

Understanding Recent Fertility Decline in Korea

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1. Introduction

It is very well known that fertility has been steadily declined to a remarkably lower level in Korea. Young couples in recent years are likely to have one or two children at most. When compared to higher fertility in the past, for example total fertility rate of 6.0 about 40 years ago, the achievement of lower fertility below the replacement level in such a short time period can be thought marvelous. Koreans and Korean society were shocked at the news report that total fertility rate in 2001 was just 1.3. Mass media heralded as if Korean society suddenly entered the era of lower fertility in the onset of the 21st century. In order to deal with the problem of lower fertility, conferences and workshops including scholars, government officials and policy makers were held in recent years. Causes of rapid decline of fertility and possible policies to curb the extreme decrease of fertility were widely discussed in those occasions. There is, however, no consensus on causes of sharp decline of fertility and possible treatment for the problems generated by decreasing fertility.

The objective of this research is to understand causes of rapid decline of fertility from an economic point of view. This research pays a particular attention to the impact of the economic crisis that swept down almost all Asian countries in the late 1990s. The economic crisis has exerted a great impact on everyday life of ordinary people in most Asian countries including Korea. Fertility is no exception to this. Not only timing of childbearing but also size of childbirth has been affected greatly by the economic constraints. This research aims at showing briefly how the economic crisis has affected the recent fertility decline in Korea.

2. Fertility Transition in Korea

Korea completed fertility transition under the replacement level in the middle of the 1980s. In 1970, total fertility rate (TFR) was as high as 4.53. But in four years, it fell to 3.81, namely below 4 in 1974. In four years again, TFR dropped to 2.65, now below 3 in 1978. Finally, TFR in Korea fell below 2, the replacement level in 1984 (see Table 1).

Even after fertility reached the replacement level, it kept on decreasing far below the replacement level through the 1980s. It hit the bottom in 1987, when TFR was 1.55. Fertility, then, slightly began to increase up to 1.78 in TFR in 1992. It, however, once again turned downward since it peaked in 1992. In particular, the pace of decline of fertility began to be accelerated after 1995. TFR which was 1.65 in 1995 turned into 1.58, 1.54, 1.47 and 1.42 in 1996, 1997, 1998, and 1999, respectively. Finally, fertility hit the bottom once again, 1.3 in TFR in 2001.

Although fertility has kept on decreasing even after it passed the replacement level in the early 1980s, Koreans and Korean society seem to be surprised at currently lower fertility as if the lower fertility has been reached so suddenly and unnoticed. But it is never true to say that fertility has been lowered abruptly in Korea. Except for the short period of fluctuation of TFR in the early 1990s, which is likely to happen when the pace of decline of fertility is so fast in a society (e.g. Bongaarts, 1999), fertility has kept on decreasing for a long time in Korea. What makes us surprised is the unexpected pace of decline of fertility in the latter half of the 1990s. I will describe more about this later.

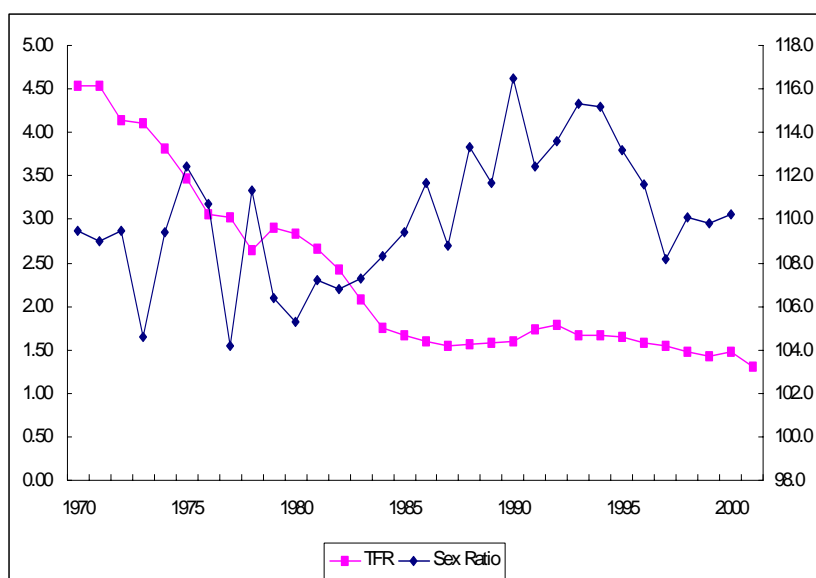
Table 1 CBR, TFR and Sex Ratio at Birth in Korea, 1970-2001

Year	CBR	TFR	Sex Ratio
1970	31.2	4.53	109.5
1971	31.2	4.54	109.0
1972	28.5	4.14	109.5
1973	28.4	4.10	104.6
1974	26.6	3.81	109.4
1975	24.8	3.47	112.4
1976	22.2	3.05	110.7
1977	22.7	3.02	104.2
1978	20.4	2.65	111.3
1979	23.0	2.90	106.4
1980	22.7	2.83	105.3
1981	22.7	2.66	107.2
1982	21.8	2.42	106.8
1983	19.5	2.08	107.3
1984	16.9	1.76	108.3
1985	16.2	1.67	109.4
1986	15.6	1.60	111.7
1987	15.1	1.55	108.8
1988	15.2	1.56	113.3
1989	15.2	1.58	111.7
1990	15.4	1.59	116.5
1991	16.6	1.74	112.4
1992	16.9	1.78	113.6
1993	16.4	1.67	115.3
1994	16.3	1.67	115.2
1995	16.0	1.65	113.2
1996	15.3	1.58	111.6
1997	14.8	1.54	108.2
1998	13.8	1.47	110.1
1999	13.2	1.42	109.8
2000	13.4	1.47	110.2
2001	11.6	1.30	109.0

Source: KNSO(2002a:28-29, Table 1)

Korean society began to face a new demographic problem with the decreasing fertility in the 1980s. Sex ratio at birth fluctuated until fertility reached the replacement level in the 1980s. It was sometimes higher than the sex ratio at birth in a natural setting although selective abortion was not widely possible at those times. But there was no wide distortion in sex ratio at birth before fertility was lowered to below the replacement level. With the continued decline of fertility in the latter half of the 1980s, however, Korean society had to face a tremendously distorted sex ratio at birth. Sex ratio at birth has fluctuated between 108.8 and 116.5 since 1986. During this period, the years when sex ratio at birth was as low as below 110 were only 1987, 1997, and 1999. Except for these three years since 1986, sex ratio at birth was always higher than 110, which cannot occur without artificial interruption on conception and childbirth (see Figure 1).

