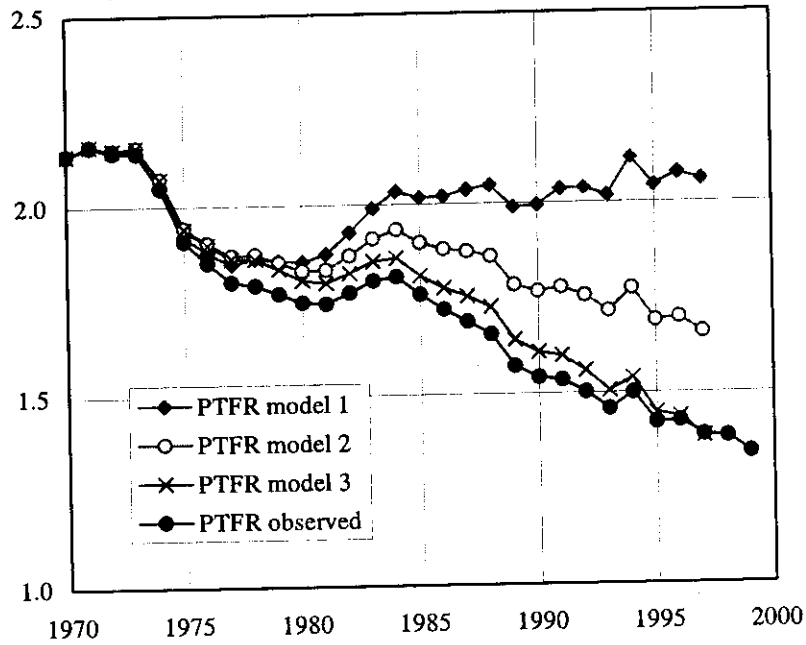
2, and $\hat{P}M_c^{DPM}(t-a,a)$ is the estimated proportion of currently married based on the mathematical formula of the Boltzmann function[6] controlling the both of age shift and prevalence parameter. Therefore, the expected period total fertility rates based on the third scenario represent the joint effect of the changes in marriage timing and in ultimate marriage prevalence along with cohorts.

For calculation, we used the vital statistics and the census results. However, the proportion of women by marital status in each age must be estimated due to the distant of the census and to the delayed and incomplete marriage registration in the vital statistics. We used the estimates by Ishikawa(2000)[7]

Figure 6 shows the results of various estimates based on the three scenarios and the observed period total fertility rate from 1970 to 1997. It can be seen that the recent fertility decline involved two different dimensions, the decline in the cohort marital fertility rates and change in the marriage formation.

Figure 6. Trends of Various Period Total Fertility Rates: observed, model 1, model 2, and model 3



From 1973 to around 1980, the decline of period total fertility can be attributed to the decline of cohort marital fertility rate. In the contrast, from 1980 to 1984, the result of calculations by scenario 1 shows a rising trend, which indicates that during this period cohort marital fertility actually increased, and the effect of the marriage delay become major in the period total fertility rates.

From 1984 to 1997, the expected fertility rates based on scenario 1 showed the tendency to become stable. Because of the assumption with no change in marriage behavior, the difference between observed PTFR and expected PTFR was brought by the change of marriage including the postponement of the marriage and the increase of time staying unmarried. When we take the effect of marriage postponement into consideration as in scenario 2, the expected PTFR declines more slowly than the observed and come to the middle between the observed PTFR and PTFR based on

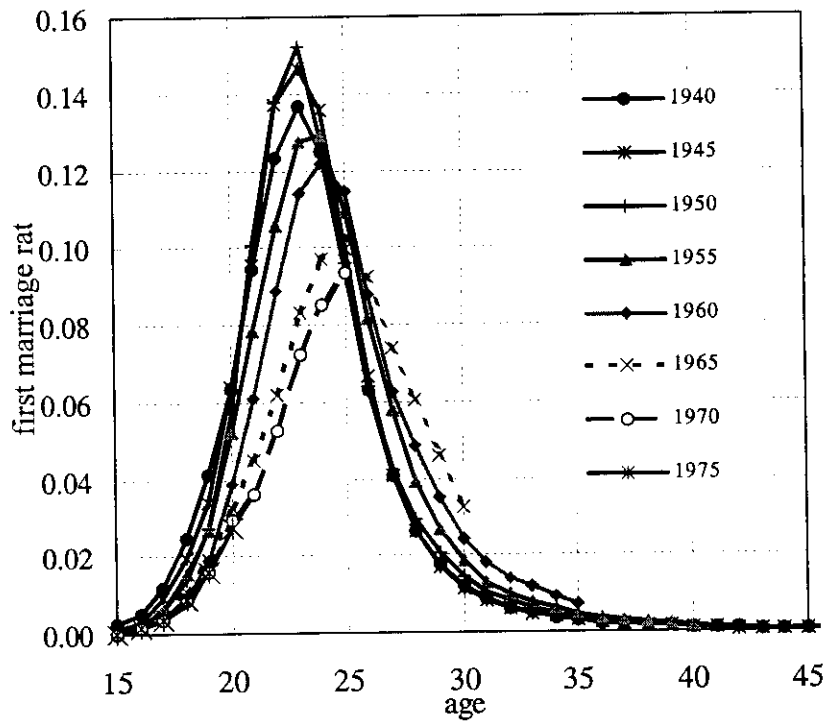
scenario 1. Accordingly, the postponement of the marriage attached strongly to the PTFR and this "tempo" effect explains half of the total decline of the actual PTFR. In addition, when we introduce the increase of the proportion never married at age 50 to the model as the scenario 3, the resulting PTFR performs very similar trend to the observed PTFR. These results as a whole indicate that the latest fertility decline was shaped by both quantum effect from the decline of marriage prevalence and the temp effect from marriage postponement. In other words, the latest declining trend of PTFR in Japan was mainly caused by the postponement of marriage and increase of those who spend their life as never married.

4. Review and prospect of cohort first marriage rate in Japan

How have these proportion of married at each ages changed over female cohorts? Is it a phenomenon due to the change in the marriage timing or a phenomenon due to the rise in the proportion of never-married in cohort? How can we see the trend of the future marriage? To answer these questions, it is important to know how the pattern of marriage has changed so far.

