A Comparative Analysis of Fertility in Japan and France
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1. Introduction
Comparisons of fertility are usually based on TFR (Total Fertility Rate). But TFR is an imperfect measure of period fertility because it is influenced by structures inherited from the past: population by parity and duration since previous birth. The combination of survey data and civil registration data is necessary to calculate new fertility indices. Besides age, these indices take into account, parity of women and duration since last birth (Rallu and Toulemon, 1994). This paper is an attempt to use these indices to compare fertility and characterize family formation in Japan and France.

2. Fertility Trends in Japan and France
Fertility indices which will be used in this paper are: PA TFR (parity-age-TFR), which takes into account the structure of the female population by parity (number of children already born to women) and age; PDTFR (parity-duration-TFR) which takes into account parity and duration since previous birth (birth intervals); and PADTFR (parity-age-duration-TFR) combining the three factors, parity, age and birth intervals. Whereas TFR is based on the addition of age-specific rates (or incidence rates): all women of a given age appear at the denominator, other indices are based on probabilities (or exposure rates), only women who did not experience the event considered are at risk: for instance, women with only one child are at risk of a second birth. For first births, PATFR is similar to a life table; for second and higher births, it is similar to life tables with successive entries. For birth n, entries are women with n-1 child who have not yet n child(ren). The detailed equations of these indices have been presented in the article mentioned above.

Fertility in Japan remained slightly above the replacement level from 1965 to 1973, with the exception of 1966 (the fire-horse year). From 1974 to 1977, Japanese TFR dropped to 1.8. Then it almost stabilized between 1.8 and 1.7, slightly increasing from 1981 to reach 1.8 in 1984. Since 1984 a steady decline has occurred to reach levels as low as 1.46 in 1993 and 1.50 in 1994. In France, like in many Western countries, fertility declined from the peak of the baby boom in 1964 to 1976, being below the replacement level from 1975. A short recovery in 1980-1982 brought TFR to 1.95 and was followed by a new stabilization slightly above 1.8 until 1988. Then a new decline appeared to reach 1.65 in 1993-1994. In both France and Japan, other fertility indices, PATFR, PDTFR and PADTFR, were below TFR until 1974; then they became higher. To understand the differences between TFR and other indices, it is necessary to consider fertility by birth order. As PATFR under-estimates fertility and PDTFR over-estimates it, it is necessary to calculate PADTFR, including information on age and duration. PADTFR seems to be closer to PATFR than to PDTFR in France, but the relative difference between TFR and PADTFR is similar in Japan and in France.

In Japan, according to TFR in the early 1990s, 30% or more females would remain childless against 23% according to PATFR, the latter being the one which would actually be observed for birth cohorts if fertility was to remain stable by age and parity for about 25 to 30 years. This situation contrasts strongly with only 9% of females childless in 1967-1973 according to PATFR. During the last 20 years, childlessness has more than doubled in Japan. In France, 28% of females...
would remain childless according to TFR in 1989 against only 14% according to PATFR. The figure for 1975 was 9% at a similar level as in Japan, resulting in a much smaller decline in France.

The relative positions of TFR and PATFR vary according to birth order, the largest difference being observed for first births. Although the relative difference is important for third and higher births, first birth has a major impact and altogether, PADTFR is higher than TFR since 1975. This would mean that delayed first births are a major factor of current low fertility. The relative positions of the different indices are similar in Japan and in France, showing similar and rather simultaneous changes towards delayed first births in both countries and longer birth intervals mainly in France. PADTFR is 1.60 in Japan in 1994, or 7% higher than TFR, but lower than PDTFR, one of the indices usually presented from Japanese surveys on fertility. In France, PADTFR was 1.94 in 1989 (1.68 in Japan at that time), also 7% higher than TFR.

3. Conclusion

A considerable cultural distance separates Japan from France. In the field of demography, long-term fertility trends were different right up to the 1960s, and their determinants certainly had little in common. During the last twenty years, however, many similarities between the two countries have emerged. We have presented a comparative analysis of fertility trends in Japan and France based on new indices. We have systematically reviewed different indicators and have investigated the reasons for converging or diverging behaviors: e.g., Japan has, like France, experienced a marriage crisis beginning in the 1970s, but this has been expressed by a rise in age at marriage and an increasing dissociation of marriage and parenthood, which has brought the Japanese fertility level below the French one. In France, cohabitation has caused a sharp rise in births outside marriage, but fertility values have been more resistant than in Japan to the social change. The fertility decline in both countries seems to be related to constraints regarding traditional and modern family life. The differences between the two suggest that a comprehensive family policy can have a positive effect on fertility in Japan. We also plan to present the results an on-going study of marriage and fertility behaviors based on the multivariate analysis of survey data from the two countries, using models similar to those developed by Kojima (1993).

REFERENCES


FRENCH RESUME

La fecondite etait peu differente au Japon et en France entre 1975 et 1985, mais la baisse a ete ensuite plus importante au Japon avec des niveaux inferieurs a 1,5 naissance par femme depuis 1993. L'edude de la fecondite a partir de donnees d'etat civil et d'enquetes, et d'indices bases sur les probabilites de naissance par rang, montre que la baisse de la fecondite au Japon a resulte de la baisse de la nuptialite jusqu'au milieu des annees 1980 mais consiste aussi depuis lors en une baisse de la fecondite dans le mariage. A la difference de la France, on n'observe pas au Japon d'augmentation de la fecondite hors mariage et la recuperation des naissances retardees est resteee peu importante jusqu'au debut des annees 1990. Le developpement de la fecondite hors mariage et a des ages avances grace a ces nouveaux comportements que la France conserve une fecondite assez elevee sur la base d'une infecodite des generations encore assez faible.