Figure 1 TFR and Sex Ratio at Birth in Korea, 1970-2001



Sex ratio for the first parity in recent years is absolutely as normal as we can observe in a natural setting. Sex ratio for the second parity has also become as normal as that for the first parity. For instance, sex ratio for the second parity was 112.4, 109.8, and 106.4 in 1992, 1996 and 2001, respectively. But sex ratio for the third or higher parity is still likely to be deviated greatly from that of a natural setting. It was as high as 206.0 for the third or higher parity in 1993. Since 1993 has the sex ratio for the third or higher parity been fluctuating between 135.5 and 206.6. Although it is not so high as in the past, sex ratio for the third or higher parity is still far from that of a natural setting. This contributes to maintaining higher sex ratio at birth in current Korean society. In a society of lower fertility, unbalanced sex ratio at birth raises another social problem of the instability of marriage market and family system.

Demographers frequently analyze fertility only from the demographic perspective. In this research, I propose to consider the changes in fertility from the perspective of the family as a social institution with the help of the life course perspective. Currently lower fertility is not an isolated demographic phenomenon from the changing family system and family values in Korea. Generally speaking, marriage signals the family formation in Korea. Although marriage as a social institution seems to lose its significance gradually even in a Confucian society, cohabitation is not recognized as an alternative to marriage in Korean society. Childbearing can be understood as the opportunity of the expanded reproduction of the family. Children born out of wedlock, however, are very negatively stigmatized in Korea, so that the number of illegitimate births is still negligible. Thus, fertility cannot help but have a direct and strong tie with marriage within Korean family system. Divorce is one of the events signaling the dissolution of the family. Although the significance of divorce in determining fertility is not so strong as marriage within family system, increasing divorce not only makes the family unstable but also affects fertility slightly in Korea.

If we understand that fertility is closely related to marriage and divorce, and that marriage, childbearing and divorce are three major components of the family, changes of fertility needs to be seen from the perspective of the changing family system in Korea. Then we can broaden our understanding of causes and effects of fertility change beyond a merely narrow demographic analysis. The following Table 2 and Figure 2 show how three components of the family have changed since 1970.

Table 2 Changes of Fertility, Marriage and Divorce in Korea, 1970-2001

Year	TFR	CMR	CDiR
1970	4.53	9.2	0.4
1971	4.54	7.3	0.3
1972	4.14	7.3	0.4
1973	4.10	7.6	0.4
1974	3.81	7.5	0.4
1975	3.47	8.0	0.5
1976	3.05	8.0	0.5
1977	3.02	8.3	0.6
1978	2.65	9.3	0.5
1979	2.90	9.4	0.5
1980	2.83	10.6	0.6
1981	2.66	9.4	0.6
1982	2.42	9.2	0.7
1983	2.08	9.2	0.7
1984	1.76	8.9	0.9
1985	1.67	9.2	1.0
1986	1.60	9.2	1.0
1987	1.55	9.1	1.0
1988	1.56	9.2	1.0
1989	1.58	9.4	1.0
1990	1.59	9.3	1.1
1991	1.74	9.6	1.1
1992	1.78	9.6	1.2
1993	1.67	9.0	1.3
1994	1.67	8.7	1.4
1995	1.65	8.7	1.5
1996	1.58	9.4	1.7
1997	1.54	8.4	2.0
1998	1.47	8.0	2.5
1999	1.42	7.7	2.5
2000	1.47	7.0	2.5
2001	1.30	6.7	2.8
2002		6.4	3.0

Source: KNSO(2002a:28-29, Table 1; 2002b:12, Table 1); KNSO(2003).

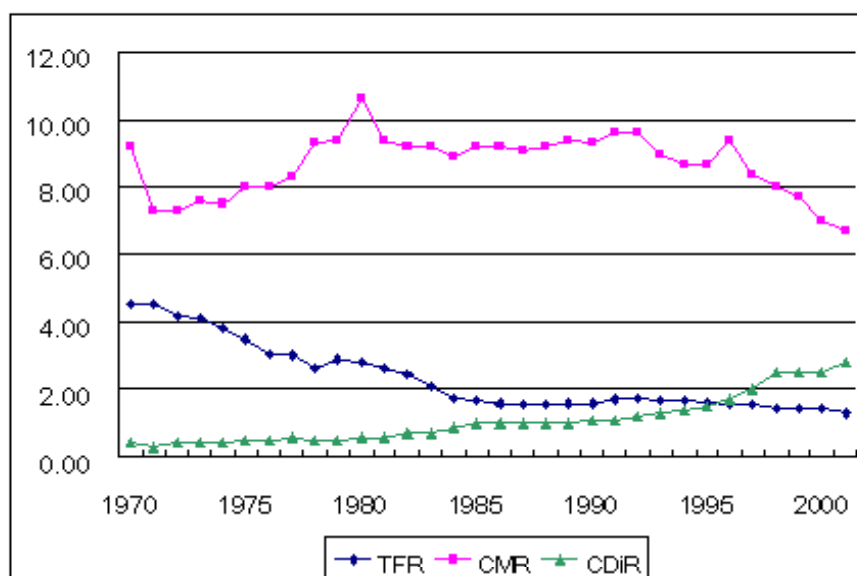
As I already discussed above, fertility has been decreasing rapidly in the 1970s and 1980s, and somewhat slowly in the 1990s. Fertility once again started declining steeply after 1997.

Crude marriage rate (CMR, number of marriage per 1000 person) climbed from 7.3 in 1971 to 10.6 in 1980. And then it fluctuated between 8.7 and 9.4 from 1981 to 1996. Marriage, however, has been decreasing to a great extent after 1996. CMR turned to 8.0, 7.0 and 6.7 in 1998, 2000, and 2001, respectively.

The level of marriage rate in 2001 in terms of CMR is at a record low since 1970. Roughly speaking, marriage has been downward in the 1990s and began to decline rapidly after 1996. Decrease of marriage at the societal level means less family formation in the 1990s and can be a significant cause of lower “period” fertility in a society where only childbearing within marriage is accepted.

Divorce has been steadily increasing since 1970 as we see in Table 2 and Figure 2. The pace of increase of divorce had been very slow until 1990. It took 24 years until crude divorce rate (CDiR, number of divorce per 1000 person) changed from 0.3 in 1970 to 1.4 in 1994. Divorce, however, began to increase so remarkably in the 1990s. In particular, divorce rate jumped up after 1996. CDiR was 1.7 in 1996. It climbed to 2.0 in 1997. Next year, it once again jumped up to 2.5. Crude divorce rate had remained at 2.5 for three years. And then it climbed to 2.8 in 2001. In 2002, CDiR finally reached 3.0.