Prior to examining the first-marriage rates closely, we calculated the age-specific first-marriage rate for each female cohort from 1935 onward. Because there is a delay in registration of the number of first marriages obtained from vital statistics, we account for this delay in registration when calculating the age-specific first-marriage rates (Figure 7).

Figure 7 Age pattern of cohort first marriage rate



Then, based on so calculated first-marriage rates for the cohorts, we estimated the mean age at first marriage and the proportion of never married at age 50 for each cohort. When making the estimates, we had to consider the cohorts whose marriage behavior does not finish. For example, the subjects born in 1960 are 35 years old as of

at first marriage and proportion never married for the cohort, will be an extension of the trends in changes that have been shown by past birth cohorts.

5. Remarks: prospects of marriage and period total fertility

Although first-marriage rates by age for the recent cohorts is an extension of changes in the past, it is difficult to predict specifically to what extent the average age at first marriage and proportion never married will reach.

When we observed first-marriage rates by age according to each cohort and calculated their growth rates between the cohorts, we paid attention to the fact that the rate of increase in first-marriage rates shows a strongly positive growth tendency at later ages, while negative growth rate is shown in the rate of increase in first marriage by age for younger age groups.

There are more cases of restoration to grow in first-marriage rates by age. That is to say, if the proportion never married is at a low level, average age at first marriage will increase because first-marriage rates increase for older age groups. It is also likely that the proportion never married tends to increase, since a large increase in average age of first marriage is not produced on the grounds that a lot of first marriage cases will not take place for older age groups if there are less cases of restoration to grow first-marriage rates.

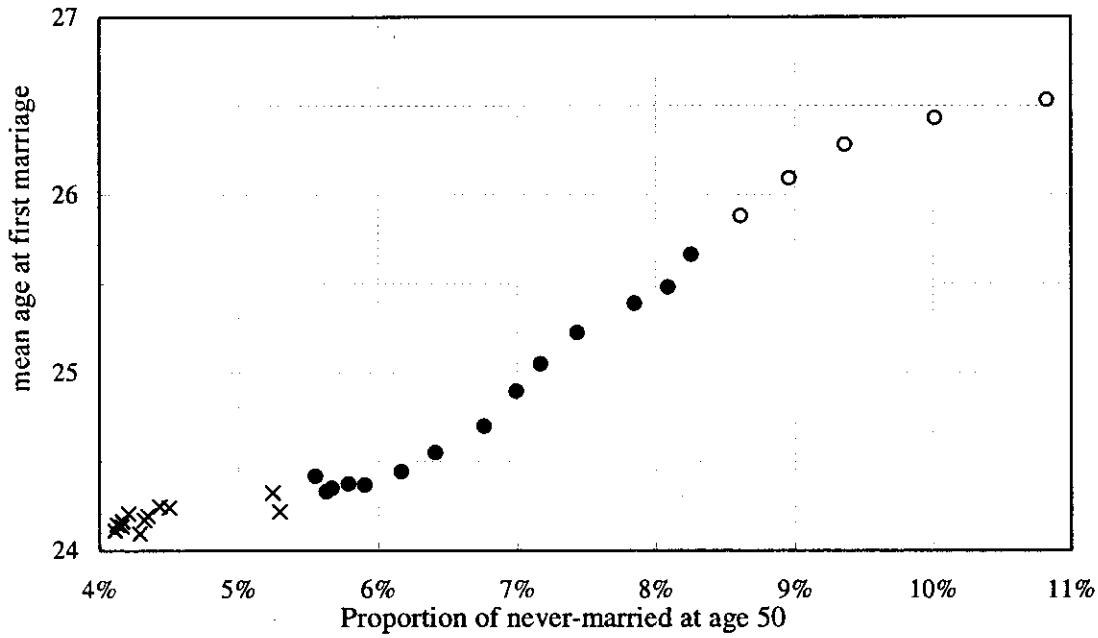
The fertility Japan decreased below the replacement level since mid-1970's. The demographic conclusions that are derived from this analysis is as follows. First, it was clarified that the change in marriage greatly influenced the decline of fertility at least after 1980 via the decomposition analysis. However, there is a possibility that the change staying up on the cohort is excessively measured from this analysis. Because, the rise of the birth rate in higher age groups is the one that the postponed birth appeared. Therefore, it is needless to say that it is a temporary conclusion, and the analysis by the cohort is necessary.

In the cohort analysis, effects from two different kinds of change in marriage behavior are examined, the effect of the marriage postponement, and that of increase in the proportion never married. On the other hand, an increase in proportion single will cause decrease in the fertility rate in permanent manner in Japan where extramarital births is extremely few. Though the scenario analysis, it was shown that the influence of an increase in proportion single was as large as those from the rise of the age at marriage. It is not likely that the fertility rate of Japan will rise to the replacement level in near future. However, if the rise of proportion never married stops, and the postponement of marriage settles, some fertility recovery can be expected so that the impact of prolonged below-replacement fertility on the society anticipated in near future may be reduced.

1995, and could undoubtedly marry after that. For the first-marriage rate distribution for those who are 35 years old or older for this kind of birth cohort, we estimated the age distribution for first marriages using the generalized log-gamma model[8]. The resultant relationship between average age at first marriage and proportion never married, for each cohort born from 1935 to 1965, is shown in Figure 8.

Incidentally, the proportion never married is the remainder of accumulated first-marriage rates in which age-specific first-marriage rates are accumulated up to age 50. The points marked by x in the Figure are the mean age at first marriage and the proportion never married for those who were born in 1935 to 1946. Except for the two cohorts born in 1945 and 1946, these cohorts are stable in terms of the fact that they tended to marry at an early age uniformly. For example, their mean age at first marriage is about 24, and their proportion never married is above some 4%. The bulleted points in the Figure are the cohorts born from 1947 to 1960.

Figure 8 Trends of the mean age at first marriage and proportion of never-married at age 50 based on birth cohort



Although these cohorts started exhibiting marriage behavior changes from the late 1960's, gradual increases in mean age at first marriage and proportion never married are seen. Similar trends are also presumed for cohorts born from 1961 to 1965. Thus, we can understand that females born in 1935 or later tend to continue increasing their age at first marriage and proportion never married, while we see a certain change in pattern from the baby-boom generation onward.

Therefore, we may come to the conclusion, from the trends in changes of mean age at first marriage and proportion never married for these birth cohorts, that the mean age

[1] The TFR is defined as the average number of births a woman would have if she were to live through her reproductive years (age 15-49) and bear children at each age at the rates observed in a particular year or period (Bongaarts and Feeney, 1998).

