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No.22

Induced Abortion in Japan  
--- A Demographic Analysis of Its Trends and Causes ---

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September 2008



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### Abstract

In Japan, the rate of induced abortions per 1,000 women aged 15-49 has dropped dramatically from 50.2 in 1955 to 10.3 in 2005. However, the causes of this change have been little studied thus far.

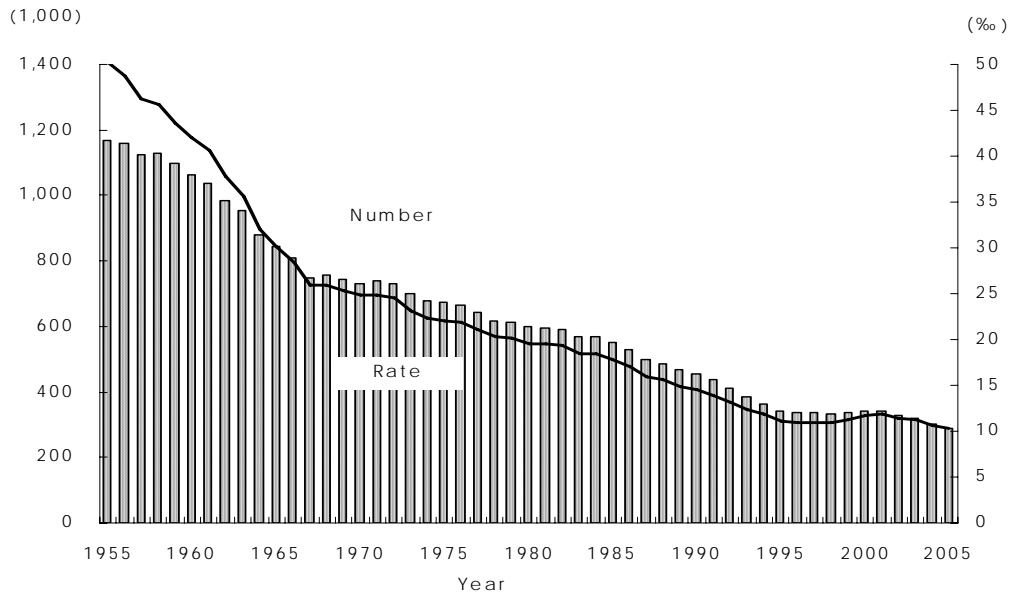
As a first step in our statistical analysis, we analyzed the change in the rate of induced abortions in terms of changes in pregnancy rates and changes in the abortion ratio. The twin factors in the decline in abortions, namely the overall decline in pregnancy and the decline in women choosing abortions, represented a 50-50 balance between 1955 and 1975, but shifted to about 70-30 between 1975 and 2005. On this background, we discussed such changes in sexual and reproductive behavior among Japanese women as the decrease in the numbers of desired children, the spread of family planning without the pill, and the recent trend towards postponing marriage and childbearing, in conjunction with unchanging social and cultural structures against cohabitation and extramarital birth.

### 1. Context

In Japan, induced abortion was legalized in 1948, and its annually reported number promptly increased to a record high of 1.17 million abortions in 1955 (Figure 1). Since that year, the number has almost continuously decreased to 289,000 in 2005. The induced abortion rate per 1,000 women aged 15-49 has dropped dramatically from 50.2 in 1955 to 10.3 in 2005 (Figure 1). Age-specific trends in induced abortion rates, from 1955 to 2005, are shown in Figure 2. For all age groups of women, the rates have almost continuously decreased, except for the rate for women younger than 20. This increasing trend of the teen abortion rate is one of the greatest concerns among adolescent health specialists. Another noticeable trend is the recent increase in the rate for women aged 20-24. The age group of women with the highest induced abortion rate has shifted from the women aged 30-34 to the women aged 20-24 (Figure 2).

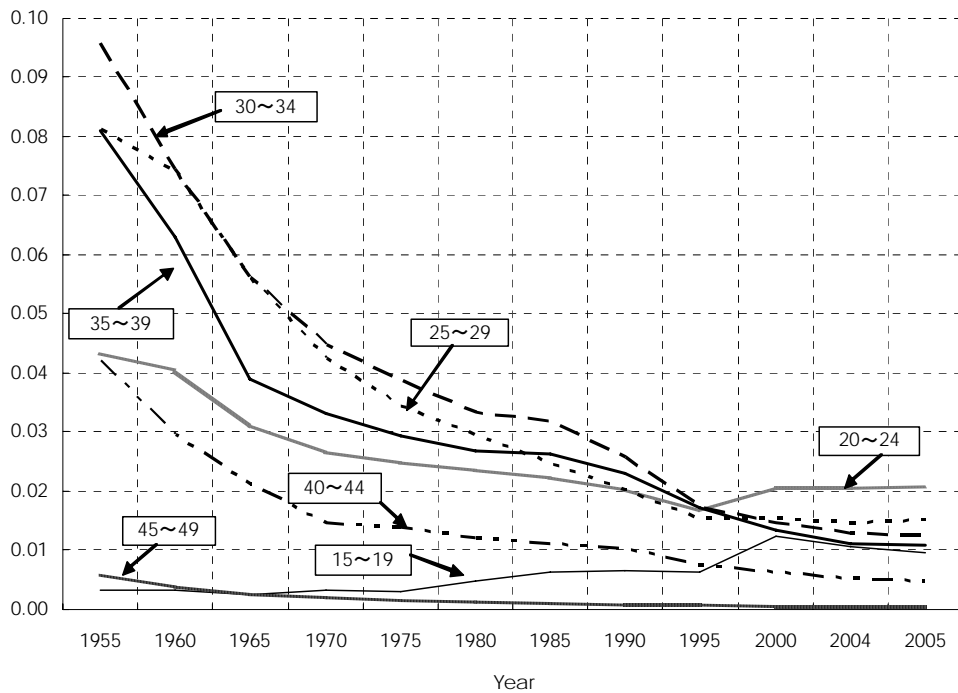
However, the causes of this change have been little studied thus far. For demographic analysis, abortion statistics in Japan are insufficient on such points in that they do not give us information on the marital status or the parity of women who choose to abort. More specifically, we cannot deny the possibility that the number of abortions is underreported. Doctors performing an abortion may not have much incentive to report it correctly as medical insurance does not cover this operation in Japan.

Figure 1. Induced abortion: number and rate, 1955-2005



Annual number of induced abortion: scaled on the left axis  
 Induced abortion rate per 1,000 women aged 15-49: scaled on the right axis  
 Source: Eugenic Protection Statistics (1955-1995), Maternal Body Protection Statistics (1996-2001), and Report on Public Health Administration (2002-2005)

Figure 2. Induced abortion rates, by age group, 1955-2005



After considering these problems, we will analyze the trends of induced abortion since 1955 with particular interest in the causes of the changes in abortion rates. For the sake of exploring the causes of the very low level of fertility in Japan today, it is highly important to examine sexuality-related behavior such as sexual intercourse, contraception, and induced abortion simultaneously and understand how Japanese women's sexual and reproductive behavior has changed. With regard to the reporting system of abortion and the levels and trends of contraception in Japan, refer to our previous report (Sato and Iwasawa 2006).

## 2. Data and Method

### 2-1. Data

For this paper, all data on induced abortions (henceforth referred to simply as "abortion"), specifically annual numbers and rates by women in five-year age brackets, come from Japanese government statistics. The name for these statistics was changed in 1996 from *the Eugenic Protection Statistics* to *the Maternal Body Protection Statistics* and in 2002 it was included into *the Report on Public Health Administration and Services*. The reporting system is basically unchanged, but since 2002, the ministry has reported the numbers and rates of induced abortions in the periods of the fiscal year. Accordingly, the reported numbers and rates for "2002" correspond to those for the period April 2002 to March 2003, and it has remained the same ever since. In this paper, we treat reported numbers and rates for the fiscal years as those for the calendar years.

