819,903	444,949	374,954	118.67
22	731,861	383,972	347,889	110.37
23	722,940	372,886	350,054	106.52
24	708,702	362,332	346,370	104.61
25 - 29	4,096,978	2,057,321	2,039,657	100.87
25	750,203	377,720	372,483	101.41
26	795,122	400,949	394,173	101.72
27	815,384	407,220	408,164	99.77
28	860,807	431,406	429,401	100.47
29	875,462	440,026	435,436	101.05
30 - 34	4,093,228	2,068,202	2,025,026	102.13
30	857,084	432,165	424,919	101.71
31	852,158	429,853	422,305	101.79
32	813,151	410,538	402,613	101.97
33	779,428	393,061	386,367	101.73
34	791,407	402,585	388,822	103.54

Table 4 Census Populations by Age and Sex, 2000 (continued)

	Both sexes	Male	Female	Sex ratio
35 - 39	4,186,953	2,117,492	2,069,461	102.32
35	798,444	402,548	395,896	101.68
36	797,307	404,077	393,230	102.76
37	868,293	438,401	429,892	101.98
38	857,272	435,722	421,550	103.36
39	865,637	436,744	428,893	101.83
40 - 44	3,996,336	2,029,413	1,966,923	103.18
40	871,573	440,465	431,108	102.17
41	861,060	435,642	425,418	102.40
42	810,303	412,592	397,711	103.74
43	746,868	381,535	365,333	104.43
44	706,532	359,179	347,353	103.40
45 - 49	2,952,023	1,496,104	1,455,919	102.76
45	738,313	372,033	366,280	101.57
46	627,309	321,839	305,470	105.36
47	528,790	266,901	261,889	101.91
48	599,908	306,597	293,311	104.53
49	457,703	228,734	228,969	99.90
50 - 54	2,350,250	1,185,239	1,165,011	101.74
50	481,419	244,239	237,180	102.98
51	483,658	244,944	238,714	102.61
52	484,445	244,936	239,509	102.27
53	483,767	241,980	241,787	100.08
54	416,961	209,140	207,821	100.63
55 - 59	1,968,472	959,680	1,008,792	95.13
55	372,407	185,087	187,320	98.81
56	377,444	185,458	191,986	96.60
57	381,625	185,786	195,839	94.87
58	429,084	208,888	220,196	94.86
59	407,912	194,461	213,451	91.10
60 - 64	1,788,849	836,465	952,384	87.83
60	367,399	174,290	193,109	90.25
61	378,797	177,667	201,130	88.33
62	360,387	170,265	190,122	89.56
63	348,665	161,278	187,387	86.07
64	333,601	152,965	180,636	84.68
65 - 69	1,376,122	593,974	782,148	75.94
65	320,763	143,972	176,791	81.44
66	300,263	133,061	167,202	79.58
67	260,273	113,914	146,359	77.83
68	265,415	111,525	153,890	72.47
69	229,408	91,502	137,906	66.35

Table 4 Census Populations by Age and Sex, 2000 (continued)

	Both sexes	Male	Female	Sex ratio
70 - 74	918,121	348,226	569,895	61.10
70	206,231	81,147	125,084	64.87
71	205,285	78,771	126,514	62.26
72	182,739	68,796	113,943	60.38
73	167,142	62,106	105,036	59.13
74	156,724	57,406	99,318	57.80
75 - 79	600,598	211,347	389,251	54.30
75	138,444	49,594	88,850	55.82
76	130,915	47,112	83,803	56.22
77	125,114	44,440	80,674	55.09
78	106,164	36,642	69,522	52.71
79	99,961	33,559	66,402	50.54
80 - 84	303,759	94,135	209,624	44.91
80	80,280	26,608	53,672	49.58
81	62,847	20,354	42,493	47.90
82	58,640	17,906	40,734	43.96
83	53,788	15,738	38,050	41.36
84	48,204	13,529	34,675	39.02
85 and over	173,206	39,715	133,491	29.75
Unknown	1,868	1,152	716	160.89
Under 15	9,638,756	5,087,625	4,551,131	111.79
15 - 64	32,972,859	16,692,007	16,280,852	102.53
65 and over	3,371,806	1,287,397	2,084,409	61.76