[2] This is a superstition that girls born in this year are likely to have misfortune. About a quarter of normal annual births were either shifted to other years or were lost in this year. This unusual demographic phenomenon indicated that people had acquired highly efficient measures and skills of fertility control by that year.

[3] These data show in Figure A1, A2 and A3

[4] See footnote 4.

[5] The estimated proportion of married based on the third scenario shows in Figure A4 for all cohorts

[6] We have utilized Boltzmann function to estimate the proportion of currently married. More detailed explanation showed in the appendix. However, in this version of paper it has not indicated. It will be added next version of paper.

[7] Ishikawa(2000) has been estimated age-specific proportions for the never married population, currently married population, widowed population and divorced population from 1958 to 1997 by the year.

[8] For the details of the model fitting, please look forward Takahashi, Kaneko, Ishikawa and other (1999) and also refer to Kaneko, Ryuichi(1993).

References

Atoh, Makoto, 1994, "The recent fertility Decline in Japan: change in women's rolle and status and their policy implications", The Population Problems research council, *The population and Society of Postwar Japan*, Tokyo: The Mainichi News Papers, pp.97-132.

Bongaarts, John and Feeney, Griffith, 1998, "On the quantum and tempo of fertility", *Population and Development Review*, Vol. 24, No. 2, pp.271-91.

Bongaarts, John and Feeney, Griffith, 2000, "On the quantum and tempo of fertility: Reply", *Population and Development Review*, Vol. 26, No. 3, pp.560-564.

Hirosima, Kiyosi, 1999, "Social Demography of nuptiality and fertility", in Yoriko Meguro and Hideki Watanabe eds., *Family Sociology*, Sociology in Japan, Vol.2, pp.21-57, University of Tokyo Press (in Japanese)

Ishikawa, Akira, 2000, "Structure of the reproduction system in Japan: measuring and estimation", Inaba H., Research of the models for fertility and first marriage, KOUSE KAGAKU KENKYU HOUKOKUSYO (in Japanese)

Kaneko, Ryuichi, 1993, "A projection system for future age-specific fertility rates", *Jinko Mondai Kenkyu* (Journal of Population Problems), Vol. 49, No. 1, pp.17-38, Tokyo. (in Japanese)

Kaneko, Ryuichi, 1999, "Below-replacement fertility in Japan: trends, determinants and prospects", United Nations, Below Replacement Fertility, *Population Bulletin of the United Nations*, Special Issue Nos.40/41, pp.266-291.

Lesthaeghe, R. (1983), "A century of demographic and cultural change in Western Europe: an exploration of underlying dimensions", *Population and Development Review*, 9/3, pp.411-434.

Lesthaeghe, R. (1998), "On theory development and applications to the study of family formation", *Population and development review*, 24(1), pp.1-14.

Lee-Jay CHO and Rpbert D. Retherford, 1973, "Comparative Analysis of Recent Fertility Trends in East Asia", *IUSSP International Population Conference*, Liege, Vol2. pp.163-178.

National Institute of Population and Social Security Research, 1998, *The Report on the Eleventh National Fertility Survey*, Vol. I.

National Institute of Population and Social Security Research, 1998, *The Report on the Eleventh National Fertility Survey*, Vol. II

National Institute of Population and Social Security Research, 1997, *Population Projections for Japan as of September 1995*, Research Series No.291.

Population Division, 1999, "Fertility Trends among low fertility countries", United Nations, *Below Replacement Fertility, Population Bulletin of the United Nations*, Special Issue Nos.40/41, pp.35-125.

Takahashi, Shigesato, R. kaneko, A. Ishikawa, M. Ikenoue, and F. Mita, 1999, "Population Projections for Japan: Methods, assumptions and results, *Review of Population and Social Policy*, No. 8, Tokyo: National Institute of Population and

Social Security Research, pp.75-117.

Tsuya, Noriko O. 1994, "proximate determinants of fertility decline in postwar Japan", The Population Problems research council, *The population and Society of Postwar Japan*, Tokyo: The Mainichi News Papers, pp.97-132.

van de Kaa, 1987, "Europe's second demographic transition", *Population bulletin* 42(1)

United Nations, 1999, Below Replacement Fertility, *Population Bulletin of the United Nations*, Special Issue Nos.40/41

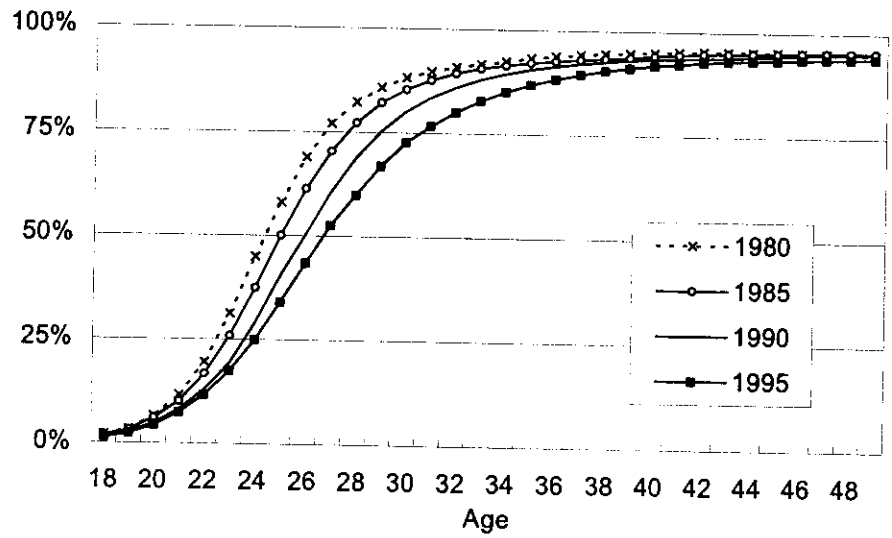
Partnership Transition in Contemporary Japan:
Prevalence of Childless Non-Cohabiting Couples

Miho Iwasawa

Introduction

Since the 1970s there has been a drastic drop in fertility, as well as a sharp decrease in the married population in Japan. The total fertility rate (TFR) reached its lowest point in 1999, at 1.34. The decline of married people has been one of the main causes of the below-replacement level fertility in Japan, where the rates of extramarital birth are extremely low (approximately one percent of live births). The purpose of this study is to specify the changes in relationships amongst men and women that might be central to the decline in marriage in contemporary Japan. I will approach the low fertility issue by focusing on intimate sexual couples from which childbirth arises.