Annual numbers of live births (hereafter referred to as "births") and numbers of Japanese women by 5-year age brackets also come from government statistics, specifically *the Vital Statistics* and *the Population Census*.

### 2-2. Method

As the first step of our statistical analysis, we analyze trends in the rate of induced abortion alongside the differences in pregnancy rates and the differences in abortion ratios. The method is as follows.

Where A represents the annual number of abortions, W represents the average population of women for the year, and P the annual number of pregnancies:

$$A = W \times P / W \times A / P \tag{1}$$

or,

$$A / W = P / W \times A / P \tag{2}$$

or,

$$a = p \times c \tag{3}$$

Here, a, p, and c represent the "abortion rate," the "pregnancy rate" and the "abortion ratio," respectively. Although it is difficult to take into account all pregnancies, including unobserved pregnancies, in practical terms we can regard the sum of the number of births and the number of abortions as the number of pregnancies (Note 1).

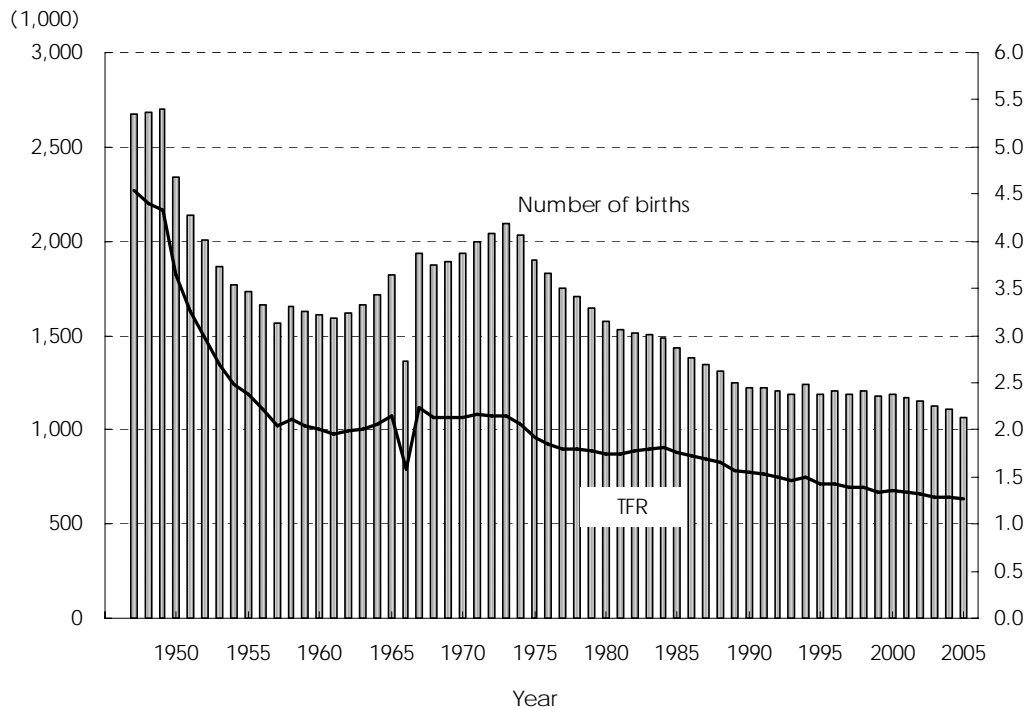
The difference between the abortion rate in year x,  $a(x)$  and the abortion rate in year y,  $a(y)$  is decomposed in a way shown below, using the pregnancy rate in year x,  $p(x)$  the pregnancy rate in year y,  $p(y)$  the abortion ratio in year x,  $c(x)$  and the abortion ratio in year y,  $c(y)$

$$\begin{aligned}
 a(x) - a(y) &= (p(x) - p(y)) \times \frac{c(x) + c(y)}{2} \\
 &+ (c(x) - c(y)) \times \frac{p(x) + p(y)}{2} \quad (4)
 \end{aligned}$$

Here, as regards the change in abortion rates between year x and year y (the left side of the above equation), we consider that the first term and the second term of the right side as the contribution of the change in pregnancy rates and the contribution of the change in abortion ratios, respectively (Note 2).

We calculate a, p and c for the census years (from 1955 to 2005, by five-year intervals). For these calculations, we use statistics on the female population of Japan, divided into five-year age brackets as of October 1 of each year based on the population census (for W) and reported number of abortions and births by each 5-year age bracket based on government statistics (for A and P).

Figure 3. Number of births and total fertility rate, 1947-2005



Annual number of birth: scaled on the left axis  
 Total fertility rate: scaled on the right axis  
 Source: Vital Statistics and the National Institute of Population and Social Security Research



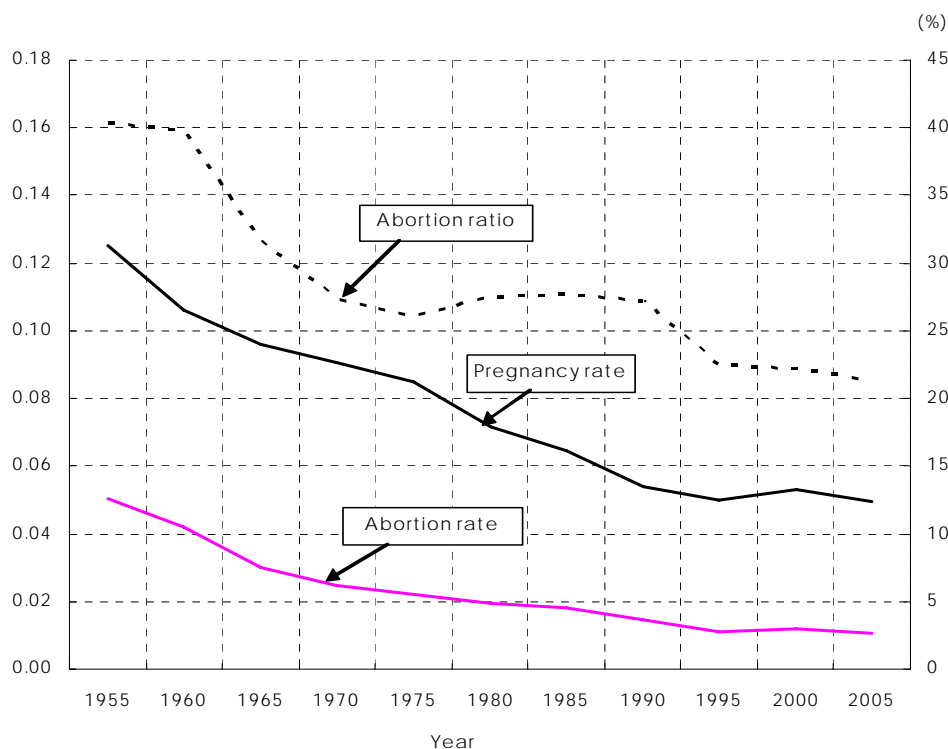
First we analyze the rate between 1955 and 2005. Then, dividing the whole period into two periods, we analyze the rate between 1955 and 1975 and between 1975 and 2005. The reason why we divide the post-war period at the 1975 point is that the total fertility rate (TFR), which had been approximately at the replacement level (about 2.1) between the late 1950s and the early 1970s, began a continuous decline in the mid 1970s, as shown in Figure 3. It dropped to a record low of 1.26 in 2005, which means that Japan has joined the group of the “lowest-low fertility” countries.

### 3. Results

#### 3-1. Changes between 1955 and 2005

Figure 4 shows the trends of abortion rate, pregnancy rate and abortion ratio among women aged 15-49 from 1955 to 2005. The abortion rate and the pregnancy rate (both scaled on the left axis) have declined in an almost uninterrupted fashion throughout this whole period (from 0.050 to 0.011 for abortion rate, from 0.125 to 0.050 for pregnancy rate). On the other hand, trends in the abortion ratio (percent, scaled on the right axis) display a three-phase pattern. It dropped from 40.3% in 1955 to 26.1% in 1975. After it slightly increased to 27.7% in 1985, it again decreased to 21.4% in 2005.