Figure 2 Trends of Fertility, Marriage and Divorce in Korea



Causes of the increase of divorce vary by period (see Appendix 3). Increasing educational attainment by women and achievement of economic independence of women by participating in the labor market are among the causes of increasing divorce. Changing family value may be another cause of increasing divorce. Regardless of causes of divorce, the trend of increasing divorce indicates that family dissolution is rising in Korea, which inevitably affects fertility downward although the impact on fertility decline is relatively small.

As I already mentioned, marriage, fertility and divorce are three major components of the family, indicating an onset of the family formation, an expanded reproduction of the family and a beginning of family dissolution, respectively. Fertility cannot vary apart from marriage and divorce because these three are so closely related within family system. To repeat, we need to

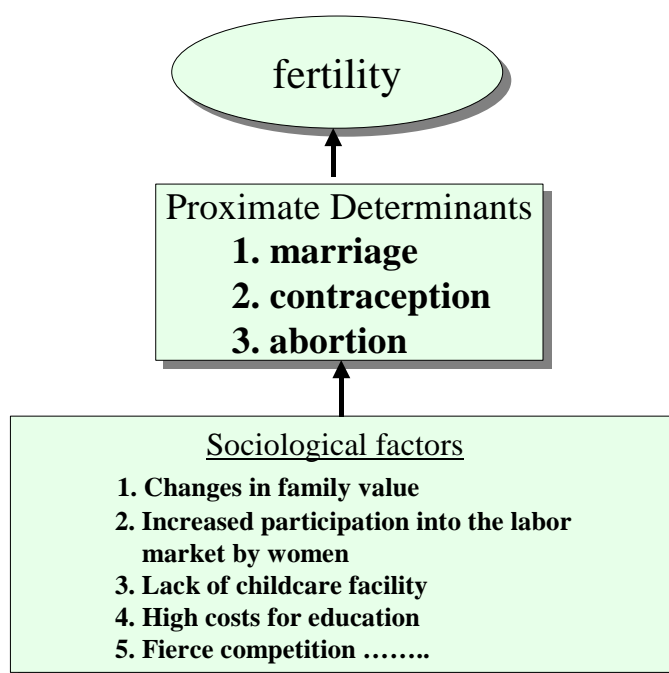
adopt the viewpoint of the family even when we analyze fertility decline in Korea. This means that we must take into account more positively factors that affect the family, not just fertility.

Interestingly, we find in Table 2 and Figure 2 that all three components of the family began to change rapidly in 1997. This year falls on the outbreak of the economic crisis by which most Asian countries have been greatly affected. In fact, the economic crisis in Korea resulted in great changes in everyday life of ordinary people from familial life to work to individual behavior. Fertility is sure to be no exception to this change if we consider fertility as a component of the family that has been exposed to the impact of the economic crisis. Marriage and divorce are also no exception, either. Therefore, the impact of the economic crisis must be taken into account in explaining recent fertility decline in Korea.

3. A Traditional Model for Fertility Decline in Korea

Prior demographic and sociological research relied on several typical factors in explaining fertility decline in Korea. Some of them are increasing educational attainment of women, increasing participation in the labor market by women, the lack of childcare facilities, changing family value preferring egalitarian relationship between a couple, weakened influence of parents and relatives on decision-making of childbearing, preference of quality of children to quantity, soaring cost in rearing children, fierce competition at the societal level and so on. All these factors affect fertility through proximate determinants such as marriage, contraception and abortion under the controlled fertility regime. A traditional model including these factors can be depicted as follows.

Figure 3 A Traditional Model for Fertility Decline in Korean Society



It is out of question that all these socioeconomic factors have contributed to reducing fertility since the early 1960s. Prior demographic research by Korean demographers (e.g. Kwon, 1980) demonstrates fairly well how greatly proximate determinants have contributed to lowering fertility in Korea. In fact, these socioeconomic factors have played a great role in completing fertility transition within such a short. In addition, increasing age at marriage, wide practice of contraception, and practice of induced abortion are the proximate determinants through which all the socioeconomic factors affect fertility decline in Korean society.

I, however, find that this model is not enough to explain why there occurred such a rapid change in all three components of the family such as marriage, fertility and divorce in Korean society after 1996. In fact, marriage, fertility and divorce have greatly changed not only in Korea but also in Taiwan and Hong Kong after the economic crisis that swept down most Asian societies (see Chang, 2003; Tu, 2003). A traditional model cannot explain why Asian countries show concomitantly very similar patterns of change in marriage, fertility and divorce. Defenders of the traditional model, who do not consider the impact of the economic crisis in their model, may maintain that it takes time for the impact of the economic crisis to be reflected in current fertility decline in Asian societies, so that the traditional model is still appropriate in explaining fertility change in other Asian countries as well as in Korea. I, however, do not have any concrete evidence that all the socioeconomic and value changes suddenly functioned concomitantly with the economic crisis toward reducing fertility more and more in Korea. For example, it is not true to assert that family value changed to a great extent toward lowering fertility in Korea after the economic crisis. Women's participation in the labor market did not increase so much as to affect a rapid fertility decline. Can we assume that the lack of childcare facilities has suddenly was the key factor for female workers to withdraw childbearing after the economic crisis? I do not have any evidence to support these kinds of inferences. For this reason, I believe we need another model in order to explain more appropriately the rapid change in marriage and divorce as well as in fertility after the economic crisis. To get a clue for understanding rapid changes in fertility, marriage and divorce, let us look at the result of the decomposition of percentage change in total fertility rate since 1955. The following Table 3 shows the result of the decomposition.

Table 3 Decomposition of Percentage Change of Total Fertility Rate, 1955-2000

	1955-60	1960-65	1965-70	1970-75	1975-80	1980-85	1985-90	1990-95	1995-00
Percentage Change	5.6	-16.8	-17.6	-13.4	-24.7	-25.7	-18.3	1.2	-5.4
Marital Status	-3.9	-6.3	-3.5	-3.5	-5.6	-6.4	-6.5	-5.8	-9.9
age at marriage	-6.9	-7.6	-4.0	-3.7	-6.3	-6.7	-7.9	-5.6	-9.6
divorce or bereavement	3.0	1.3	0.5	0.2	0.7	0.3	1.4	-0.2	-0.3
Marital Fertility	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	-23.0	-23.9	-13.4	-5.3	-7.4
Abortion	-3.1	-5.1	-4.6	-4.0	3.9	4.6	1.6	12.3	11.9
Other	12.6	-3.7	-	-	-	-	-	-	-

Source: Jun (2003:90, Table 3-2)

In Table 3, it is evident that the pace of the decline of fertility was great between 1960 and 1990. In particular, percentage change was the greatest in the period of 1980-1985. During this period, TFR decreased by 25.7%. In the period of 1975-1980, TFR also dropped remarkably by 24.7%. Until 1990, the practice of contraception contributed to fertility decline the most among all factors. For example, the percentage change of TFR during the period of 1975-1980 and 1980-1985 when fertility was lowered to below the replacement level was almost entirely due to the wide practice of contraception. So we cannot say too much about the pivotal role of contraception in fertility decline until 1990.