Figure 1 presents a year-to-year comparison of the proportion of those married by age for women between the ages of 18 and 49, based on the census data (the total is the sum of married



Source: Census of Japan (1980, 1985, 1990, 1995)

Note: Percentage of married women out of the total number of women including both married and never married.

FIG. 1. Percentage of married women by age

females and never-married females). There has been a significant decrease since 1980 especially for those in their mid to late 20s. Various hypotheses on this postponing of marriage have been postulated through much research. For example, as the position of women in society

continues to rise, women are likely to reject the current institution of marriage, which forces an excessive burden on the female (Ohashi 1993). A pampered life at home with financially secure parents has further raised children's expectations about their married life in the future (Miyamoto *et al.* 1997). As a dating culture to replace the traditional arranged marriage is still not fully developed, singles are passive about the finding a partner (Atoh 1998). The increasing methods of meeting members of the opposite sex through travel, work and social interaction are working to delay decisions to get married (Yamada 1994).

Nevertheless, some ambiguity remains in terms of how these explanations contribute to understanding of the non-marrying society. This ambiguity seems to be related to the change in the meaning of marriage. It is on this point that I focus in this paper. Decades ago, marriage used to represent several life events simultaneously, such as the beginning of a regular sexual relationship (preparation for childbearing), leaving the parental home, living with a partner, and for a woman, leaving their occupation (Manting 1994). Also in Japan, until the 1970s, we could see the strong linkage among romantic love, sexual relationships and marriage, that is, intimate relationships between men and women and reproductive behaviour were tightly bound to marriage. Up to and in that period, it was fairly easy to identify the meaning of marriage. However, in today's society, these links have become weaker, bringing about confusion in understanding of the current non-marring society.

In order to be more realistic, we should examine the decline in marriage from a wider perspective. In this study marriage is reconsidered as one of the male/female partnerships. The term 'partnership' here is used as a general term for intimate relationship behaviour. And when I use an expression such as "those who have an intimate partner," they are considered to be currently involved in sexual relationships with their partner. In order to gain an understanding of the overall changes of partnerships, it is effective to use indicators for which the significance is comparatively stable. Therefore, I will focus on such indicators as sexual experience, the presence of an intimate partner, and living arrangements (living with or separate from the intimate partner). The question here is which among these behavioral changes has the closest correlation to the drop of marriage in Japan.

I will proceed in three stages. First, I will illustrate the descriptive trends concerning relational behaviour. Then, comparisons will be made with data from other developed countries in Europe or North America, to help us identify the distinctive features of Japan with regard to the recent partnership pattern. In the last part, I will mention some prospects concerning partnership patterns. A multinomial logistic model will be applied to the sample and the results of simulations by that model will be shown, which project future trends of partnership patterns.

Data

I use individual-level data from the three most recent Japanese National Fertility Surveys (JNFS) conducted in 1987,1992 and 1997 by the National Institute of Population and Social Security Research (Takahashi *et al.* 1998; Takahashi *et al.* 1999). The JNFS is a nationally

representative sample of two samples of population; unmarried men and women and married women aged 18 to 49(only for unmarried men and women in the 9th survey, up to age 35). For each survey, information was collected on approximately 15,000 individuals.

In the following sections, sexual behaviour and dating relationships, which is often reported for never married people, and reproductive behaviour, which is often reported for married people, are studied based on women as a whole. A partner includes a male lover, fiancé, cohabitant, or husband.[1]

The sample of these analyses was limited to currently married and never married women. That is, those who have been separated from a spouse by divorce or death have been excluded. The percentage of women (age 18 - 49) who are either widowed or divorced was 4.3 percent. There was no differentiation made between the first marriage and the second or later marriage, and all those in intact marriages were handled as one group, i.e., 'married.' According to the data from the 11th JNFS (1997), 3.3 percent of wives among married couples (women age 18 - 49) are re-married, and the proportion of re-married is 2.0 percent of the entire female population. For the married sample, whether or not they had borne children was known, while for the never married, the existence of an intimate partner as well as the desire or intent to marry that partner were reported. The number of those sampled was 11,788 from the 9th survey, 13,216 from the 10th survey, and 11,534 from the 11th survey.

When the proportions out of the combined samples of never married and married are displayed, estimates are made based on the population structure by marital status from the national census (the ratio of married females to never married females).[2] Based on this breakdown by marital status, the patterns in intimate relational behaviour by age for the female population are reported. Since the ultimate goal of this study is to identify the relationship between intimacy and reproductive behaviour, only relationships between men and women are considered.

Trends of Relational Behaviour

Sexual Experience

There is not a great deal of reliable data on the historical trends on premarital intercourse. It is believed, however, to have been increasing throughout the 20th century in Europe and America, and since 1980, many countries are reporting that the age for sexual experience (age on first having

[1] It is assumed that the women and their partners are involved in an exclusive relationship. The questionnaire for single respondents included questions about the existence of friends of the opposite sex, but these were not included in the definition of partner because it is often the case that friendships with members of the opposite sex are not exclusive.