Figure 4. Abortion rate, pregnancy rate, and abortion ratio, 1955-2005



Abortion rates and pregnancy rates: Per 1,000 women aged 15-49, scaled on the left axis  
 Abortion ratio: percent, scaled on the right axis



To show the changes in pregnancy rate by age category (Figure 5), the pregnancy rate for women aged 25-29, maintaining the highest rate through the whole period, decreased markedly from 0.263 in 1955 to 0.101 in 2005. The pregnancy rate for women aged 20-24 has also decreased by a large margin, whereas the pregnancy rates for other age groups have remained nearly constant or even shown slight increases since the 1980s.

Trends in the abortion ratio by age category are shown in Figure 6. Until the 1960s and 1970s, there was a tendency that the higher the women's ages were, the more they chose an abortion when they became pregnant. After the 1980s, the abortion ratios among women aged 35-39, 40-44 and 45-49 have been declining, in contrast to the rising rates among women aged 15-19 and 20-24.

In the analysis of the period between 1955 and 2005 (Figure 7), the decrease of abortion rate, (0.050 minus 0.011=) 0.040 was broken up into the contribution of the decrease of pregnancy rate, 0.023 (58.5%) and the contribution of the decrease of abortion ratio, 0.017 (41.5%). The decrease in pregnancies has resulted in a reduction in abortions among women of all age groups, particularly among women aged 20-24, 40-44 and 44-49. On the other hand, the decrease in the choosing of abortion has shown itself most prominently among women aged 25-29, 30-34 and 35-39, which are the most fertile age groups.

Figure 5. Pregnancy rates, by age group, 1955-2005

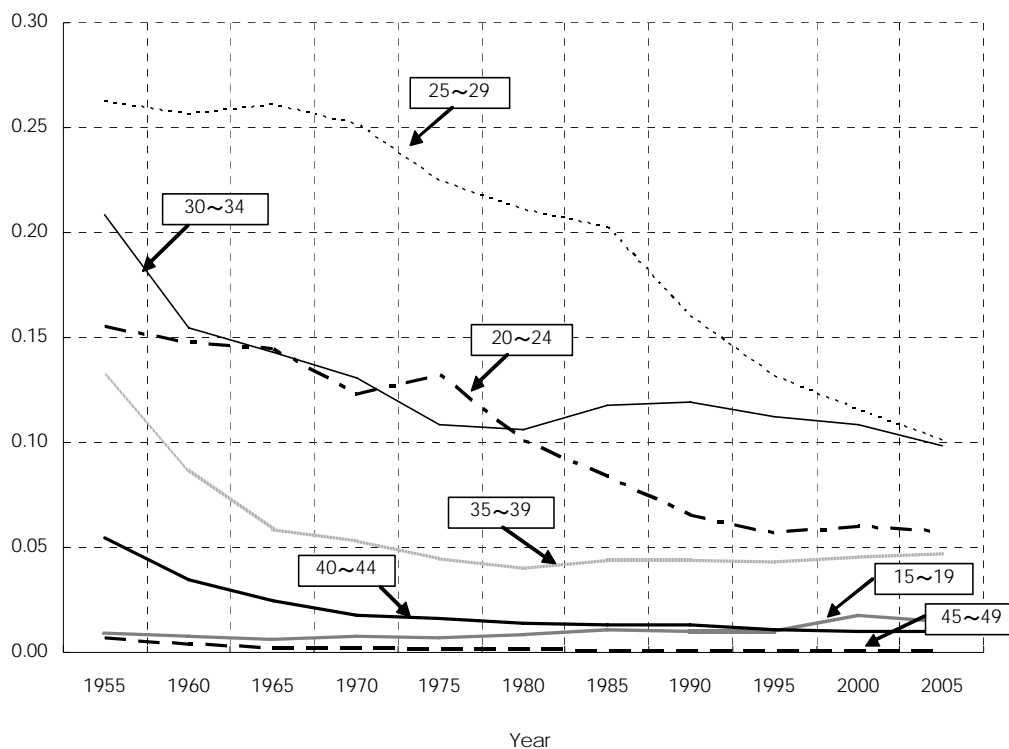


Figure 6. Abortion ratio, by age group, 1955-2005

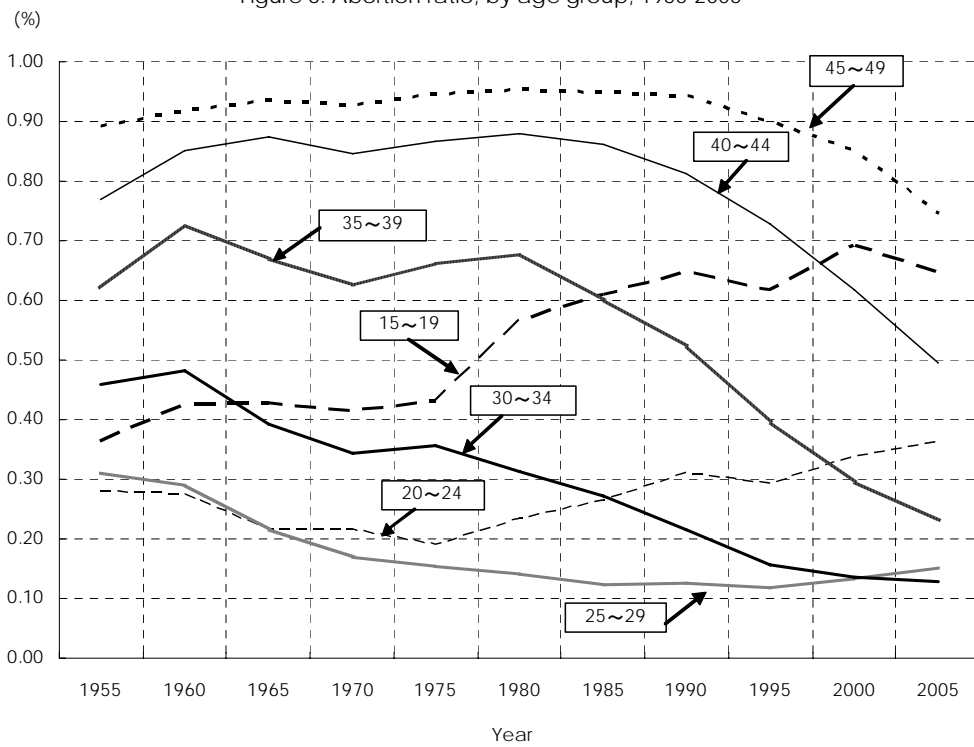
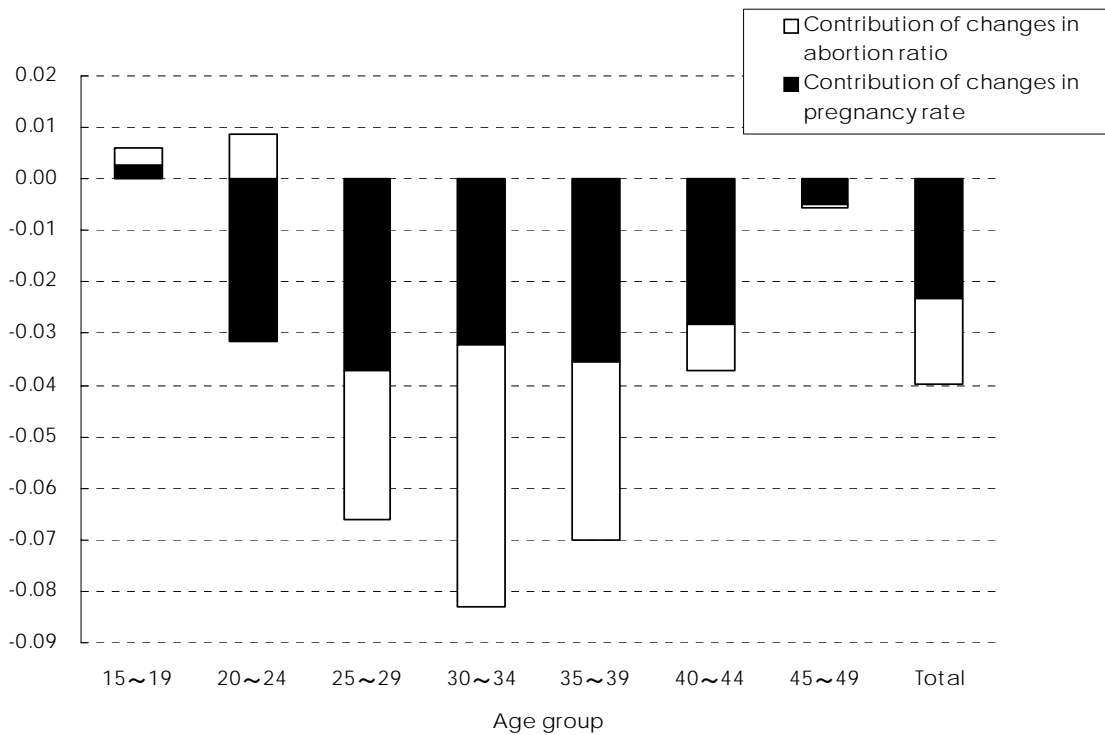