Table 5 Projected Populations, 2000-2050

	Total	Male	Female	0-14	15-64	65+
2000	47,008,111	23,666,769	23,341,342	9,911,229	33,701,986	3,394,896
2001	47,342,828	23,835,309	23,507,519	9,860,001	33,903,614	3,579,213
2002	47,639,618	23,983,838	23,655,780	9,792,573	34,074,591	3,772,454
2003	47,925,318	24,126,185	23,799,133	9,718,733	34,237,549	3,969,036
2004	48,199,227	24,260,585	23,938,642	9,632,613	34,395,598	4,171,016
2005	48,460,590	24,387,814	24,072,776	9,517,521	34,577,106	4,365,963
2006	48,710,241	24,508,669	24,201,572	9,362,001	34,774,275	4,573,965
2007	48,948,463	24,623,776	24,324,687	9,171,846	34,984,188	4,792,429
2008	49,175,329	24,732,657	24,442,672	8,965,362	35,226,217	4,983,750
2009	49,391,042	24,835,655	24,555,387	8,757,151	35,485,667	5,148,224
2010	49,594,482	24,932,771	24,661,711	8,551,714	35,740,673	5,302,095
2011	49,782,861	25,022,377	24,760,484	8,355,476	35,950,603	5,476,782
2012	49,954,138	25,102,648	24,851,490	8,171,560	36,091,847	5,690,731
2013	50,107,196	25,173,186	24,934,010	8,006,418	36,183,163	5,917,615
2014	50,240,035	25,233,381	25,006,654	7,846,986	36,253,148	6,139,901
2015	50,352,318	25,282,576	25,069,742	7,682,494	36,324,424	6,345,400
2016	50,444,562	25,320,056	25,124,506	7,526,064	36,381,156	6,537,342
2017	50,518,349	25,347,397	25,170,952	7,395,633	36,336,556	6,786,160
2018	50,575,573	25,365,197	25,210,376	7,268,342	36,273,365	7,033,866
2019	50,618,727	25,374,738	25,243,989	7,147,303	36,157,808	7,313,616
2020	50,650,260	25,377,186	25,273,074	7,034,423	35,948,429	7,667,408
2021	50,671,508	25,373,146	25,298,362	6,929,751	35,707,219	8,034,538
2022	50,682,718	25,363,335	25,319,383	6,832,336	35,447,259	8,403,123
2023	50,683,490	25,348,160	25,335,330	6,740,530	35,135,293	8,807,667
2024	50,672,580	25,326,986	25,345,594	6,652,654	34,768,782	9,251,144
2025	50,648,525	25,299,049	25,349,476	6,568,078	34,391,125	9,689,322
2026	50,609,812	25,263,546	25,346,266	6,487,361	34,009,733	10,112,718
2027	50,555,926	25,220,701	25,335,225	6,411,188	33,623,463	10,521,275
2028	50,486,512	25,170,669	25,315,843	6,340,794	33,228,693	10,917,025
2029	50,400,297	25,112,799	25,287,498	6,276,482	32,849,819	11,273,996
2030	50,296,133	25,046,468	25,249,665	6,217,381	32,475,033	11,603,719
2031	50,173,251	24,971,075	25,202,176	6,162,146	32,082,400	11,928,705
2032	50,030,653	24,885,574	25,145,079	6,108,151	31,687,136	12,235,366
2033	49,867,811	24,789,218	25,078,593	6,052,946	31,271,398	12,543,467
2034	49,685,300	24,682,305	25,002,995	5,994,394	30,825,259	12,865,647
2035	49,483,999	24,565,370	24,918,629	5,930,727	30,362,113	13,191,159
2036	49,264,090	24,438,694	24,825,396	5,860,714	29,887,376	13,516,000
2037	49,025,597	24,302,358	24,723,239	5,783,981	29,413,329	13,828,287
2038	48,769,279	24,156,511	24,612,768	5,701,134	28,966,199	14,101,946
2039	48,495,794	24,001,408	24,494,386	5,613,422	28,538,700	14,343,672
2040	48,204,474	23,836,935	24,367,539	5,522,324	28,148,960	14,533,190