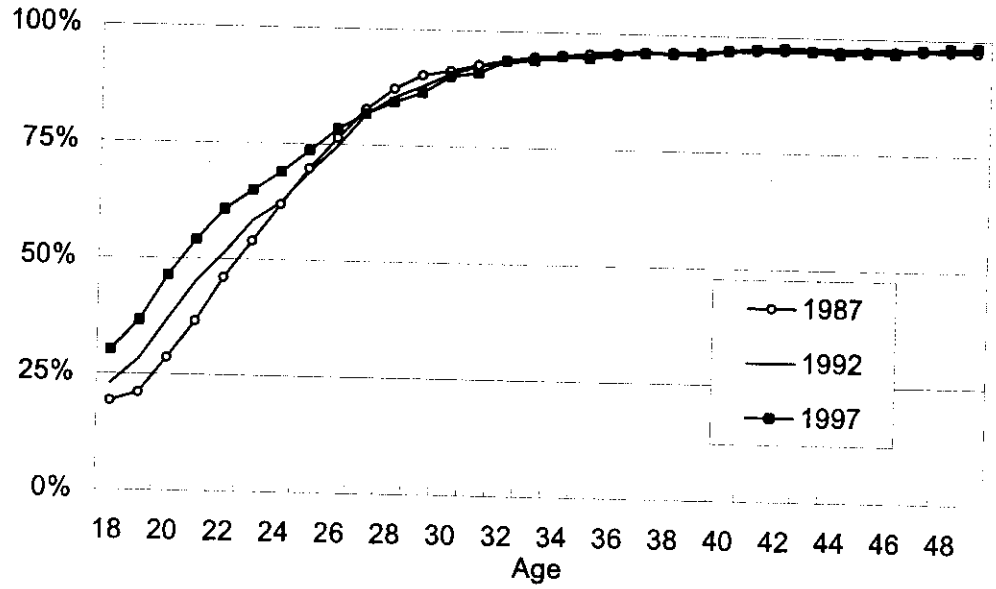
[2] The 9th survey (1987) referred to population composition by marital status of the census in 1985. In the same way, the 10th (1992) referred to the 1990 census, and the 11th (1997) referred to the 1995 census. In the 9th survey, the target group for single subjects was only those between the ages of 18 and 34. Therefore, in order to make the calculations for the 35 to 49 year age group for the 9th survey data, it is assumed that there is no change in the breakdown within the never-married group over age 34.

sexual intercourse) is dropping (Cliquet 1991). With the recent decrease in the proportion of married people, this raises a question about what kind of changes regarding sexual experience can be found among the population as a whole, including both married and never married women. Single respondents have been asked about their sexual experience in the JNFS. Although there were no questions regarding the sexual experience of married subjects, all married respondents were included in the calculations in the category of 'sexually experienced.' Figure 2 shows a comparison for each survey of the patterns of sexual experience by age, including both married and never married respondents.

Between 1987 and 1992, the younger age groups, up through the early 20s age, show an increasing proportion of sexually experienced members. Between 1992 and 1997 there was a further increase in the early twenties age groups, as well as a simultaneous expansion of the increased range through the group aged 27. For example, in 1987, 29 percent of 20-year-old women had experienced sexual intercourse. This rose to 37 percent in 1992, and to 46 percent in 1997, showing a 17-point increase over the period of 10 years. However, in the early 30s age group, there was a slight decrease in the proportion of those with sexual experience. For the older age groups, there was no significant change observed over the same 10-year period.

Other surveys on sexual behaviour among those of school age also support the fact that sexual experience (premarital intercourse) has been increasing dramatically since the 1980s (JASE 1994; Wagatsuma 1998; Sato *et al.* 1999), and attitudes toward premarital sexual activity have changed. The proportion of those who agree that 'premarital intercourse is acceptable if "there is love" between the partners'[3] has reached 82 percent of never married men under the age of 35, 81 percent of never married women, and 87 percent of married women (The 11th JNFS 1997). We should conclude that the total level of sexual experience among women has been almost stable during the decade and what should be attained is increasing detachment of sexual experience from marriage.

[3] The original wording is 'It doesn't matter if a man and a woman have sexual intercourse even prior to marriage, as long as they love each other.' The percentages are the total of those who responded either 'completely agree' or 'agree more than disagree.'



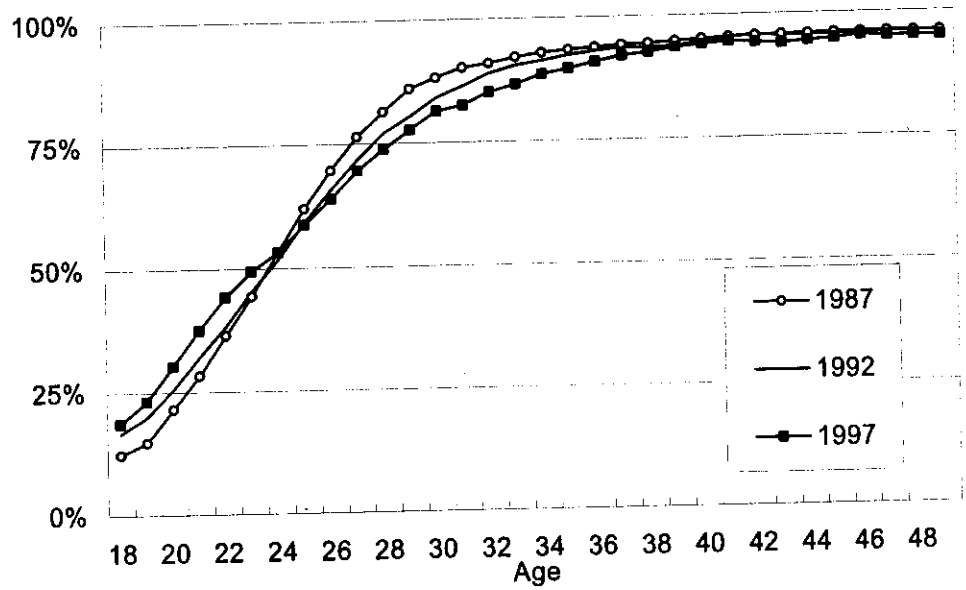
Source: Japanese National Fertility Surveys, the 9th (1987), the 10th (1992) and the 11th (1997)

Note: In order to generate a smooth graph, moving averages are calculated from the data for the three years on each side of each target age. The same in Fig.3 and Fig.4.

FIG 2. Percentage of women who have had sexual experience by age

Presence of Intimate Partner

The focus of in this section is the presence of an intimate partner. I am interested in exploring what changes, if any, have occurred since 1980 in the proportion of women who have a male partner. Figure 3 shows the proportion of women who have had sexual experience and have a partner, that is, who are considered to be currently in a sexually intimate relationship. In this case, 'sexual experience' does not necessarily mean that there is a sexual relationship with the current partner. Although, at least, those who are dating without a sexual relationship can be excluded from the group of intimate partnerships. According to the result of the 11th survey that 96.6 percent of those never married women who are dating agree that 'premarital intercourse is acceptable,' we can assume that there is a high probability of the existence of a sexual relationship with the current partner.



Source: JNFS, the 9th (1987), the 10th (1992) and the 11th (1997)

Note: Partners include lovers, cohabitants and husbands.