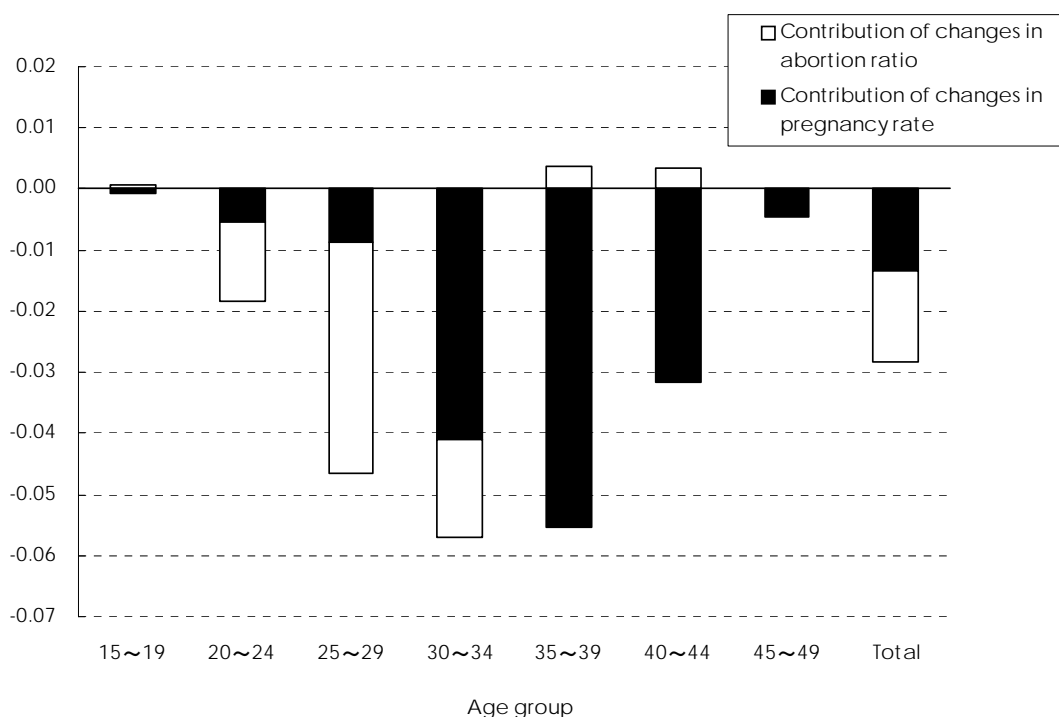
Figure 7. Analysis of changes in abortion rate between 1955 and 2005



### 3-2. Changes between 1955 and 1975

During this first period, the abortion rate among women aged 15-49 decreased from 0.050 to 0.022, while the pregnancy rate for women aged 15-49 decreased from 0.125 to 0.085, and the abortion ratio for women aged 15-49 decreased from 40.3% to 26.1% (Figure 4). By decomposition (Figure 8), the decrease in the abortion rate, (0.050 minus 0.022=) 0.028 was broken up into its contributing factors, namely the decrease of the pregnancy rate, 0.013 (47.1%) and the decrease in the abortion ratio, 0.015 (52.9%). The decrease of pregnancies had a large effect in reducing abortions among women aged 30-34, 35-39 and 40-44. Decrease in the choosing of abortion at pregnancy had a large effect on women aged 20-24 and 25-29.

Figure 8. Analysis of changes in abortion rate between 1955 and 1975

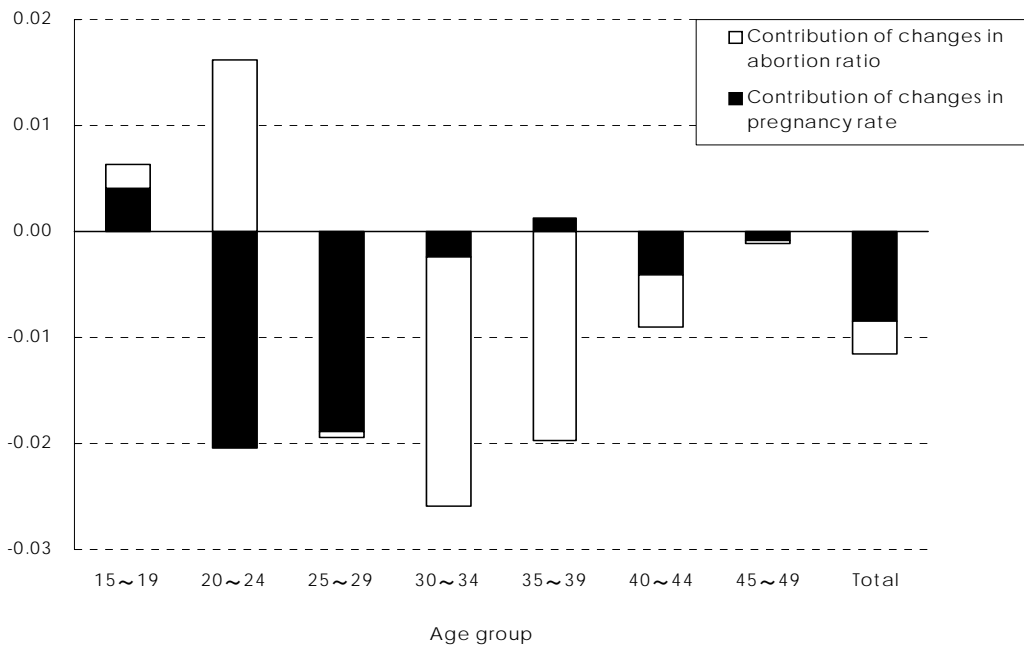


### 3-3. Changes between 1975 and 2005

During this second period, the abortion rate for women aged 15-49 decreased from 0.022 to 0.011, while the pregnancy rate for women of the same age group decreased from 0.085 to 0.050, and their abortion ratio decreased from 26.1% to 21.4% (Figure 4). By decomposition (Figure 9), the decrease in the abortion rate, (0.022 minus 0.011=) 0.012 was broken up into contributing factors of the decreasing pregnancy rate, 0.008 (72.8%) and the decreasing abortion ratio, 0.003 (27.2%). It means that to the decline in the abortion rate, the effect of the decrease of pregnancies, and the effect of the decrease of choosing abortion at pregnancy were almost same (47.1% versus 52.9%) for the first period, while the former had much larger than the latter (72.8% versus 27.2%) for the second period.