Table 5 Projected Population, 2000-2050 (continued)

	Total	Male	Female	0-14	15-64	65+
2041	47,894,421	23,663,090	24,231,331	5,429,245	27,801,721	14,663,455
2042	47,565,627	23,480,363	24,085,264	5,335,433	27,473,265	14,756,929
2043	47,218,421	23,289,101	23,929,320	5,241,931	27,134,214	14,842,276
2044	46,853,160	23,089,491	23,763,669	5,149,615	26,758,263	14,945,282
2045	46,470,670	22,881,983	23,588,687	5,059,173	26,342,170	15,069,327
2046	46,072,143	22,667,286	23,404,857	4,971,127	25,891,902	15,209,114
2047	45,658,087	22,445,997	23,212,090	4,885,899	25,458,485	15,313,703
2048	45,229,843	22,218,968	23,010,875	4,803,801	25,064,746	15,361,296
2049	44,789,042	21,987,179	22,801,863	4,725,004	24,718,452	15,345,586
2050	44,336,997	21,751,590	22,585,407	4,649,549	24,416,858	15,270,590

Table 6 Korean Life Tables, 2001

Both Sexes

Age	Probability of dying	Number surviving	Number dying	Number of person-years lived		Average remaining lifetime
	q_x	l_x	nd_x	nL_x	T_x	e_x
0	0.00572	100,000	572	99,464	7,652,764	76.53
1	0.00058	99,428	57	99,399	7,553,301	75.97
2	0.00047	99,370	47	99,347	7,453,901	75.01
3	0.00039	99,324	38	99,305	7,354,554	74.05
4	0.00033	99,286	33	99,269	7,255,249	73.07
5	0.00029	99,253	29	99,238	7,155,980	72.10
6	0.00027	99,223	26	99,210	7,056,742	71.12
7	0.00024	99,197	24	99,185	6,957,532	70.14
8	0.00021	99,173	21	99,162	6,858,347	69.16
9	0.00019	99,152	19	99,142	6,759,185	68.17
10	0.00018	99,133	17	99,124	6,660,042	67.18
11	0.00017	99,116	17	99,107	6,560,918	66.19
12	0.00018	99,098	18	99,090	6,461,811	65.21
13	0.00020	99,081	20	99,071	6,362,721	64.22
14	0.00024	99,061	23	99,049	6,263,650	63.23
15	0.00030	99,038	30	99,023	6,164,601	62.25
16	0.00037	99,008	36	98,989	6,065,578	61.26
17	0.00042	98,971	41	98,951	5,966,589	60.29
18	0.00046	98,930	45	98,907	5,867,638	59.31
19	0.00049	98,885	49	98,860	5,768,731	58.34
20	0.00052	98,836	51	98,810	5,669,871	57.37
21	0.00054	98,784	53	98,758	5,571,061	56.40
22	0.00056	98,731	55	98,704	5,472,303	55.43
23	0.00060	98,676	59	98,646	5,373,599	54.46
24	0.00062	98,617	61	98,586	5,274,953	53.49
25	0.00062	98,555	61	98,525	5,176,366	52.52
26	0.00065	98,494	64	98,462	5,077,842	51.55
27	0.00066	98,430	65	98,397	4,979,380	50.59
28	0.00070	98,365	69	98,330	4,880,982	49.62
29	0.00073	98,296	72	98,259	4,782,652	48.66
30	0.00077	98,223	76	98,185	4,684,393	47.69
31	0.00082	98,147	81	98,107	4,586,207	46.73
32	0.00089	98,067	87	98,023	4,488,100	45.77
33	0.00098	97,980	96	97,932	4,390,077	44.81
34	0.00108	97,884	106	97,831	4,292,146	43.85
35	0.00117	97,778	114	97,721	4,194,315	42.90

Table 6 Korean Life Tables, 2001 (continued)

