



Marital and Fertility Careers of Soviet Women: A Life Table Analysis

Willekens, F. and Scherbov, S.

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Working Paper

MARITAL AND FERTILITY
CAREERS OF SOVIET WOMEN:
A Life Table Analysis

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ABSTRACT

This paper uses recently published data and life table analysis to describe the marital and fertility behavior of women on a country level. The purpose of this paper is to explore the changes in nuptiality and fertility in the Soviet Union and the associated changes in women's lives. Soviet women differ greatly from women in Western Europe in their early start of marital and fertility careers. One-third of females are married before their 20th birthday. The age at which women have their first child is decreasing. Fifteen percent have at least one child at age 20, and 65 percent have one or more children at age 25.

In the first part of the paper, multistate life table analysis is introduced to generate complete marital histories (biographies) of women as they pass through the reproductive ages (16-50). The second part describes fertility histories for two birth cohorts: 1940-44 and 1950-54, where the theory of staging or sequential processes is used to describe fertility careers

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MARITAL AND FERTILITY CAREERS OF SOVIET WOMEN:

A Life Table Analysis

F. Willekens,¹ S. Scherbov²

1. INTRODUCTION

In most regions of the world, social change is accompanied sooner or later by a significant change in family life. The traditional functions of the family, namely economic, social, and emotional support to members, are eroding. In a 'modern' society, the individual has the choice to obtain economic, social, and even emotional support from relationships and institutions other than the family. Although most people rely on the family for many of the traditional functions, a growing number of people do not choose a family-oriented lifestyle. As a consequence, new trends have become manifest:

- people marry later and some do not marry at all;
- marriages which are dissolved by age 50 are more likely to be dissolved by divorce than by death of one partner;
- the proportion of married people that are committed to a single family for the entire lifetime is decreasing;
- women have fewer children and give birth at higher ages; the lives of women are structured less around childbearing; women increasingly derive status from activities other than raising children;
- marriage and fertility are tied less than they used to; the proportion of children born outside of legal marriage is on the increase in western societies.

In addition to these trends, mortality decline has an effect of its own. Because of the increased life expectancy, a woman may expect to live longer after she completes raising children. Consequently, the share of child-bearing and child-raising years in the total lifetime is decreasing, not only because of a decline in fertility, but also because of a decline in adult mortality.

These trends are manifest in many western countries, as well as the Soviet Union. There is however a very significant difference. In the Soviet Union, marriage is universal and Soviets tend to marry much younger than their West European counterparts. The proportion of women who never marry is between 1 and 2 percent. The Socio-Demographic Survey of 1985 revealed that of the girls born in 1940-44, 29.7 percent entered first marriage by the age of 20 (State Committee for Statistics, 1988, p. 200); half of the 1942 cohort was married by 22.4 (Volkov, 1986, p.125). The proportion marrying at an early age is increasing. Of those born in 1950-54, 32.1 percent married before their 20th birthday (median age 21.5), and so did 34.0 percent of the 1960-64 cohort. Housing shortages, prejudices against cohabitation and modern contraceptives, inadequate sexual

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education, and lack of effective contraceptives are the main reasons for early marriage. The European (August 31-September 2, 1990) recently reported that as many as half of the brides in some parts of the country are pregnant when they marry. Childlessness is very small in the Soviet Union. The proportion childless remains stable between 6 to 8 percent, and childlessness is mainly due to natural infecundity which is being estimated at 5 percent.

Fertility decline has been a consequence of the decline in births of high parity. The period total fertility rate (TFR) is about 2.45. The Socio-Demographic Survey of 1985 showed that 11.8 percent of the married women between ages 18 and 59 have three or more children. Darsky and Scherbov (1990) calculated from the survey of 1985 that, of the women who married in 1970-74, 95.2 percent had at least one child. They also found that of women who gave birth during the 1970-74 period, 24.6 percent had three or more children. These general figures mask very important regional differences. The fertility transition was completed as early as 1959 in the European part (Coale et al., 1979; Jones and Grupp, 1987). It is beginning only now in the Asian republics. For instance, the proportion of women who gave birth in 1970-74, and who had three or more children in 1985, was 12.7 percent among Russians and 89.1 percent among Uzbeks (Darsky and Scherbov, 1990).