FIG 3. Percentage of women who currently have an intimate partner by age

Although those age groups around 30 show a slight decrease, 88 percent in 1987, 84 percent in 1992 and 81 percent in 1997 respectively, the early 20s age groups show an increase in the proportion of women with a partner.

One might ask whether this indicates increasing ease in finding a partner among the younger age groups and increasing difficulty in doing so among the older age groups on account of age effects. This distribution pattern by age group only shows the situation at a specific point in time, however, there is another possibility that when the women currently in their early 20s reach their 30s, they will show a higher proportion of partnerships than the current group of those in their 30s.

In any case, while there is a noticeable trend by age with regard to the presence of a partner, the change observed here is less compared to that of the proportions married, shown in Figure 1.

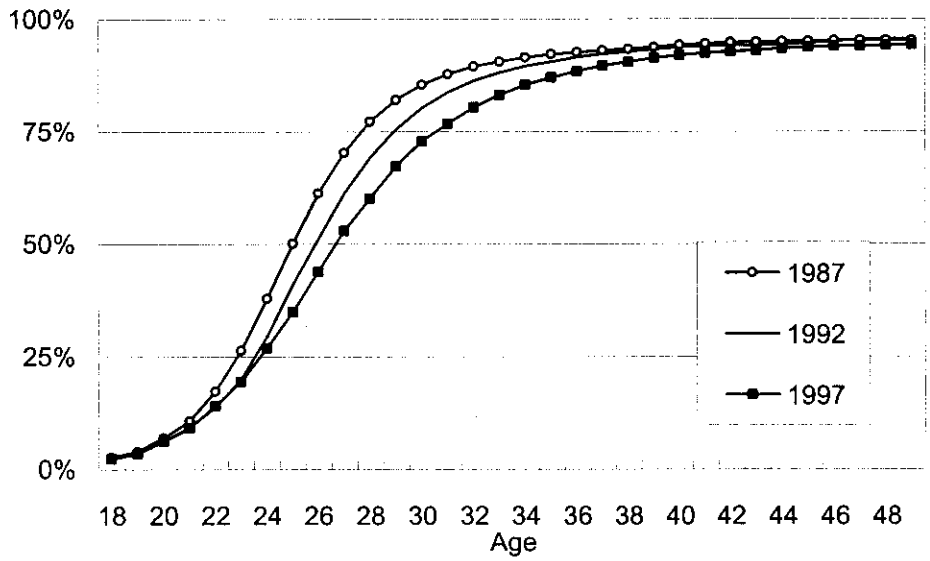
Besides the number of those who are dating, we can also know their intention of marriage from the surveys. In the 10th and 11th JNFS, unmarried respondents with partners were asked about their intention to marry their current partner. Differentiating between respondents who intended to marry their current partners and those who did not intend to marry their current partners, the latter group was confirmed to be larger among those in their mid-20s or younger. Furthermore, the 11th survey showed a slight increase in this group even among those in their late 20s. Even if women are in an intimate relationship, some might be 'outside' the marriage process.

Living with a Partner

Next, the proportion of women living with a male partner is considered. Figure 4 shows that in each subsequent survey there is a large decrease in the proportion of women living with a partner. For example, in 1987, 86 percent of 30 year-old women reported living with a partner, then the figure dropped to 80 percent in 1992, and to 73 percent in 1997. Referring to Figure 1, we can see the decrease in the number of women cohabiting with a partner almost equals the decrease in that of women who are married.

To summarize, the figures I have been presenting show that the linkage between having a partner and living with that partner or the intention to marry the partner is weakening. On the other hand, there is still a strong linkage between living with a partner and marriage in Japan.

A review of the characteristics of never married women currently cohabiting with a partner revealed that nearly all of them (more than 90 percent) wanted to get married in the future. Of them, 70 percent expected to get married to their current partner, while 30 percent expected to get married to somebody else. It is a lesser level compared to American cohabiters, with about three-quarters expecting to marry their current partner (Manning and Smock 2000). However, approximately one out of every five never married women cohabiting with a partner is engaged to be married to that partner (Iwasawa 1999). Based on the observation that cohabitation is relatively high among women in their early-20s, one can say that cohabitation in Japan is not as much a completely new life style that replaces marriage as a step towards marriage. Indeed, 10 percent of women currently engaged to marry are cohabiting with their fiancé (11th survey).



Source: JNFS, the 9th (1987), the 10th (1992), the 11th (1997)

FIG 4. Percentage of women who live with their partner by age

Changes in the Partnership Pattern

In the first sections, we have looked at the changes related to sexual experience, the presence of a partner and living arrangements. These results can be presented differently with a focus on the partnership pattern.

1) First, we can make inferences about the relationships from the behavioral data presented above. For example, if one is living with a partner, then this implies the presence of a partner; however, the presence of a partner does not necessary imply living together. In other words, it is possible to infer relations like the following: (a. being married) $\subset$ (b. living with a partner) $\subset$ (c. Have a partner). The cases in which partners (husbands) live separately after marriage are not considered here. In the following illustration, only women who have had sex and have a partner are defined as women who have an intimate partner. The criterion used here is (c. have an intimate partner).

2) From these criteria (a, b, c), four partnership typologies can be constructed, which are differentiated by varying degree of physical intimacy.

TABLE 1. *Relative numbers of each partnership type*

Age group	Year of the survey	N	(not a·b·c)	c. have an intimate partner		
					b. living with a partner	
						a. being married
			No intimate partner	Non-cohabiting couples	Cohabiting couples	Married couples
18-19	1982	634	87.7	9.5	0.8	2.0
	1992	828	83.3	14.2	0.8	1.6
	1997	579	81.3	16.3	1.0	1.4
20-24	1982	1,601	63.8	17.4	0.7	18.1
	1992	1,974	61.9	23.4	1.0	13.7
	1997	1,857	56.6	28.6	2.1	12.7
25-29	1982	1,682	24.6	6.6	0.0	68.9
	1992	1,910	29.2	11.3	0.6	58.9
	1997	1,788	31.5	17.2	0.5	50.8
30-34	1982	1,971	8.7	2.0	0.1	89.2
	1992	1,975	11.8	2.3	0.2	85.7
	1997	1,747	15.4	4.8	0.3	79.5

Note: Figures shown are percentages.