Both Sexes

Age	Probability of dying	Number surviving	Number dying	Number of person-years lived		Average remaining lifetime
	q_x	l_x	nd_x	nL_x	T_x	e_x
36	0.00127	97,664	124	97,602	4,096,594	41.95
37	0.00140	97,540	137	97,471	3,998,992	41.00
38	0.00157	97,403	153	97,326	3,901,520	40.06
39	0.00172	97,250	168	97,166	3,804,194	39.12
40	0.00187	97,082	182	96,991	3,707,028	38.18
41	0.00207	96,900	201	96,800	3,610,037	37.26
42	0.00227	96,700	220	96,590	3,513,237	36.33
43	0.00249	96,480	240	96,360	3,416,647	35.41
44	0.00271	96,240	261	96,110	3,320,287	34.50
45	0.00293	95,979	281	95,838	3,224,177	33.59
46	0.00325	95,698	311	95,542	3,128,339	32.69
47	0.00349	95,387	333	95,220	3,032,796	31.79
48	0.00383	95,054	364	94,872	2,937,576	30.90
49	0.00418	94,690	396	94,492	2,842,704	30.02
50	0.00456	94,294	430	94,079	2,748,212	29.15
51	0.00492	93,865	462	93,634	2,654,132	28.28
52	0.00510	93,403	476	93,165	2,560,498	27.41
53	0.00540	92,927	502	92,676	2,467,334	26.55
54	0.00585	92,425	540	92,154	2,374,658	25.69
55	0.00638	91,884	586	91,591	2,282,503	24.84
56	0.00715	91,298	653	90,972	2,190,912	24.00
57	0.00770	90,646	698	90,297	2,099,940	23.17
58	0.00830	89,948	747	89,574	2,009,643	22.34
59	0.00906	89,201	809	88,797	1,920,069	21.53
60	0.00993	88,392	878	87,953	1,831,273	20.72
61	0.01091	87,514	955	87,037	1,743,319	19.92
62	0.01171	86,560	1,014	86,053	1,656,282	19.13
63	0.01281	85,546	1,096	84,998	1,570,229	18.36
64	0.01414	84,450	1,194	83,853	1,485,231	17.59
65	0.01537	83,256	1,279	82,616	1,401,378	16.83
66	0.01673	81,977	1,371	81,291	1,318,762	16.09
67	0.01837	80,605	1,481	79,865	1,237,471	15.35
68	0.02031	79,125	1,607	78,321	1,157,606	14.63
69	0.02269	77,518	1,759	76,638	1,079,285	13.92
70	0.02506	75,758	1,898	74,809	1,002,647	13.23

Table 6 Korean Life Tables, 2001 (continued)

Both Sexes

Age	Probability of dying	Number surviving	Number dying	Number of person-years lived		Average remaining lifetime
	q_x	l_x	nd_x	nL_x	T_x	e_x
71	0.02779	73,860	2,052	72,834	927,838	12.56
72	0.03060	71,808	2,197	70,709	855,004	11.91
73	0.03418	69,611	2,379	68,421	784,294	11.27
74	0.03865	67,231	2,598	65,932	715,873	10.65
75	0.04340	64,633	2,805	63,231	649,941	10.06
76	0.04891	61,828	3,024	60,316	586,710	9.49
77	0.05338	58,804	3,139	57,235	526,394	8.95
78	0.05916	55,665	3,293	54,019	469,160	8.43
79	0.06526	52,372	3,418	50,663	415,141	7.93
80	0.07354	48,954	3,600	47,154	364,478	7.45
81	0.08182	45,354	3,711	43,498	317,324	7.00
82	0.09031	41,643	3,761	39,763	273,826	6.58
83	0.09931	37,882	3,762	36,001	234,063	6.18
84	0.10853	34,120	3,703	32,269	198,062	5.80
85	0.11898	30,417	3,619	28,608	165,793	5.45
86	0.13003	26,798	3,485	25,056	137,186	5.12
87	0.14167	23,314	3,303	21,662	112,130	4.81
88	0.15389	20,011	3,079	18,471	90,468	4.52
89	0.16665	16,931	2,822	15,520	71,997	4.25
90	0.17992	14,110	2,359	12,840	56,476	4.00
91	0.19366	11,571	2,241	10,451	43,636	3.77
92	0.20780	9,330	1,939	8,361	33,186	3.56
93	0.22231	7,391	1,643	6,570	24,825	3.36
94	0.23710	5,748	1,363	5,067	18,255	3.18
95	0.25210	4,385	1,106	3,833	13,188	3.01
96	0.26724	3,280	876	2,842	9,356	2.85
97	0.28242	2,403	679	2,064	6,514	2.71
98	0.29755	1,725	513	1,468	4,450	2.58
99	0.31254	1,211	379	1,022	2,982	2.46
100+	1.00000	833	833	1,960	1,960	2.35