Although marriage is universal, the marriage institution is decreasing in significance. The divorce rate (number of divorces per 1,000 married couples) increased from 5.3 in 1958-59 to 11.5 in 1969-70 and further to 15.2 in 1978-79 (Demographic Encyclopedia, 1985, p. 359). In 1984-85, it is 14.1 (State Committee for Statistics, 1988, p. 208); in 1988, it is calculated to be 13.9 percent, amounting to about one million divorces. Experts attribute the high divorce rate to early and forced marriages. Because of reasons given above, many young couples rush into marriage when they barely know each other and are unprepared for the responsibilities. Divorces are easily obtained provided children are not involved. The couple fill in a few forms, pay a fee of 100 rubles (almost half a month's salary) and go their separate ways. Not all divorces can be attributed to dissatisfaction with the partner. In large cities such as Moscow and Leningrad, the number of divorces are inflated by so-called paper marriages, by which residents marry people keen to move to these places, but who otherwise do not meet the requirements of the residential permit system, which was established to control the number of inhabitants. Remarriages are becoming more important. In 1978, remarriages constituted 14.3 percent of all marriages; in 1988 it was 22.7 percent (State Committee for Statistics, 1989a, p. 134 and p. 154).

The purpose of this paper is to explore the changes in nuptiality and fertility in the Soviet Union, and the associated changes in women's lives. Multistate life table analysis is introduced to generate complete marital and fertility histories (biographies) of women as they pass through reproductive ages (16-50). The biographies are synthetic biographies since they are not completely observed but inferred from the available data on nuptiality and fertility. The life table is a method to determine the biography that is consistent with a set of vital rates and to assess the impact of changes in these rates. The multistate life table has become a useful technique in family demography (see, e.g., Schoen et al., 1985; Zeng Yi, 1986, 1990; Bongaarts, 1987; Espenshade, 1987; Willekens, 1987; Keyfitz, 1988). In addition to the multistate life table method, the theory of staging or sequential processes is used to describe marital and fertility careers. This theory focuses on the occurrence and timing of chains of events (Chiang, 1984; Willekens, 1990). Cohort data are used when available.

The first section of the paper presents the marital biographies women would experience if the rates of marital change observed in 1988 would prevail. Data limitations prevent the use of cohort data and a comparative analysis over time and space. The second section describes fertility histories. Two birth cohorts are distinguished: 1940-44 and 1950-54. The combination of the marital and fertility histories to picture the complete life course of Soviet women is not pursued because the marital careers are based on period data, whereas cohort data are used to reconstruct the fertility careers. Prospective biographic indicators are dependent not only on patterns of marital change and fertility, but also on mortality. Since marital and fertility careers are estimated up to age 50, the effect of mortality is small. The USSR life table for 1986-87 indicates that 95.1 percent of females aged 16 survive to age 50 (State Committee for Statistics, 1989b, p. 147).

2. MARITAL CAREER

In 1989, the State Committee for Statistics published the number of marriages by age, sex, and marital status prior to marriage, as well as the number of divorces by age (5-year age groups), and sex. The data are shown in Table A.1. They are derived from the marriage certificates issued in 1988. For a description of the Soviet vital registration system, the reader may consult Jones and Grupp (1987, pp. 38-45).

To construct the marital history of women from these data, rates of marital change must be estimated. The 1989 All Union Census of Population provides data on population by age, sex, and marital status as of 1st January 1989. The marital status composition of the female population is shown in Figure 2.1 and the figures are given in Table A.2. The data are considered adequate estimates of the population at risk. Occurrence-exposure rates by single years of age are estimated in two steps. First, the number of marital transitions and the marital composition of the population by single years of age are estimated from the 5-year data using natural spline interpolation. Second, the occurrence-exposure rates are obtained by dividing the number of marital events by the population at risk. Rates of widowhood are not available from these data. It is assumed that the male mortality rate is independent of marital status and that the age difference between bride and groom at time of marriage is negligible (in fact, the age difference is about two years). Under these conditions, the age-specific rates of widowhood of females are equal to the age-specific male mortality rates. The occurrence-exposure rates are shown in Table A.3.