On the other hand, fertility increased a little bit during the period of 1990-1995 as we saw in Tables 1 and 2. During this period, the role of abortion in reducing fertility disappeared completely. Although changes in age at marriage and the practice of contraception still contributed to lowering TFR, other factors offset the contribution of age at marriage and the practice of contraception in fertility decline.

The period in which we need to pay more attention in this research is that of 1995-2000. The economic crisis in Asian countries started during this period. Although the percentage change seems to be rather small compared to that of other periods, we need to focus on the fact that fertility once again turned downward after the period of 1990-1995. What factors contributed to lowering total fertility rate in the period of 1995-2000? The practice of contraception still worked fairly well in reducing total fertility rate during this period. More important is that the influence of age at marriage began to surpass that of the practice of contraception in reducing fertility although the difference is not so big in the 1990s. Divorce, although the influence on lowering fertility is very limited, also began to play a role toward reducing fertility in recent years.

In order to see the changing influence of age at marriage and the practice of contraception in lowering fertility, it is helpful to understand the trend of marital fertility rate in Korea. As for the lower fertility for the last few years, some Korean feminists attributed it to the lack of childcare facilities supported by the government. Their logic is that the lowest fertility results from that married

female workers avoid childbearing because of the lack of childcare facilities. If their assertions are right, then we have to find that marital fertility has declined because most married female workers are likely to contribute to lowering marital fertility by avoiding childbearing. Is it true?

Table 4 shows the trends of age-specific marital fertility rate between 1980 and 2000. Unlike our expectation, marital fertility has not diminished since 1980. On the contrary, after total marital fertility rate plunged into the bottom in 1985, it steadily climbed to 3.56, 3.63 and 3.69 in 1990, 1995 and 2000, respectively.

Table 4 Age-Specific Marital Fertility Rate in Korea, 1980-2000

Age / Year	1980	1985	1990	1995	2000
20-24	404.0	423.0	426.0	377.0	364.0
25-29	286.0	194.0	219.0	253.0	255.0
30-34	121.0	44.0	55.0	76.0	97.0
35-39	43.0	10.0	10.0	16.0	19.0
40-44	17.0	2.0	2.0	3.0	3.0
45-49	7.0	1.0	0.0	0.0	0.0
TMFR	4.39	3.37	3.56	3.63	3.69

Source: Jun(2003:93, Table 3-4)

I do not have an appropriate answer to the question why marital fertility has not diminished while total fertility rate has greatly declined. I can only say that married women, once they got married, did not avoid childbearing under the lower fertility regime during the latter half of the 1980s and the entire 1990s unlike some feminists asserted. This implies that recent fertility decline is not necessarily due to the fact that married female workers are avoiding childbearing by practicing contraception or abortion. On the contrary, other factors rather than the practice of contraception may play more important roles in lowering fertility since the economic crisis. We already know from the discussion above that increasing age at marriage and the spread of divorce gain more significance in explaining the decline of fertility since the economic crisis. The next step is to contrive a new mechanism to explain why age at marriage still rises and divorce occurs frequently.

4. A New Model for Recent Fertility Decline Since the Economic Crisis

I propose a new model to explain recent fertility decline since the economic crisis. The most fundamental change at the societal level that results from the economic crisis is the reconstruction of the labor market according to the principle of “new liberalism” in Korea. At the early stage of the economic crisis, a number of corporations had to go bankrupt. This directly resulted in the sudden disappearance of a number of “permanent” jobs for workers. Youths who finished their schooling tried to enter the labor market but found that there were few jobs available to them. All these resulted in soaring unemployment rate for all age groups. To cope with the crisis, Korean government initiated to

reconstruct the labor market not only to increase jobs sharable by many unemployed but also to induce foreign investment. As for the government, the only way to accomplish both goals seems to adopt the principle of “new liberalism.” The core principle of the reconstruction of the labor market in accordance with the spirit of “new liberalism” was “flexibility.” According to this principle, workers should be possible to be laid off whenever necessary. Rather than regular full-time workers, part-time or temporary workers have been preferred in various work places by owners.

This effort to reconstruct the labor market might succeed in creating a number of new jobs available at the societal level. Also, the highly soared unemployment rate gradually declined. This might be the positive result of the reconstruction of the labor market. But the barrier to the entrance into the labor market for younger people is still so high that they always have to undergo a kind of “war” to find a job in the labor market. On the other hand, the condition of labor or job status has become deteriorated and unstable. The concept of lifetime job has suddenly gone away in Korea since the economic crisis. The spread of part-time or temporary jobs made it impossible for people to settle down at a work place. The fear of unexpected layoff made people adopt a new way of life different from that before the economic crisis. Loyalty to the work place or commitment to their task has been weakened remarkably.