Table 6 Korean Life Tables, 2001 (continued)

Male

Age	Probability of dying	Number surviving	Number dying	Number of person-years lived		Average remaining lifetime
	q_x	l_x	nd_x	nL_x	T_x	e_x
0	0.00591	100,000	591	99,444	7,283,752	72.84
1	0.00060	99,409	59	99,380	7,184,308	72.27
2	0.00051	99,350	51	99,325	7,084,928	71.31
3	0.00043	99,299	43	99,278	6,985,604	70.35
4	0.00038	99,257	38	99,238	6,886,326	69.38
5	0.00034	99,219	34	99,202	6,787,088	68.41
6	0.00031	99,185	31	99,170	6,687,886	67.43
7	0.00028	99,154	28	99,140	6,588,716	66.45
8	0.00024	99,127	24	99,115	6,489,576	65.47
9	0.00022	99,103	21	99,092	6,390,461	64.48
10	0.00020	99,081	20	99,071	6,291,369	63.50
11	0.00020	99,061	20	99,052	6,192,298	62.51
12	0.00020	99,042	20	99,032	6,093,246	61.52
13	0.00022	99,022	22	99,011	5,994,215	60.53
14	0.00028	99,000	28	98,986	5,895,204	59.55
15	0.00037	98,972	37	98,954	5,796,218	58.56
16	0.00046	98,935	46	98,912	5,697,264	57.59
17	0.00055	98,889	54	98,862	5,598,352	56.61
18	0.00061	98,835	61	98,805	5,499,489	55.64
19	0.00067	98,775	66	98,742	5,400,684	54.68
20	0.00069	98,709	68	98,675	5,301,942	53.71
21	0.00070	98,641	69	98,606	5,203,267	52.75
22	0.00074	98,572	73	98,535	5,104,661	51.79
23	0.00081	98,499	80	98,459	5,006,126	50.82
24	0.00085	98,419	84	98,377	4,907,666	49.86
25	0.00086	98,335	85	98,293	4,809,289	48.91
26	0.00088	98,251	87	98,207	4,710,996	47.95
27	0.00090	98,164	89	98,120	4,612,789	46.99
28	0.00095	98,075	93	98,029	4,514,669	46.03
29	0.00099	97,983	97	97,934	4,416,640	45.08
30	0.00103	97,886	101	97,835	4,318,706	44.12
31	0.00110	97,785	107	97,731	4,220,871	43.16
32	0.00120	97,677	117	97,619	4,123,140	42.21
33	0.00134	97,560	130	97,495	4,025,521	41.26
34	0.00149	97,430	145	97,357	3,928,026	40.32
35	0.00162	97,284	157	97,206	3,830,669	39.38

Table 6 Korean Life Tables, 2001 (continued)