The decrease in pregnancies had a large effect on the reduction of abortions among women in their twenties, as contrasted by the decrease in women choosing abortion having large abortion-reducing effects on women in their thirties (Figure 9). Among women aged 20-24, the decrease in pregnancies and the increase in choosing abortion at pregnancy had the opposite effect, resulting in a decrease in the abortion rate because of the former's superiority to the latter. Among women aged 15-19, pregnancies and voluntary abortions both increased, resulting in an increased abortion rate. Meanwhile, among women aged 40-44, pregnancies and abortions both decreased, resulting in a decreased abortion rate.

Figure 9. Analysis of changes in abortion rate between 1975 and 2005



#### 4. Discussion

The below-mentioned factors are all related to pregnancy rates and the abortion ratio (the proportion of pregnant women choosing abortion).

- A. Factors related to the occurrence of pregnancy (pregnancy rate)
  - 1. Factors related to frequency of sex
    - 1) Proportion of women engaging in sexual unions
      - (1) Proportion of women married
      - (2) Proportion of unmarried women engaging in sexual unions
    - 2) Frequency of sexual intercourse among sexual unions
  - 2. Factors related to contraception and the probability of conception
    - 1) Contraceptive prevalence and effectiveness  
and bio-demographic probability of conception
    - 2) Behavioral factors related to (effective) contraceptive use
    - 3) Social factors related to (effective) contraceptive use
- B. Factors related to the choosing of abortion (abortion ratio)
  - 1. Fertility intentions among couples (desired number of children, timing, etc.)
  - 2. Relationship with partner (married or unmarried)
  - 3. Consciousness in regards to fetus (congenital abnormalities, sex selection, etc.)
  - 4. Maternal health
  - 5. Psychological or ethical attitude toward induced abortions
  - 6. Availability of or access to induced abortion

Within this framework, we examine the trends of factors that may influence changes in the abortion rate through changes in the pregnancy rate and the abortion ratio.

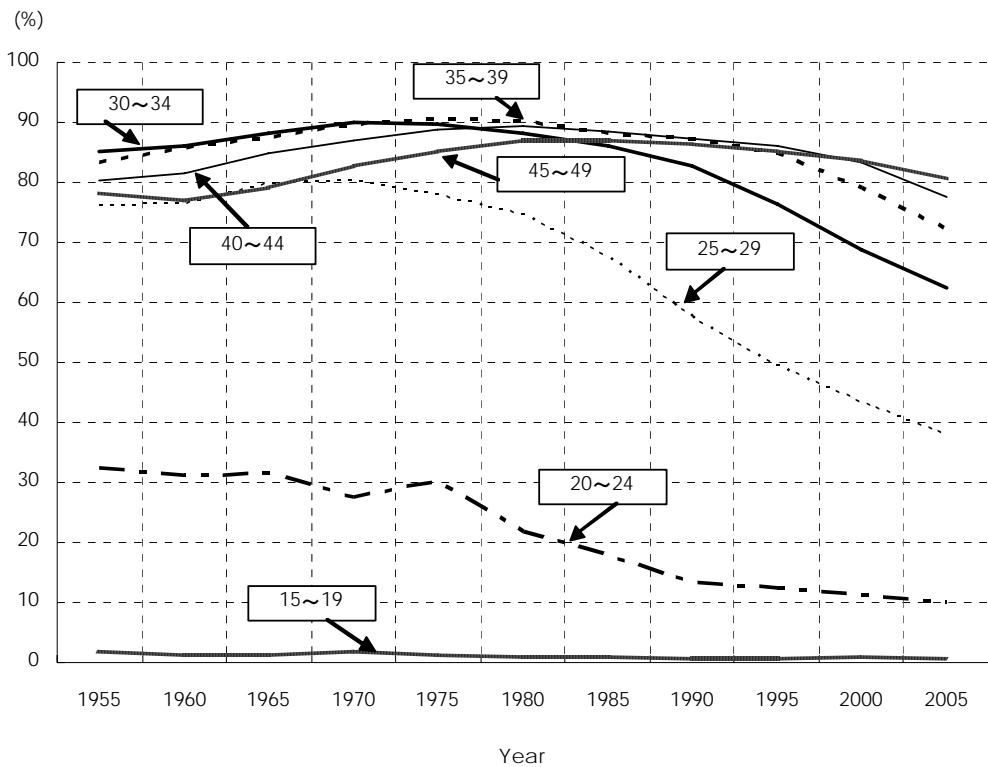
##### 4-1. Changes in partnership behavior

Since the early 1970s the number of marriages has been declining and the mean age of marriage for husbands and wives has been continuously rising. The proportion of women aged 25-29 who were married decreased from 80.4% in 1970 to 38.2% in 2005 (Figure 10). Although the recent trend of later and fewer marriages is common in most industrialized countries, one characteristic particular to Japan is the very low prevalence of cohabitation compared with Western countries. The proportion of young men and women who are living together is very low. It is 2.9% for never-married women aged 25-29, according to the JNFS in 2005 (not shown in figures).

##### 4-2. Changes in contraceptive behavior among couples

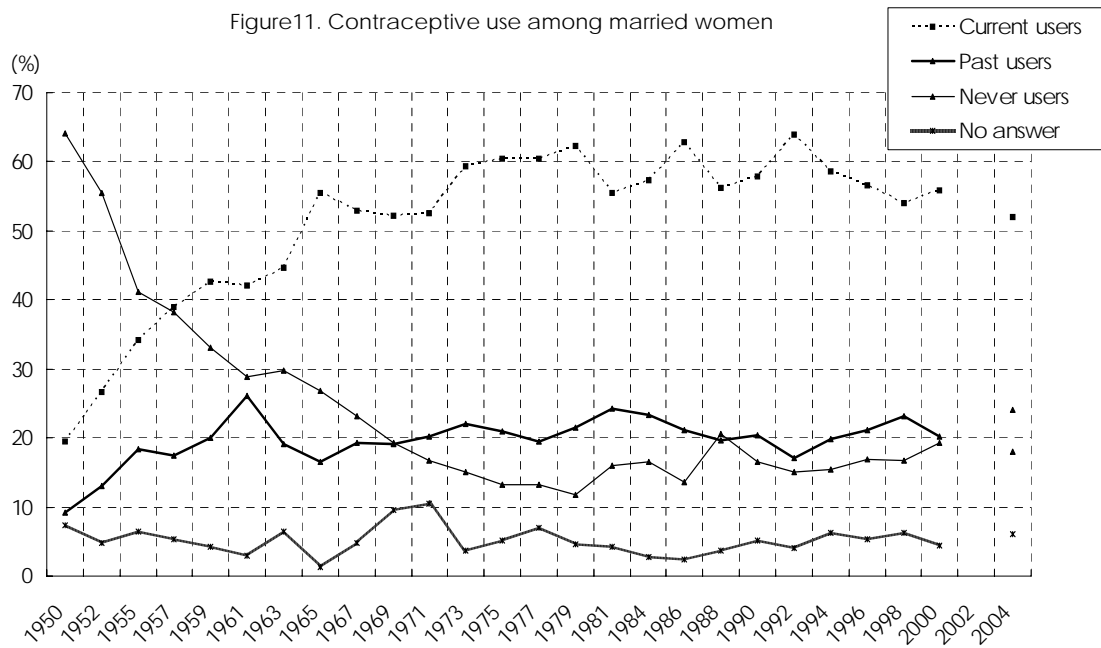
The National Survey on Family Planning (NSFP) series provides us with the trend of contraceptive use among married women of reproductive age (Figure 11). In a 1950 survey, the proportion of users of contraception was only about 20%, but by the early 1970s it had steeply