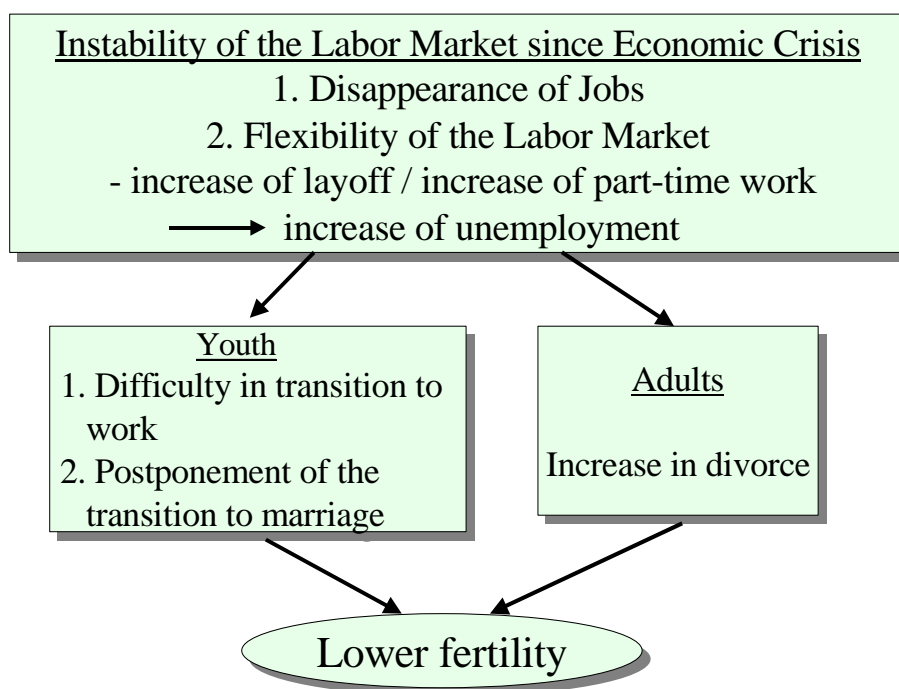
Who has been the most victim of the changing labor market since the economic crisis? It is usually youths. Under the economic hardship, most work places want workers with various experiences who need not additional training or reeducation. On the contrary, youths who are just out of school are likely to have no career or prior work experience. They usually need training or reeducation for new work places. It may take months or a year to train new comers. It is natural in the age of economic hardship that owners of corporations avoid recruiting inexperienced youths to save time and financial resources. This automatically results in higher unemployment rate for youths with insufficient experiences who have to make a transition from school to work, marriage and childbearing.

Layoff affects greatly adults' life, too. Once they are laid off, it is so difficult for them to make a reentry into work in a formal sector in Korea. The most frequent type of the transition to reentry into work is the entry into self-run small business with unpaid family labor. Because of the lack of experience in that kind of work for them, and of fierce competition in the fields, however, self-run small business is highly likely to fail. This inevitably worsens economic difficulty for them, which is likely to make their marital life end in divorce. Soaring rate of divorce since the economic crisis is sure to reflect this situation in Korea.

My model is based on the above discussions. In this model, I assume the changing labor market as the most significant factor in explaining rapid decline of fertility. This affects the life of both youths and adults. As for youths, they are likely to face the difficulty in the transition from school to work. Less jobs at the societal level sometimes make it impossible for youths to transit to work after schooling. Although they succeed in making a transition to work, the job is likely to be part-time or temporary. Korean male with a part-time or temporary

job, who still assumes the role of breadwinner, inevitably hesitates to make a transition to marriage. High cost of housing also aggravates the possibility of the transition to marriage for single males who are usually in charge of arranging a house before marriage in Korea.

Figure 4 A New Model for Recent Fertility Change in Korean Society



As for Korean females, they have become independent economically with increasing educational attainment and by participation in the labor market. Their attitude towards marriage and family is also undergoing a huge change. Most Korean females do not like to be lifetime single, but also do not like to hurry into marriage even when they pass so-called “appropriate age at marriage.” Social norm on age at marriage has greatly weakened nowadays in Korean society. More significant in relation to the declining marriage for Korean females is that the number of “marriageable” male has become less and less since the economic crisis. Although younger females want to get married, they are difficult to find “marriageable” males who are at least comparable with them or in better conditions. So Korean females also have difficulty in the transition to work, marriage and childbearing as males do.

As for divorce, I will not repeat my discussion because I already mentioned above. It is noteworthy that divorce should be considered in future research on fertility decline in Korea although the impact is rather small.

5. Analysis

At this moment, it is not easy to prove my hypothesis emphasizing the impact of the changing labor market on fertility decline since the economic crisis in Korea. Above all, I need data that shows the trends of the transition to work, marriage and childbearing at the individual level. But there is no such data available at this moment. I rather like to prove my hypothesis using some aggregate data although my discussion is limited.

The following Table 5 shows the trends of age at marriage in Korea for both males and females. Mean age at marriage for both males and females has been increasing as if there is no limit. Most Korean demographers predicted in the 1980s that age at marriage would not increase so much because they thought it would already reach the ceiling of age at marriage. But their predictions have been proved wrong. For ten years in the 1980s, mean age at marriage increased for both males and females by 1.4 and 1.6 years, respectively. Age at marriage never stopped growing in the 1990s, either. What is interesting is that the increase of age at marriage in the 1990s was accelerated in the latter half of the 1990s. In particular, it is tremendous since the economic crisis. Age at marriage in 2002 is at a record high, 29.8 for males and 27.0 for females.¹ But it is more probable that this record high age at marriage will be renewed with much higher age at marriage in 2003 and afterwards unless the economic situation affecting the transition to marriage for males and females changes positively. This rapidly increasing age at marriage since the economic crisis is an evidence to support my hypothesis.

Table 5 Singulate Mean Age at Marriage in Korea, 1981-2002

Year	Male	Female	Difference
1981	26.4	23.2	3.2
1985	27.0	24.1	2.9
1990	27.8	24.8	3.0
1991	28.0	24.9	3.1
1992	28.1	25.0	3.1
1993	28.1	25.1	3.0
1994	28.3	25.2	3.1
1995	28.4	25.4	3.0
1996	28.4	25.5	2.9
1997	28.6	25.7	2.9
1998	28.9	26.1	2.8
1999	29.1	26.3	2.8
2000	29.3	26.5	2.8
2001	29.6	26.8	2.8
2002	29.8	27.0	2.8

Source: KNSO(2001:20, Table III-10); KNSO(2003).

¹ Japan is no exception to this. See Retherford et al. (2001).

The increasing age at marriage reflects the growing proportion of single for both males and females. Following Tables 6 and 7 show respectively how proportion of single has been changing for both males and females in Korea.

Table 6 Proportion of Single for Male by Age in Korea, 1970-2000

Age	1970	1975	1980	1985	1990	1995	2000
15-19	99.7	99.7	99.8	99.9	99.9	99.8	99.7
20-24	92.6	92.9	93.1	94.4	96.4	96.3	97.5
25-29	43.4	47.0	45.2	50.7	57.3	64.4	71.0
30-34	6.4	7.0	7.3	9.4	13.9	19.5	28.1
35-39	1.2	1.4	1.7	2.7	3.8	6.6	10.6
40-44	0.4	0.5	0.7	1.1	1.5	2.7	4.9
45-49	0.2	0.3	0.4	0.6	0.8	1.3	2.4

Source: KNSO, 1960-2000.