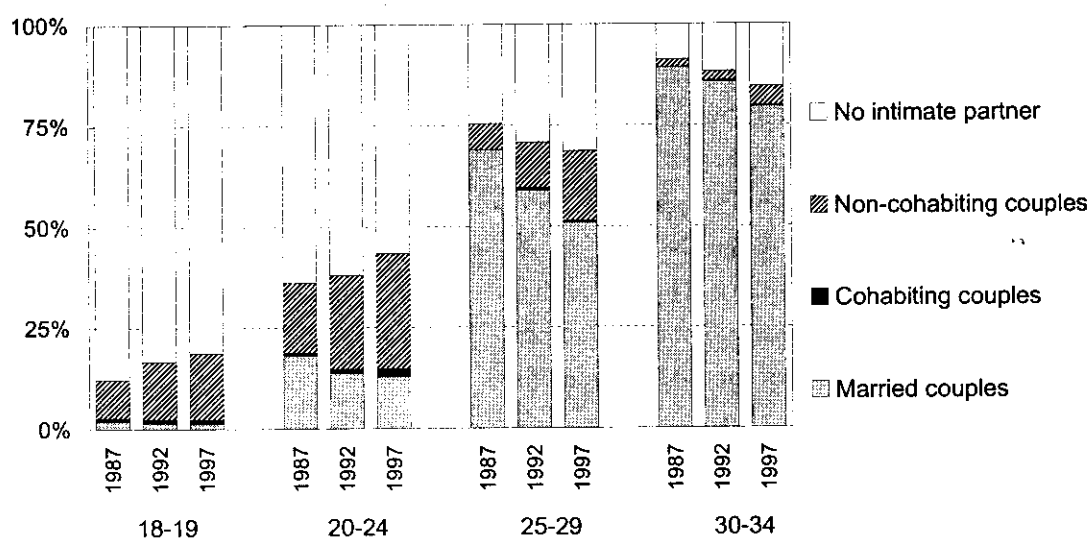


FIG. 5. Change of partnership pattern

First, the group satisfying all criteria (a, b, c) can be called 'married couples,' typically considered to be the 'traditional' form of marriage. Another group–'(non-marital) cohabiting couples'–includes those who are living together but not married (only b and c). Then there are people who are in an intimate partnership, but are neither married nor living together (c only), which can be called 'non-cohabiting couples.' Common to these groups is the presence of an intimate partner. In other words, women in these groups are considered to have chances of

pregnancy in the current intimate partnership. Respondents who do not fit into any of these three groups can be categorized as 'no intimate partner.'

Table 1 shows the changes in the relative proportion of these categories for each age group in five-year increments. The evidence in the above sections has indicated that while there has been comparatively little change in the proportion of women with sexual experience or with a partner, the proportion of those living with a partner has remarkably decreased. The same phenomenon can be observed in the increase of non-cohabiting couples in all age groups in Figure 5. On the other hand, there is a large decrease in married couples.

The above results can be presented more clearly by the decomposition method. Using this method, we can breakdown the change of proportions of those who are married as relative to the total population into two distinct changes; the 'changes in the proportion of women who have a partner of any type out of the total female population' (hereafter abbreviated as the PP effect) and the 'changes in the proportion of those who are married as relative to the people who have a partner' (hereafter, the PM effect).[4]

This manipulation enables us to gain a better understanding of the factors contributing to the recent marriage decline, whether due to a stagnation in dating, or an increase in the number of couples who choose not to marry. Table 2 shows the results of the PP effect and the PM effect relative to the total changes in the proportion of married women, from 1987 to 1992 and from 1992 to 1997, respectively. The 18 to 19 year old group shows the least change in the overall proportion of married women with the PP effect being positive, and the PM effect, negative. For the 20 to 24 year old group, there is an overall decrease in the proportion of married women; although the PP effect is actually positive, it is cancelled by the negative PM effect. With regard to the 25 to 29 year old group, both the PP and the PM effects are negative, with the PM effect contributing more to the overall decrease in marriage (59.2 percent in the first term and 78.3 percent in the latter term). As for the 30 to 34 year olds, in the beginning of the 1990s, the PP effect, that is, the increase of those who did not have a partner, was considered to be the primary factor contributing to the decrease of married women. In recent years, however, the PM effect has been increasing (from 15.9 percent to 43.4 percent).

---

[4] The proportion of married females (PMF) in each age group is given by

$$PMF = \frac{MF}{N^F} = \left(\frac{Pt}{N^F}\right)\left(\frac{MF}{Pt}\right) = PP \cdot PM ,$$

where N^F represents the total number of females in that age group, and MF is the number of married females, and Pt stands for the number of females with an intimate partner.

According to the decomposition method (Retherford *and* Cho 1973), the difference between PMF and PMF' at two different time points is shown to be

$$\Delta PMF = PMF - PMF'$$

$$= \left(PP - PP'\right)\left(\frac{PM + PM'}{2}\right) + \left(PM - PM'\right)\left(\frac{PP + PP'}{2}\right),$$