Figure 10. Proportion of women who are married, by age group, 1955-2005



Source: Population census

Figure 11. Contraceptive use among married women

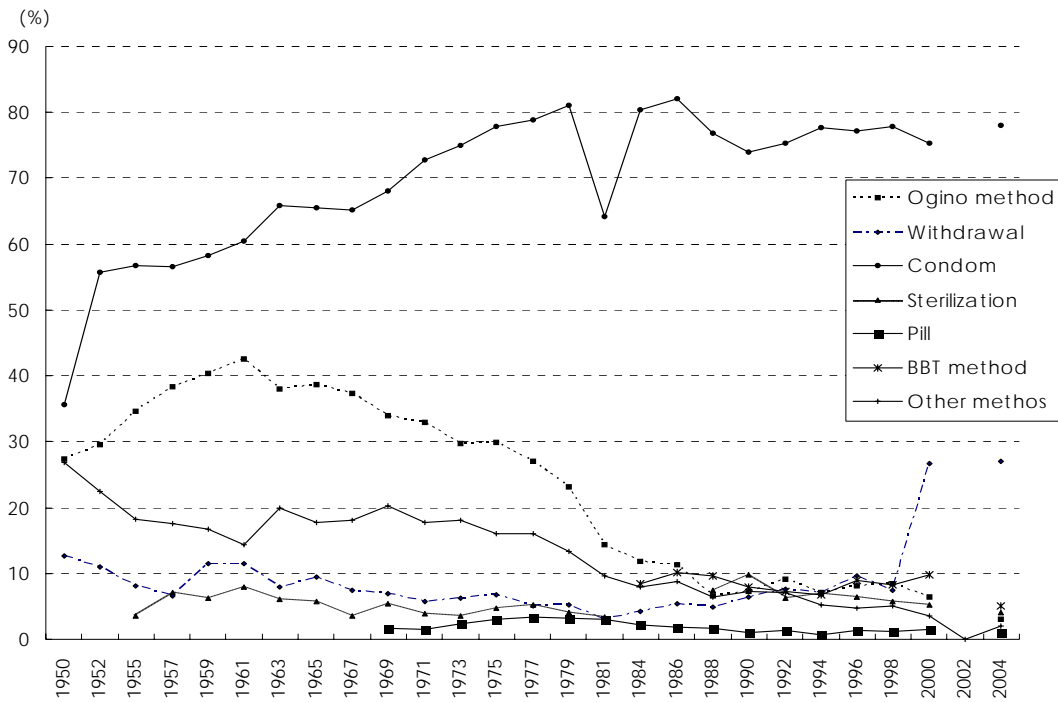


Source: National Survey on Family Planning (1950-2000) and Survey on Population, Family and Generation (2004), Mainichi Shimbun

increased to a level of about 60%, before stabilizing and remaining at this level. Its recent downward trend from 59% in 1994 to 52% in 2004 is notable. One possible reason is a change in the age-structure of married women of reproductive age. The proportion of wives in their twenties and thirties, who are assumed to be more sexually active than wives in their forties, has been decreasing remarkably due to later marriages in recent years. Moreover, we must consider a new view that the prevalence of sexlessness among couples may be increasing in present-day Japan.

Figure 12 shows trends in contraceptive methods among married women of reproductive age who were practicing contraception at the time of the survey. We must take note of this question allowing multiple choices (except 1950). As shown in the figure, the proportion of condom users has been consistently high. The proportion of users of the Ogino method has also been relatively high. On the other hand, the proportion of users of medical methods such as birth control pills, IUDs and sterilization has been extremely low (Note 3).

Figure 12. Contraceptive methods among current users (married women)



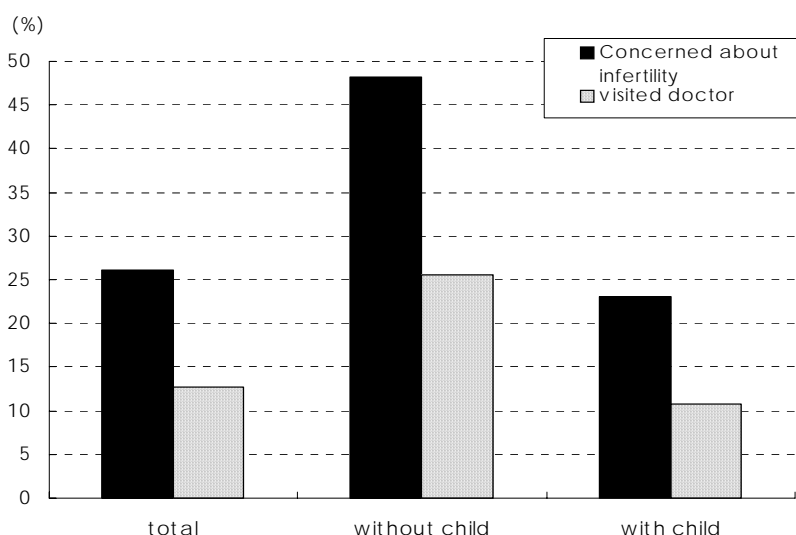
Source: National Survey on Family Planning (1950-2000) and Survey on Population, Family, and Generation (2004), Mainichi Shimbun



#### 4-3. Possibility of increase in infertile couples

Although public attention to the issue of infertility treatment including new reproductive technologies such as IVF-ET had been growing in recent Japan, there had not been any nation-wide research on the situation. The 12th JNFS, carried out in 2002, for the first time asked married couples of their concern about infertility and experiences of visiting a doctor. According to the survey, 26.1% of wives of reproductive age answered that they had been concerned about infertility (including those currently concerned about infertility at the time of survey) and 12.7% of those had visited a doctor for some kind of examination and treatment (Figure 13, the left). The corresponding percentages for wives without children were 48.2% and 25.5%, respectively (Figure 13, the middle). The corresponding percentages for wives with children were 23.1% and 10.8%, respectively (Figure 13, the right).

Figure 13. Proportion of married couples who have had concerns about infertility



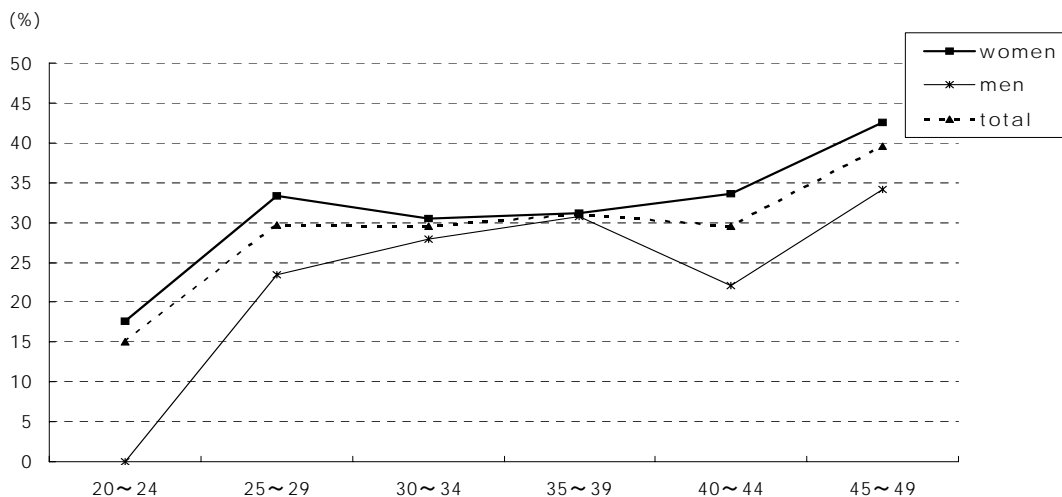
Source: The 12th Japanese National Fertility Survey, 2002

#### 4-4. Possibility of decline of frequency of sex among couples

Recently case reports of sexless couples visiting medical clinics have been attracting attention. The 2nd Survey on Life and Consciousness of Men and Women, a nationwide sexuality survey conducted in 2004, shed light on this question by measuring the frequency of sexual intercourse among Japanese couples on population base. According to the survey, the proportion of married women who had not had sexual intercourse during the past month of the survey, defined as “sexless” in this study, was 17.6%, 33.3%, 30.5%, and 31.2% for the 20-24, 25-29, 30-34, and 35-39 age brackets respectively

(Figure 14) (Kitamura 2005). From this data, we cannot deny the possibility that recently the proportion of sexless couples has increased.