Table 7 Proportion of Single for Female by Age in Korea, 1970-2000

Age	1970	1975	1980	1985	1990	1995	2000
15-19	97.1	97.4	98.2	99.1	99.5	99.2	99.3
20-24	57.2	62.5	66.1	72.1	80.5	83.3	89.1
25-29	9.7	11.8	14.1	18.4	22.1	29.6	40.1
30-34	1.4	2.1	2.7	4.2	5.3	6.7	10.7
35-39	0.4	0.7	1.0	1.6	2.4	3.3	4.3
40-44	0.2	0.3	0.5	0.7	1.1	1.9	2.6
45-49	0.1	0.2	0.3	0.4	0.6	1.0	1.7

Source: KNSO, 1960-2000.

It is clear that proportion of single for both males and females has increased greatly during the fertility transition until the late 1990s. But we must note that proportion of single in thirties for males and in twenties and early thirties for females began to increase tremendously between 1995 and 2000. For example, the proportion of single for females aged 25-29 was 29.6 in 1995. However, it jumped up to 40.1 for the same age group in 2000. For males, the proportion of single aged 30-34 was 19.5 in 1995, but increased to 28.1 in 2000.

Why do age at marriage and proportion of single increase so much in recent years? Can we regard these as proving my hypothesis that the transition to marriage has been retarded or delayed because of the economic hardship? Then, we need to prove that economic situation for youths has been aggravated in recent years. The following Tables 8 and 9 show the trends of unemployment rate for both males and females, respectively.

Table 8 Unemployment Rate for Male by Age, 1995-2001

Age	1995	1996	1997	1998	1999	2000	2001
15-19	9.1	8.9	11.6	25.3	22.5	14.5	14.7
20-24	7.7	8.2	8.9	19.6	13.6	12.4	11.5
25-29	3.7	4.2	4.9	11.1	10.5	6.9	7.1
30-34	1.7	1.8	2.3	6.3	6.2	4.3	3.6
35-39	1.7	1.4	1.8	6.1	5.2	3.5	3.3
40-44	1.4	1.4	1.7	6.1	5.6	3.4	3.3
45-49	1.3	1.3	1.5	6.5	6.0	4.2	3.2
50-54	1.2	1.4	1.6	6.9	6.4	3.4	3.3

Table 9 Unemployment Rate for Female by Age, 1995-2001

Age	1995	1996	1997	1998	1999	2000	2001
15-19	7.5	6.6	8.7	17.5	17.0	12.7	12.4
20-24	4.9	4.4	6.2	11.9	10.7	7.6	7.4
25-29	1.9	2.0	2.8	6.5	5.3	3.8	3.9
30-34	0.8	0.9	1.6	5.0	4.7	2.7	2.4
35-39	0.8	0.8	1.6	4.7	4.4	2.5	2.2
40-44	0.7	0.8	1.7	4.7	4.6	2.9	2.4
45-49	0.5	0.5	1.0	3.8	3.6	2.2	1.8
50-54	0.3	0.5	0.9	3.8	3.2	1.9	2.1

As anybody can expect, the unemployment rate soared between 1997 and 1998 because of the impact of the economic crisis that began in 1997. The unemployment rate more than doubled for all age groups regardless of sex between 1997 and 1998. Although unemployment rate has been decreasing after 1997, it is still high.

Because of the custom of age discrimination in employment, those who once lose the opportunity to be employed right after schooling are very hard to find a job in a formal sector next time. In fact, there are a number of youths who are not employed right after schooling, and consequently face the barrier of age discrimination in entering the labor market afterwards in Korean society. A significant part of those who fail to enter the labor market right after schooling are likely to give up employment. These youths who do not seek employment any more are usually omitted in calculating unemployment rate by the government. This inevitably leads to underestimate of unemployment rate in Korea. Considering this custom in calculating employment, we can assume easily that the real unemployment rate for youths after the economic crisis has been higher than that calculated by the government.

The trends of high unemployment rate for youths since the economic crisis indicate that Korean youths have had difficulty in the transition from school to work. Although some younger people succeed in the transition to work, their jobs are likely to be part-time or temporary because the proportion of part-time

and temporary jobs has surpassed that of regular full-time jobs in the labor market since 1999. All these conditions are sure to make Korean youths delay the transition to marriage.

6. Conclusion

Korean society has experienced a lowering fertility even after she completed fertility transition in the 1980s. Total fertility rate in 2001 was 1.3. It is expected that TFR would be lowered below 1.3 afterwards. Nobody knows how low the fertility will decrease in Korea in the future.

Demographers and social scientists have explained the mechanism of lowering fertility in Korea as well as in other Asian societies by the “traditional” way in terms of educational attainment of women, women’s participation in the labor market, changing family values, for example. I do not deny that the “traditional” way of explanation has been significant in understanding long-term fertility transition from high to low fertility in Korea. However, this “traditional” model is not sufficient to understand the recently sharp decline of fertility in Korea. Neither is it in other Asian societies.

We must note that recent low fertility is to some extents attributed to the “tempo” effects as Bongaarts, Kohler and other demographers already indicted mainly in the context of developed countries (Bongaarts, 1999, 2002a, 2002b; Bongaarts and Feeney, 1999; Kohler and Philpov, 2001; Kohler, Billari and Ortega, 2002). Tempo changes usually mean that timing of childbearing has been delayed in recent years. First of all, age at marriage began to increase sharply. In addition, first birth interval has increased for recent marriage cohorts in Korea (Eun, 2001). These changes in timing of childbearing directly affect the “period” fertility, which results in lowering fertility in Korea.

As long as the currently lower fertility is mainly due to changing tempo of childbearing, we need to concentrate on factors that cause changes in age at marriage and timing of childbirth. In this research, I assume that the increasing age at marriage is caused by the difficulty in the transition to marriage followed by the difficulty in the transition to work by both young males and females, not by changing family values or by increasing participation in the labor market by women. The difficulty in the transition to work and marriage comes from an enormous transformation in the labor market that began after the economic crisis. As the labor market becomes flexible, part-time and temporary jobs surpasses regular full-time jobs nowadays. Layoff is possible whenever necessary by owners. The number of jobs becomes less and less, on the one hand, because of the worsening economic situation and, on the other hand, due to the developing information technology. All these conditions have made it difficult for youths to make a transition to work first, and then to marriage and childbearing.

The impact of the economic crisis is in fact wide in everyday life of ordinary people in Korea. Fertility is no exception to this. Nonetheless, the impact of the economic crisis on fertility decline has never been appropriately dealt with in prior demographic research on low fertility. The cause of currently lowering fertility in Korea is rooted in the difficulty in the transition to work, marriage and

childbearing for both males and females, which is the direct result of the transformation of the labor market since the economic crisis. This is why I propose a new model for understanding recent fertility decline in Korea in this research.