Male

Age	Probability of dying	Number surviving	Number dying	Number of person-years lived		Average remaining lifetime
	q_x	l_x	nd_x	nL_x	T_x	e_x
36	0.00177	97,127	172	97,041	3,733,463	38.44
37	0.00197	96,955	191	96,859	3,636,422	37.51
38	0.00222	96,764	215	96,656	3,539,563	36.58
39	0.00247	96,549	238	96,430	3,442,906	35.66
40	0.00272	96,311	262	96,180	3,346,476	34.75
41	0.00301	96,049	289	95,904	3,250,296	33.84
42	0.00332	95,760	318	95,601	3,154,392	32.94
43	0.00363	95,442	347	95,269	3,058,791	32.05
44	0.00400	95,095	381	94,905	2,963,523	31.16
45	0.00436	94,715	413	94,508	2,868,618	30.29
46	0.00487	94,301	459	94,072	2,774,110	29.42
47	0.00524	93,842	491	93,597	2,680,038	28.56
48	0.00574	93,351	535	93,083	2,586,441	27.71
49	0.00627	92,816	582	92,525	2,493,358	26.86
50	0.00678	92,234	625	91,921	2,400,833	26.03
51	0.00731	91,608	669	91,274	2,308,912	25.20
52	0.00758	90,939	690	90,594	2,217,638	24.39
53	0.00804	90,250	726	89,887	2,127,044	23.57
54	0.00868	89,524	777	89,135	2,037,157	22.76
55	0.00945	88,747	839	88,327	1,948,022	21.95
56	0.01067	87,908	938	87,439	1,859,695	21.16
57	0.01157	86,970	1,006	86,468	1,772,255	20.38
58	0.01251	85,965	1,076	85,427	1,685,788	19.61
59	0.01362	84,889	1,156	84,311	1,600,361	18.85
60	0.01497	83,732	1,253	83,106	1,516,051	18.11
61	0.01643	82,479	1,355	81,802	1,432,945	17.37
62	0.01763	81,124	1,430	80,409	1,351,143	16.66
63	0.01921	79,694	1,531	78,929	1,270,734	15.95
64	0.02123	78,164	1,659	77,334	1,191,805	15.25
65	0.02305	76,504	1,764	75,623	1,114,471	14.57
66	0.02493	74,741	1,863	73,809	1,038,848	13.90
67	0.02715	72,878	1,978	71,889	965,039	13.24
68	0.02990	70,899	2,120	69,839	893,151	12.60
69	0.03350	68,780	2,304	67,628	823,311	11.97
70	0.03695	66,476	2,456	65,248	755,683	11.37

Table 6 Korean Life Tables, 2001 (continued)

Male

Age	Probability of dying	Number surviving	Number dying	Number of person-years lived		Average remaining lifetime
	q_x	l_x	nd_x	nL_x	T_x	e_x
71	0.04059	64,020	2,599	62,720	690,436	10.78
72	0.04425	61,421	2,718	60,062	627,715	10.22
73	0.04864	58,703	2,855	57,276	567,653	9.67
74	0.05471	55,848	3,055	54,320	510,378	9.14
75	0.05981	52,793	3,158	51,214	456,058	8.64
76	0.06662	49,635	3,307	47,982	404,844	8.16
77	0.07171	46,328	3,322	44,667	356,862	7.70
78	0.07941	43,006	3,415	41,298	312,195	7.26
79	0.08655	39,591	3,427	37,877	270,897	6.84
80	0.09517	36,164	3,442	34,443	233,019	6.44
81	0.10307	32,722	3,373	31,036	198,576	6.07
82	0.11211	29,350	3,290	27,705	167,540	5.71
83	0.12282	26,059	3,201	24,459	139,835	5.37
84	0.13410	22,859	3,065	21,326	115,376	5.05
85	0.14511	19,794	2,872	18,357	94,050	4.75
86	0.15671	16,921	2,652	15,595	75,692	4.47
87	0.16891	14,270	2,410	13,064	60,097	4.21
88	0.18170	11,859	2,155	10,782	47,032	3.97
89	0.19506	9,705	1,893	8,758	36,250	3.74
90	0.20900	7,812	1,633	6,995	27,492	3.52
91	0.22350	6,179	1,381	5,488	20,497	3.32
92	0.23852	4,798	1,144	4,226	15,009	3.13
93	0.25405	3,654	928	3,189	10,783	2.95
94	0.27006	2,725	736	2,357	7,594	2.79
95	0.28651	1,989	570	1,704	5,236	2.63
96	0.30336	1,419	431	1,204	3,532	2.49
97	0.32056	989	317	830	2,328	2.35
98	0.33807	672	227	558	1,497	2.23
99	0.35584	445	158	366	939	2.11
100+	1.00000	286	286	574	574	2.00

Table 6 Korean Life Tables, 2001 (continued)