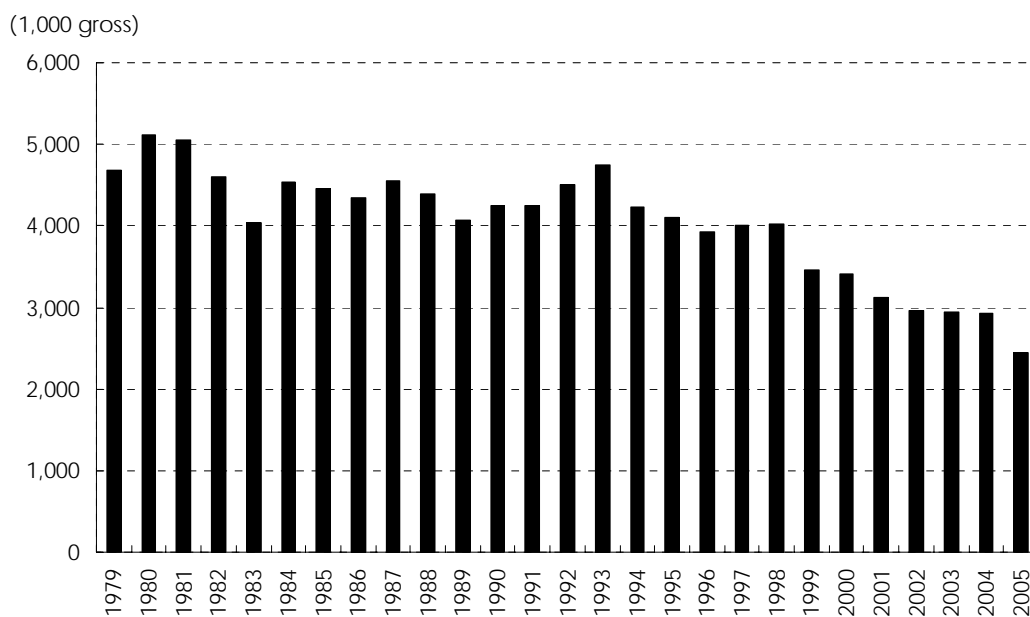
Figure 14. Proportion of sexlessness among married couples by age group



Source: Survey on Life and Consciousness of Men and Women, 2004

Another subject recently noticed by sexologists and demographers is a possible decrease in condom use. Statistics of the Ministry of Health, Labor and Welfare (the Statistics of Pharmaceutical Industry) indicates trends of the amount of condoms shipped domestically in Japan. As shown in

Figure 15. Domestic shipment of condoms (gross), 1979-2005



Source: Ministry of Health, Labor and Welfare: Statistics of Pharmaceutical Industry

Figure 15, the annual amount of domestic shipment of condoms was more than 4 million gross between 1979 and 1995, but it steeply dropped to 2.45 million gross in 2005. Because the condom has always been the predominant method of contraception, the recent decrease in the use of condoms as consumption may, in some part, reflect the decline in frequency of sex among Japanese people. The pregnancy impact of low use of effective contraceptive methods may be offset somewhat by the low frequency of sex.

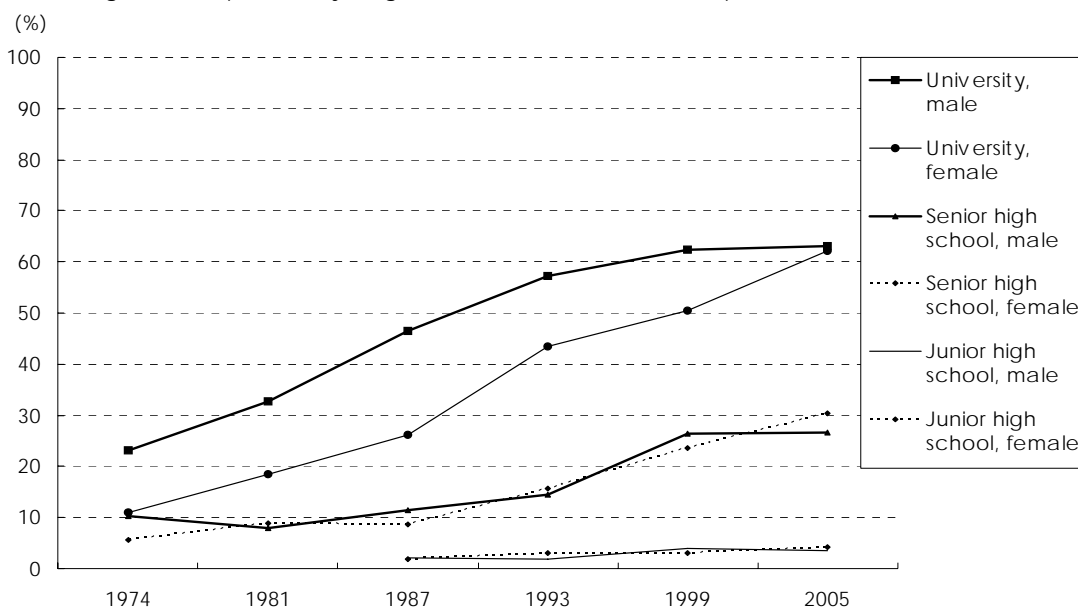
Some researchers speculate that the frequency of sexual intercourse among married couples may have decreased in Japan in recent years. A finding from the 2nd Survey on Life and Consciousness of Men and Women, as abovementioned, has backed up this speculation. Furthermore, several studies suggest that Japan is possibly among the least sexually active countries in the world, with regard to the timing of people's first instance of sexual intercourse and the frequency of sex (refer to Billari et al. 2007).

#### 4-5. Recent changes in sexual behavior among unmarried women

Although government statistics on abortion do not distinguish between married and unmarried women, we can say that the recent increase in abortion rate for women aged 15-19 and 20-24 is probably due to changes in sexual behavior among young unmarried women (the tendency to engage in sex earlier and have more sexual partners than before), because the proportion of never-married women among women aged 15-19 and 20-24 has been very high in recent years (in 2005, 99.1% and 88.7%, respectively).

According to a series of student surveys (JASE survey) conducted between 1974 and 2005, the proportion of university students who had experienced sexual intercourse increased from 11.0% to 62.2% for females, with an increase from 5.5% to 30.3% for female senior high school students (Note 4). A remarkable increase, especially in girls, is noticeable (Figure 16).

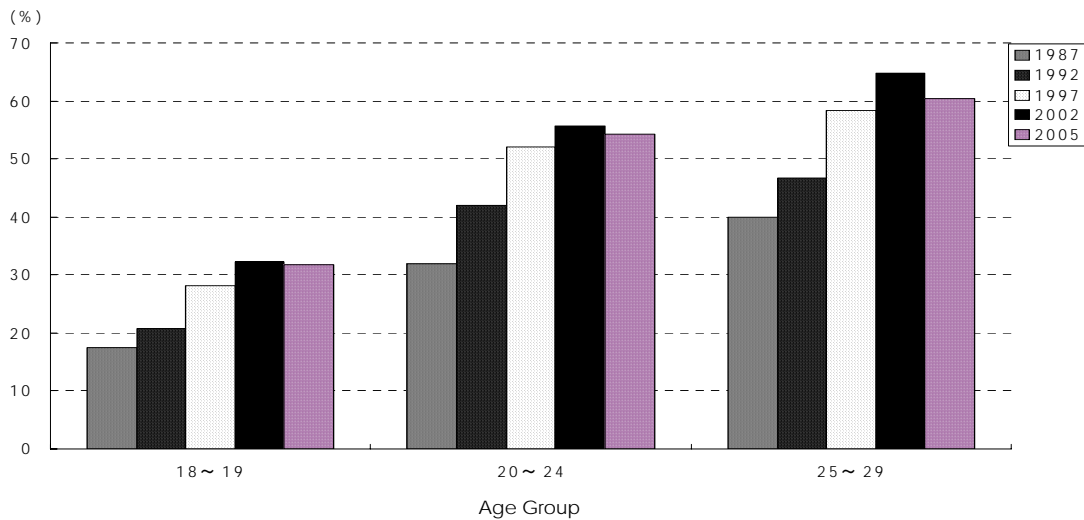
Figure 16. Proportion of young men and women who have experienced sexual intercourses