Appendix

Appendix 1 Proportion of Female Married by Age, 1970-2000

Age	1970	1975	1980	1985	1990	1995	2000
15-19	2.8	2.6	1.7	0.8	0.5	0.8	0.7
20-24	42.3	37.2	33.7	27.8	19.5	16.7	10.7
25-29	88.4	86.8	84.9	80.9	77.3	69.9	59.1
30-34	94.6	94.4	94.3	93.3	92.4	91.4	86.9
35-39	92.0	93.2	93.4	93.3	92.8	92.2	90.7
40-44	84.8	88.2	90.1	90.4	90.3	90.1	88.9
45-49	76.8	79.1	83.1	85.9	86.1	86.4	86.1

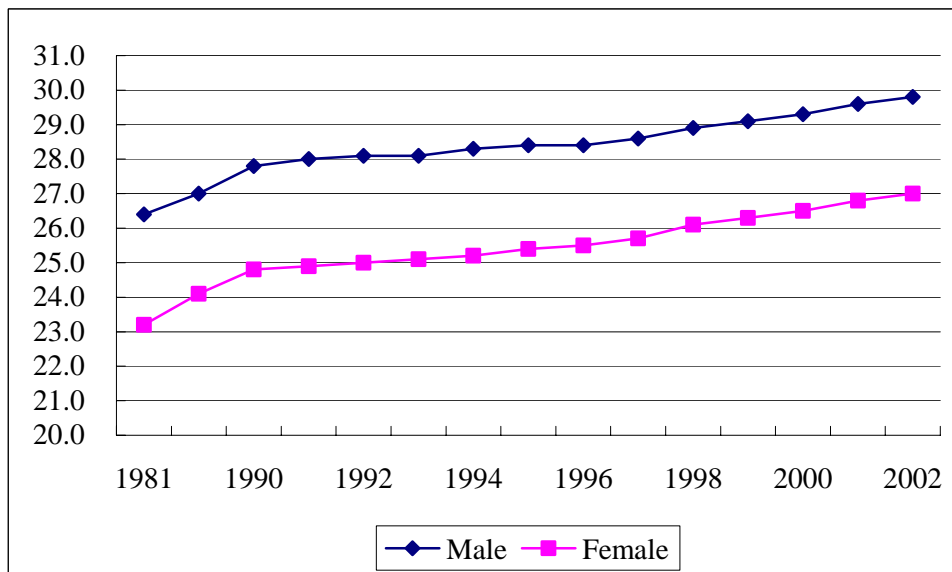
Appendix 2 Proportion of First Birth by Duration of Marriage in Korea, 1992-2001

Duration	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<2 Years	84.1	82.8	81.5	82.9	83.4	82.6	81.0	79.9	77.5	76.5
2-3	12.2	12.5	13.4	12.6	12.2	12.9	14.4	15.1	16.8	17.2
4-5	2.2	2.8	3.1	2.6	2.5	2.6	2.6	2.9	3.5	3.9
6-9	1.1	1.4	1.5	1.3	1.4	1.4	1.5	1.6	1.7	1.9
10+	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total	100.0	100.0	100.0	99.9	100.0	100.0	100.0	100.0	100.0	100.0

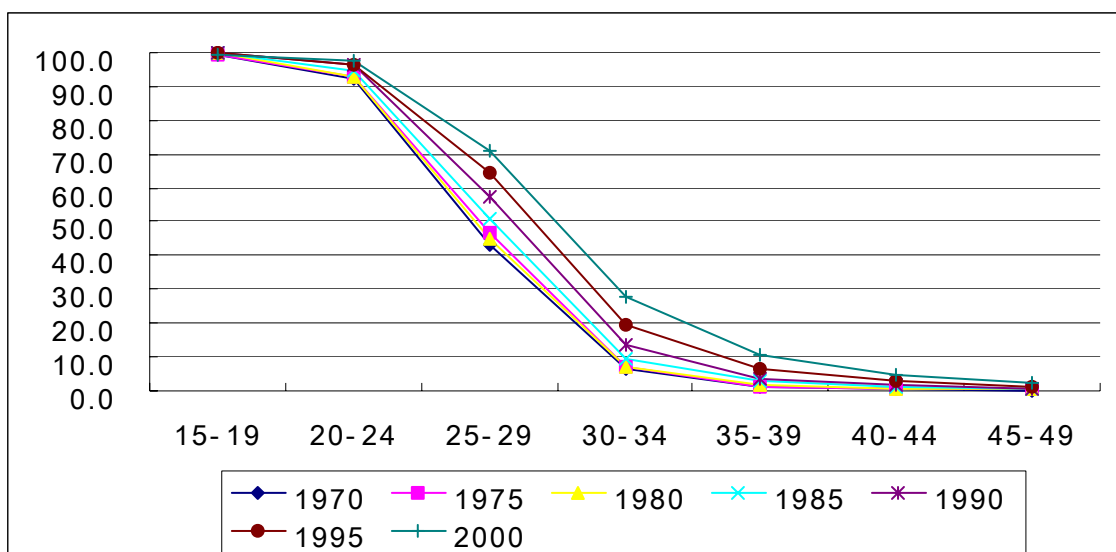
Appendix 3 Trends of Reasons of Divorce, 1992-2001

Reason	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Conflict between Couple	86.2	84.8	83.1	83.0	83.2	82.3	80.7	80.2	74.5	74.0
Economic Reasons	1.9	2.4	2.8	2.9	3.5	4.3	6.6	7.0	10.7	11.6
Health Problem	1.3	1.2	1.1	1.0	1.0	1.0	0.9	0.9	0.9	0.7
Others	10.6	11.6	13.0	13.1	12.3	12.4	11.8	11.9	13.9	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