Female

Age	Probability of dying	Number surviving	Number dying	Number of person-years lived		Average remaining lifetime
	q_x	l_x	d_x	nL_x	T_x	e_x
0	0.00552	100,000	552	99,485	8,001,456	80.01
1	0.00055	99,448	55	99,420	7,901,972	79.46
2	0.00042	99,393	42	99,372	7,802,551	78.50
3	0.00034	99,351	33	99,334	7,703,180	77.54
4	0.00028	99,317	28	99,304	7,603,845	76.56
5	0.00025	99,290	24	99,278	7,504,542	75.58
6	0.00021	99,265	21	99,255	7,405,264	74.60
7	0.00020	99,244	20	99,234	7,306,010	73.62
8	0.00018	99,224	18	99,215	7,206,775	72.63
9	0.00016	99,206	16	99,198	7,107,560	71.64
10	0.00015	99,190	15	99,183	7,008,362	70.66
11	0.00014	99,176	14	99,169	6,909,179	69.67
12	0.00015	99,161	15	99,154	6,810,010	68.68
13	0.00017	99,146	17	99,138	6,710,856	67.69
14	0.00019	99,129	19	99,120	6,611,719	66.70
15	0.00023	99,110	23	99,099	6,512,599	65.71
16	0.00026	99,087	26	99,074	6,413,500	64.73
17	0.00028	99,061	27	99,048	6,314,425	63.74
18	0.00029	99,034	29	99,020	6,215,378	62.76
19	0.00031	99,005	31	98,989	6,116,358	61.78
20	0.00034	98,974	34	98,957	6,017,369	60.80
21	0.00036	98,940	36	98,922	5,918,412	59.82
22	0.00037	98,904	37	98,886	5,819,490	58.84
23	0.00038	98,868	38	98,849	5,720,604	57.86
24	0.00038	98,830	38	98,811	5,621,755	56.88
25	0.00037	98,792	37	98,774	5,522,944	55.90
26	0.00041	98,755	40	98,735	5,424,170	54.93
27	0.00042	98,715	41	98,694	5,325,435	53.95
28	0.00045	98,674	44	98,652	5,226,741	52.97
29	0.00047	98,630	46	98,607	5,128,089	51.99
30	0.00050	98,584	49	98,559	5,029,482	51.02
31	0.00054	98,534	53	98,508	4,930,923	50.04
32	0.00057	98,481	56	98,453	4,832,416	49.07
33	0.00061	98,426	60	98,395	4,733,962	48.10
34	0.00065	98,365	64	98,333	4,635,567	47.13
35	0.00069	98,301	68	98,268	4,537,233	46.16

Table 6 Korean Life Tables, 2001 (continued)

Female

Age	Probability of dying	Number surviving	Number dying	Number of person-years lived		Average remaining lifetime
	q_x	l_x	nd_x	nL_x	T_x	e_x
36	0.00074	98,234	72	98,198	4,438,966	45.19
37	0.00080	98,161	78	98,122	4,340,768	44.22
38	0.00088	98,083	87	98,040	4,242,646	43.26
39	0.00094	97,996	92	97,950	4,144,606	42.29
40	0.00099	97,904	97	97,856	4,046,656	41.33
41	0.00109	97,807	107	97,754	3,948,800	40.37
42	0.00118	97,700	115	97,642	3,851,047	39.42
43	0.00129	97,585	125	97,522	3,753,404	38.46
44	0.00136	97,459	132	97,393	3,655,882	37.51
45	0.00145	97,327	141	97,257	3,558,489	36.56
46	0.00158	97,186	154	97,109	3,461,233	35.61
47	0.00169	97,032	164	96,951	3,364,123	34.67
48	0.00186	96,869	181	96,779	3,267,173	33.73
49	0.00205	96,688	198	96,589	3,170,394	32.79
50	0.00227	96,490	219	96,381	3,073,805	31.86
51	0.00247	96,271	238	96,152	2,977,424	30.93
52	0.00257	96,033	247	95,909	2,881,272	30.00
53	0.00274	95,786	262	95,655	2,785,363	29.08
54	0.00302	95,524	288	95,380	2,689,708	28.16
55	0.00334	95,236	318	95,077	2,594,328	27.24
56	0.00377	94,917	358	94,738	2,499,252	26.33
57	0.00406	94,559	384	94,367	2,404,513	25.43
58	0.00438	94,176	413	93,969	2,310,146	24.53
59	0.00486	93,763	456	93,535	2,216,177	23.64
60	0.00535	93,307	500	93,057	2,122,642	22.75
61	0.00600	92,808	557	92,529	2,029,584	21.87
62	0.00654	92,251	603	91,949	1,937,055	21.00
63	0.00732	91,648	671	91,312	1,845,106	20.13
64	0.00822	90,977	747	90,603	1,753,793	19.28
65	0.00915	90,230	825	89,817	1,663,190	18.43
66	0.01033	89,404	924	88,942	1,573,373	17.60
67	0.01181	88,480	1,045	87,958	1,484,431	16.78
68	0.01348	87,435	1,179	86,846	1,396,473	15.97
69	0.01542	86,256	1,330	85,592	1,309,627	15.18
70	0.01746	84,927	1,483	84,185	1,224,036	14.41