Source: Japanese Association for Sex Education: Survey of Sexual Attitude and Behaviour of Youth

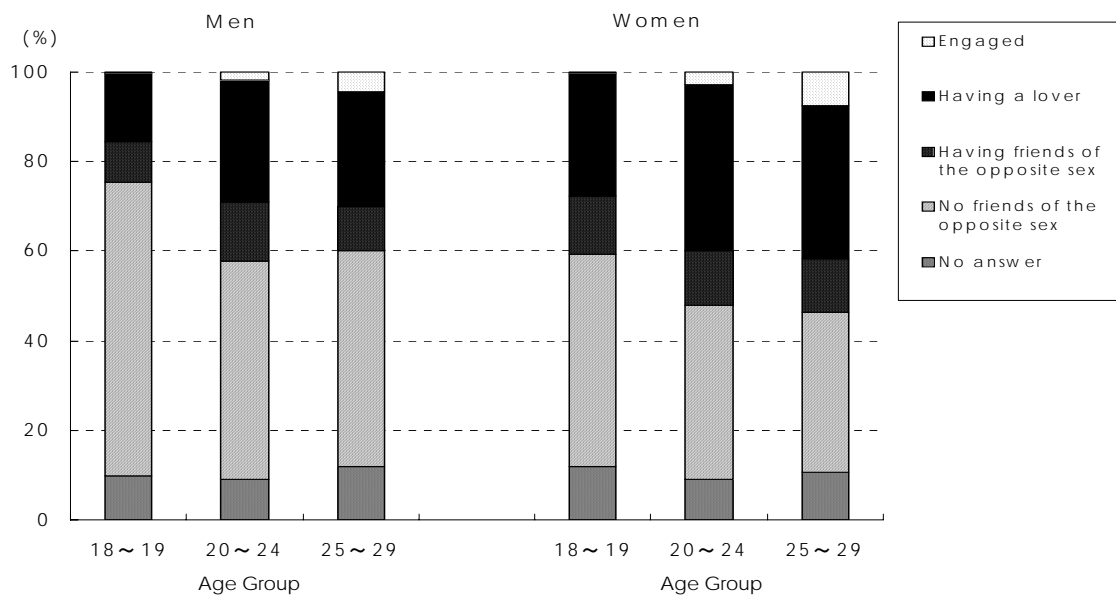
According to the JNFS, time series data of percentages of never-married women who have experienced sexual intercourse are shown in Figure 17. The percentage of never-married women who have engaged in sexual intercourse has continued to rise in every age group. The JNFS also revealed the situation of partnerships between young men and women in Japan. At the 12th survey (in 2002), as shown in Figure 18, 47.5% of never-married women aged 18-19 responded as having no friends of the opposite sex. The corresponding percentage for men was 65.4%. The situation, in which that more than about a half of youths aged 18-19 have no friends of the opposite sex, may be very unique among developed countries today.

Figure 17. Proportion of never-married women who have experienced sexual intercourse



Source: The 9th, 10th 11th and 12th 13th Japanese National Fertility Survey

Figure 18. Partnership patterns of never-married men and women



Source: The 12th Japanese National Fertility Survey, 2002

## 5. Concluding Remarks

In this paper, we have analyzed the trends and causes of induced abortion rates in postwar Japan using the pregnancy rate and the abortion ratio (the proportion of induced abortions to pregnancies) as keys to the question.

As results of our decomposition analysis of the decline in abortion rate per 1,000 women aged 15-49 from 50.2 in 1955 to 10.3 in 2005 indicate, the decline in pregnancy rate explained about 60% and the decline in abortion ratio explained about 40%. Furthermore, while the relative importance of these two contributing factors are about 50% versus 50% respectively for the period between 1955 and 1975, they represent 70% and 30% respectively for the period between 1975 and 2005.

Between 1955 and 1975, the decrease of pregnancies had a large abortion-reducing effect among women aged 30-34, 35-39 and 40-44. It may reflect a rapid spread of two children norm and ideas of family planning which came to be the norm among Japanese couples. Another noticeable point in the period is a decrease in voluntary abortions having had a large abortion-reducing effect among women aged 20-24 and 25-29. It is difficult to explain this, but we guess that the recovery of social stability from the destruction by the war may have allowed young pregnant women latitude to see their pregnancies through to birth.

As for the changes since the mid-1970s, we can conclude that the tendency to postpone marriage and childbearing among Japanese men and women has largely influenced on the occurrence of pregnancy and the choosing of abortion in the case of pregnancy. The trend towards later marriages is most definitely a contributing factor to the decrease of pregnancies among women in their twenties, which in turn has led to a decrease of the choosing of abortion among women in their thirties, due to the fact that increasing numbers of them have not achieved their desired number of children. Meanwhile, the choosing of abortion has increased among women aged 20-24 and 15-19 recently. On this background, we suppose the existence of a strong accepted social and cultural norm that unmarried men and women should not have children.

Induced abortion is still an insufficiently researched field in Japan. Having undertaken this analysis as a first step, we will move forward in our study of this field.

## Acknowledgements

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## Notes

(Note 1)

For the sake of convenience in this analysis, the time lag between pregnancy and abortion or birth has been disregarded. It would be better to use the number of induced abortions plus births six months later as the number of pregnancies (Henshaw 2003).

(Note 2)

This method of decomposition follows that of Kitagawa(1955).

(Note 3)

The very low diffusion of the pill among unmarried as well as married Japanese women deserves special mention. In fact, Japan was one of the latest countries in the world to legalize the contraceptive pill, whereas induced abortion has been legal since 1948. After the pill was first approved in the United States of America in 1960, the Japanese Ministry of Health and Welfare permitted the use of the high-dose pill as a therapeutic drug for women's disorders such as dysmenorrhea and endometriosis (not as a method of contraception, but tolerating its use for contraceptive purposes). Since that time, safer and more effective low-dose pills have spread throughout the world, but even in the 1990s the ministry hesitated to approve them for the reason that pill use could decrease condom use and lead to the spread of AIDS (based on the assumption that Japan's miraculously low prevalence of HIV infections among industrialized countries was mainly due to the very high prevalence of condom use). Behind the legal limitation on the pill seemed to be conservative attitudes connected to traditional familism, which displayed concern about female-oriented contraceptive methods leading to increasing women's initiative in sex related matters, among medical people as well as among many women (Atoh 2001). Finally, in 1999, low-dose pills became formally available for Japanese women, but there has been almost no increase in their use until now. According to the 2000 NSFP, more than 70% of married women aged 16-49 and more than 50% of never-married women in the same age bracket did not want use the pill and about 80% of them cited side effects as the reason for not being willing to use it (PPRC 2000, p.253).

Why is the pill so unpopular in Japan even after its legalization? There is a historical background in postwar Japan that the use of condoms and periodic abstinence has been promoted by family planning practitioners such as physicians and midwives and back-up abortions have been easily accessible. The negative attitudes toward the pill among health professionals must have implanted the strong image of the pill having side effects in the mind of ordinary women. Another point is the troublesome nature of using the pill. Women seeking the pill must go a gynecologist to get a prescription. Prescriptions cost at least 40,000 yen (about 380 US dollars) per year, and they are not covered by national medical insurance. In some cases, additional payments are required for examinations and tests for cancer or STDs, which are recommended by organizations of medical professionals. These money and time costs appear high compared to the international standards (Norgren 2001).

(Note 4)

Approximate corresponding ages to school years in Japan are as follows:

12-14 years old: junior high school (grade 1-3)

15-17 years old: senior high school (grade 1-3)

18-21 years old: university (grade 1-4)

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