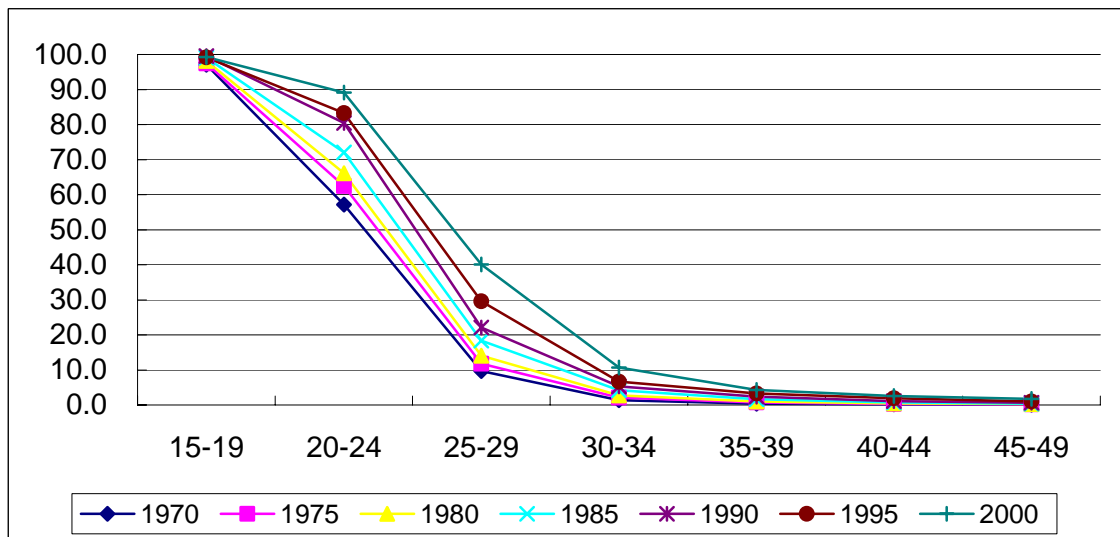
Appendix 4 Singulate Mean Age at Marriage, 1981-2002



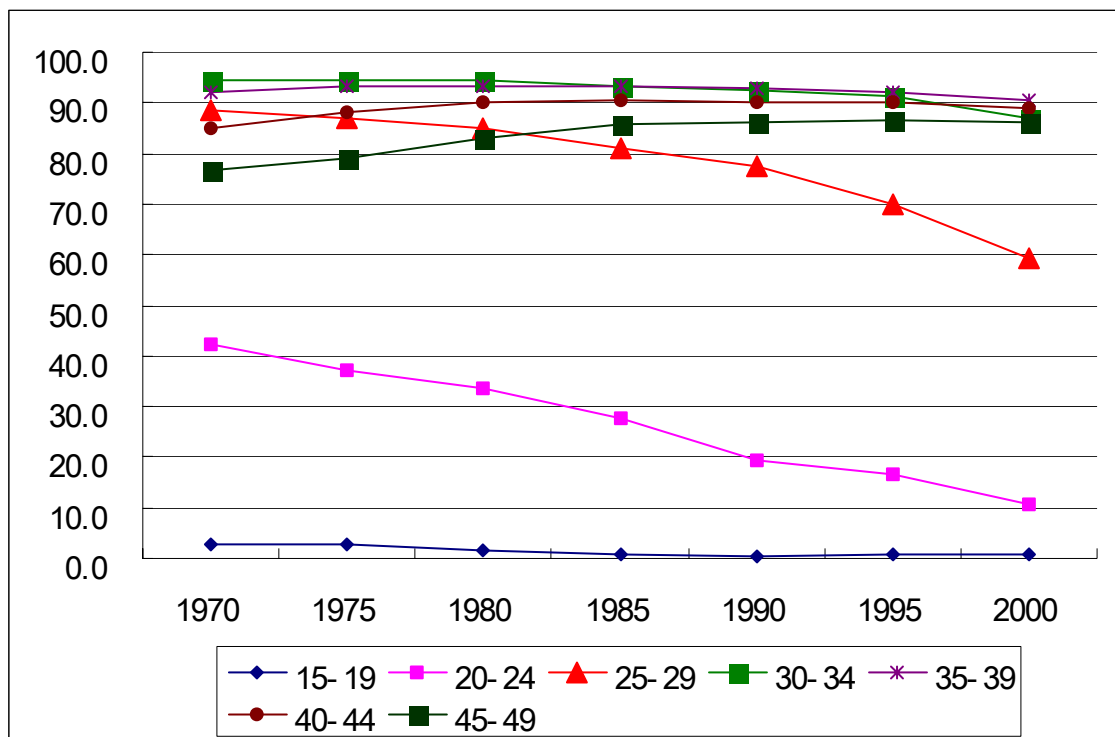
Appendix 5 Proportion of Single for Male by Age in Korea, 1970-2000



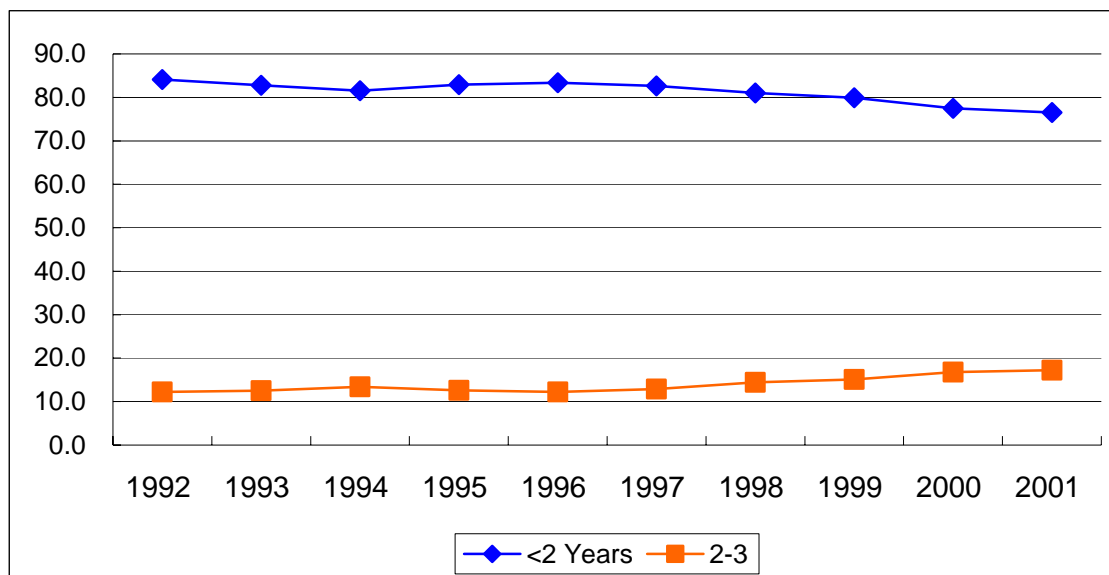
Appendix 6 Proportion of Single for Female by Age in Korea, 1970-2000



Appendix 7 Proportion of Female Married by Age, 1970-2000



Appendix 8 Proportion of First Birth by Duration of Marriage in Korea, 1992-2001



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