Table 6 Korean Life Tables, 2001 (continued)

Female

Age	Probability of dying	Number surviving	Number dying	Number of person-years lived		Average remaining lifetime
	q_x	l_x	d_x	nL_x	T_x	e_x
71	0.01991	83,444	1,662	82,613	1,139,850	13.66
72	0.02243	81,782	1,835	80,865	1,057,237	12.93
73	0.02573	79,948	2,057	78,919	976,373	12.21
74	0.02950	77,890	2,298	76,741	897,454	11.52
75	0.03411	75,592	2,579	74,303	820,713	10.86
76	0.03893	73,014	2,842	71,592	746,410	10.22
77	0.04327	70,171	3,036	68,653	674,817	9.62
78	0.04839	67,135	3,249	65,510	606,164	9.03
79	0.05438	63,886	3,474	62,149	540,654	8.46
80	0.06267	60,412	3,786	58,519	478,505	7.92
81	0.07140	56,626	4,043	54,605	419,986	7.42
82	0.08009	52,583	4,211	50,477	365,381	6.95
83	0.08908	48,372	4,309	46,217	314,904	6.51
84	0.09824	44,063	4,329	41,899	268,687	6.10
85	0.10908	39,734	4,334	37,567	226,788	5.71
86	0.12057	35,400	4,268	33,266	189,221	5.35
87	0.13269	31,132	4,131	29,066	155,955	5.01
88	0.14540	27,001	3,926	25,038	126,889	4.70
89	0.15861	23,075	3,660	21,245	101,851	4.41
90	0.17227	19,415	3,345	17,743	80,606	4.15
91	0.18629	16,070	2,994	14,574	62,863	3.91
92	0.20056	13,077	2,623	11,765	48,289	3.69
93	0.21497	10,454	2,247	9,330	36,524	3.49
94	0.22941	8,207	1,883	7,265	27,194	3.31
95	0.24374	6,324	1,541	5,553	19,928	3.15
96	0.25784	4,783	1,233	4,166	14,375	3.01
97	0.27155	3,549	964	3,068	10,209	2.88
98	0.28474	2,586	736	2,218	7,141	2.76
99	0.29725	1,849	550	1,575	4,924	2.66
100+	1.00000	1,300	1,300	3,349	3,349	2.58

Contributors

Doo-Sub Kim	Professor, Hanyang University
Min-Kyung Kim	Director-General, Korea National Statistical Office
Kwang-Hee Jun	Professor, Chungnam National University
Tai-Hun Kim	Professor, Korea National University of Education
Nam-Hoon Cho	Visiting Senior Fellow, Korea Institute for Health and Social Affairs
Yong-Chan Byun	Senior Research Fellow, Korea Institute for Health and Social Affairs
Keong-Suk Park	Professor, Dong-A University
Wha-Soon Byun	Senior Research Fellow, Korean Women's Development Institute
Cheong-Seok Kim	Professor, Dongguk University
Kyonghee Min	Professor, Chungbuk National University
Ki-Soo Eun	Professor, Academy of Korean Studies
Jin Ho Choi	Professor, Ajou University
Se-Hoon Chang	Professor, Dong-A University
Tai-Hwan Kwon	Professor, Seoul National University
Sang-Tae Park	Professor, Sogang University