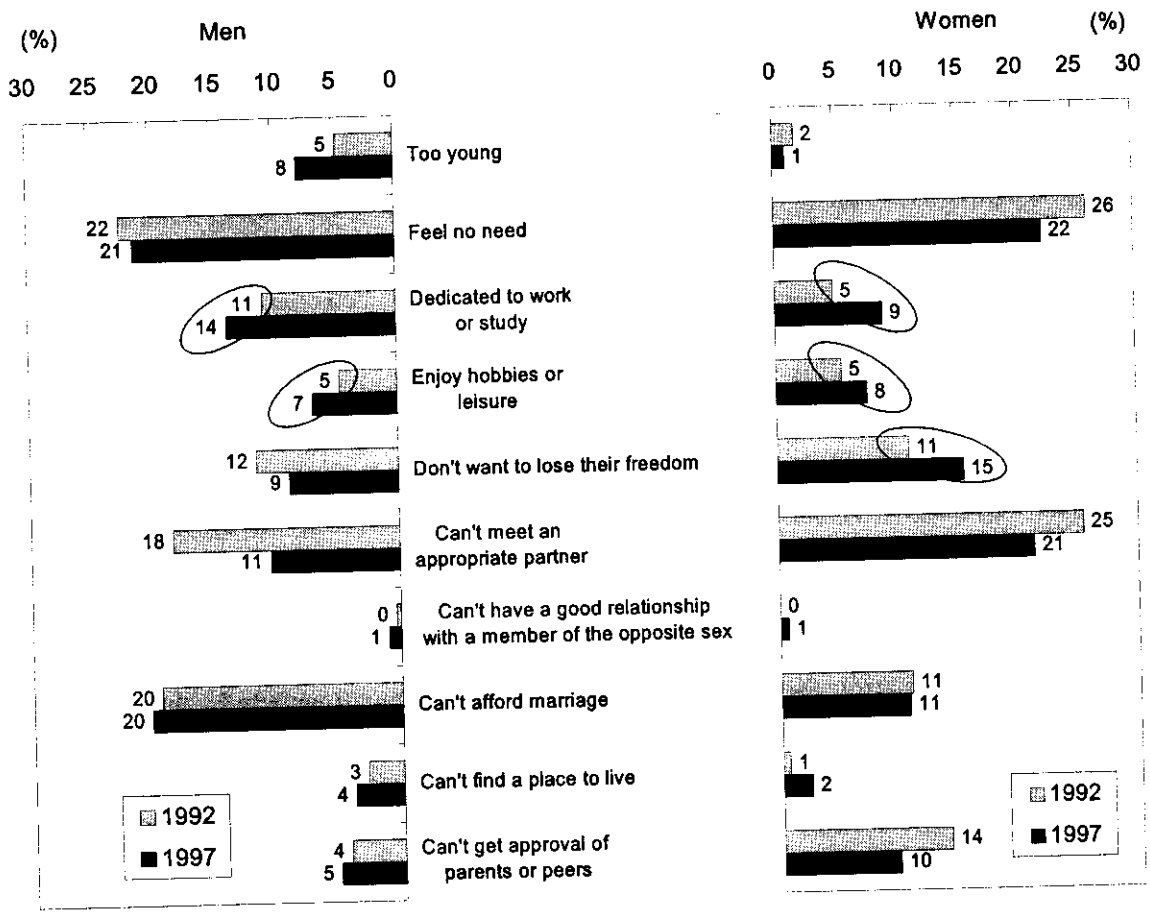
where the first term means the effect of change in the proportion of females with partners, and the second term means the effect of change in the proportion of married females in the group of those with partners.

TABLE 2. *Decomposition of Marriage Decline, 1987-97*

		Ages 18-19		20-24		25-29		30-34	
		1987-92	1992-97	1987-92	1992-97	1987-92	1992-97	1987-92	1992-97
	Change in the proportion of married as relative to the entire female population	-0.0036	-0.0024	-0.0438	-0.0096	-0.1000	-0.0804	-0.0355	-0.0614
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Decomposition	Change in the proportion who are married among women with partners (the PM effect)	-0.0092	-0.0042	-0.0521	-0.0267	-0.0592	-0.0630	-0.0057	-0.0266
	%	256.7	173.8	119.0	277.5	59.2	78.3	15.9	43.4
	Change in the proportion of women with partners (the PP effect)	0.0056	0.0018	0.0083	0.0171	-0.0408	-0.0174	-0.0298	-0.0348
	%	-156.7	-73.8	-19.0	-177.5	40.8	21.7	84.1	56.6

Based on this result, decreasing nuptiality cannot be explained entirely by the decline of dating activities or an increase in the number of people who do not have an intimate partner. Rather, in the younger age groups, we can see an increase in the proportion of women with an intimate partner. The changes contributing to the sharp drop in the proportion of those married are the increase of women who have an intimate partner but do not live together.

From the above illustrations, marriage decline in the 1990s in Japan accompanies *partnership transition*. We are in the process of shifting from marital coresidential relationships to non-cohabiting relationships in which couples are sexually involved, but neither live together nor have legal ties. And about 70 percent out of those women are living with their parents. As these non-cohabiting couples are usually childless in Japan, this transition leads immediately to fertility decline.



Note: Based on never married men and women aged 25-34 who currently have an intimate partner, including lover or cohabitant. For men, a sample of 276 in 1992 and 304 in 1997, and for women, a sample of 165 in 1992 and 291 in 1997.
Source: JNFS,1992,1997

FIG. 6. Reasons for remaining 'single' among never married men and women in intimate relationships

To understand why those who are in an intimate relationship are reluctant to get married, we can refer the reason for remaining unmarried. In the JNFS, unmarried men and women were asked to identify which of the categories shown in Figure 6 represented their reasons for remaining unmarried. This figure presents the percentage of each reason among never married men and women aged 25-34 who have an intimate partner.

As for men, 'feel no need' and 'can't afford marriage' are high, while for women, 'feel no need' and 'can't meet an appropriate partner' are remarkable. Compared with the previous survey, however, reasons such as 'dedicated to work or study' or 'enjoy hobbies or leisure' or 'don't want to lose their freedom' have risen significantly. In addition to the lack of positive reasons for getting married, the rising priority of work or leisure over marriage seems to put restrictions on marriage. In other words, marital life in Japan is considered to be less compatible with their

ambitions for self-satisfaction.

Should the partnership transition in Japan be accounted for in the same way as the second demographic transition in Europe, or is this the appearance of something completely different? The answer to this question is also important to verify the applicability of the second demographic transition hypothesis in Japan (van de Kaa 1987). Considering the other countries, the decrease in nuptiality in Western Europe and North America since the 1960s has been accompanied by an increase in cohabitation. This differs from the situation in Japan where there is a decrease in nuptiality without a popularization of cohabitation (Atoh 1997). The next section will present cross-national comparisons focusing on intimate relationships.

Comparison with Other Countries

Figure 7 shows the proportion of women aged from 25 to 29 in union of any type. Furthermore, union is subdivided into marriage and cohabitation. The data for Japan is taken from the JNFS, and that for other nations from the European Fertility and Family Survey (FFS) (Klijzing *and* Macura 1997).

We will first look at the characteristics of Europe, Canada, and New Zealand. The data show that there is not much of a difference among countries in the total proportion of women being married or in cohabitation. These countries can be roughly divided into three groups: (a) countries in which only the proportion of marriage is high, (b) countries in which the proportion of those married is low, and instead cohabitation is high, and (c) countries in which both are low. This classification corresponds to the geographical distribution as well, where (a) is Eastern Europe plus Belgium, and (b) is Northern and Central Europe. Canada and New Zealand fall into the (b) pattern. Southern European countries like Italy and Spain can be grouped (c).