Two types of life table analyses are carried out. First, the multistate marital status life table is prepared. The table shows, for various ages, the probabilities of being of a given marital status, the probabilities of marital change, and the expected sojourn time in each marital status. Four marital states are distinguished: never married, married, divorced and widowed. Second, order-specific marital states are considered. A distinction is made between first marriage, second marriage, and higher-order marriages; first marriage dissolution, second dissolution, etc. The marital life course is viewed as a staging process. A stage is a period or episode of life, characterized by the marital state occupied and the number of times one entered the marital state (Chiang, 1984, Chapter 12; Willekens, 1988). It is stressed that the marital career is studied up to age 50. Prospective indicators such as the expected duration of marriage, are for the period up to (but not including) age 50.

Life table analysis shows a probability of ever marrying (by age 50) of 98.0 percent. The figure is high if compared to that of other European countries. At age 25, 78.5 percent of women are married, according to the life table analysis. The marriage of some (6.2 percent) has already been dissolved at that age, mainly because of divorce (5.9 percent). Figure 2.2 shows probabilities of occupying given marital states for various ages. The life table estimates are very close to the census data on those aged 25 (78.5 percent are married, 5.6 percent are divorced, and 0.5 percent are widowed). An early divorce has a significant impact on a woman's marital biography. For instance, the probability of being divorced at the age of 30 is much higher for women who are divorced at an earlier age, e.g. 20. The probability that a 20 year-old will be divorced at age 30 is 23.1 percent if that person was already divorced at age 20, and 10.8 percent if that person was married at age 20. In other words, a woman is much more likely to be married at age 30 if she has not been divorced before. The difference reflects the differences in the age profiles of marriage and remarriage. The impact of an early divorce on marital status diminishes as the person gets older. The marital status of a person at age 40 is not very much affected by the marital status at age 20. The probability of being divorced at 40 is 19 percent for those who are divorced at 20, and 14 percent for those who are married at that age. The finding that a person 'forgets his/her past' can be attributed to the Markovian assumption underlying the multistate life-table model used in this paper. The marital state probabilities by age and marital status at age 20 are shown in Table A.4.

The probability that marriage ends in divorce before age 50 is 36.7 percent. The probability that marriage ends in widowhood is much smaller, since older women are excluded from our analysis. The probability that a woman celebrates her 50th birthday in widowhood is 8.3 percent.

The probability measures of the marital life course may be augmented by duration measures. How long does a woman spend in each of the marital states, provided that she experiences the rates of marital change observed in the USSR in 1988? The sojourn times are determined by two parallel processes. The first process is marital change; the second is mortality. The effect of mortality is small except at high ages and is not considered in this paper.

The marital biography of a woman may be described by the timing of marital change and the sequence of marital states occupied. Each sojourn in a marital state is a stage of marital life. Multistate life table analysis shows that women marry at age 22.4, on average. However, not all women marry. Those who marry before age 50, do so for the first time at age 21.8, on average. The multistate life table measure is inflated because 2 percent of the women never marry. The mean age at first marriage observed in the 1988 population was 22.39 (calculated from single-year age data interpolated from 5-year data on marriages; State Committee for Statistics, 1989a). The difference is due to the age composition of the population. Of the 34 years that separate ages 16 and 50, 24.0 years are spent in marriage. The sojourn time in marriage is influenced by the marital history. A person who is married at age 20 may expect to spend more time in marriage beyond that age than a person who is not married yet or who is already divorced (25.6 years versus 21.8 and 20.7 years). As marital change becomes less likely at higher ages, the marital status one occupies becomes a better predictor of the expected sojourn time in each marital state as age increases. For instance, the number of years a woman of age 40 may expect to spend in each marital state is very much determined by her marital status at that age. If she is married, she probably stays married and consequently 9.2 years of the ten that separates her from her 50th birthday are spent in marriage, on average. If she is divorced however,

Population by marital status.

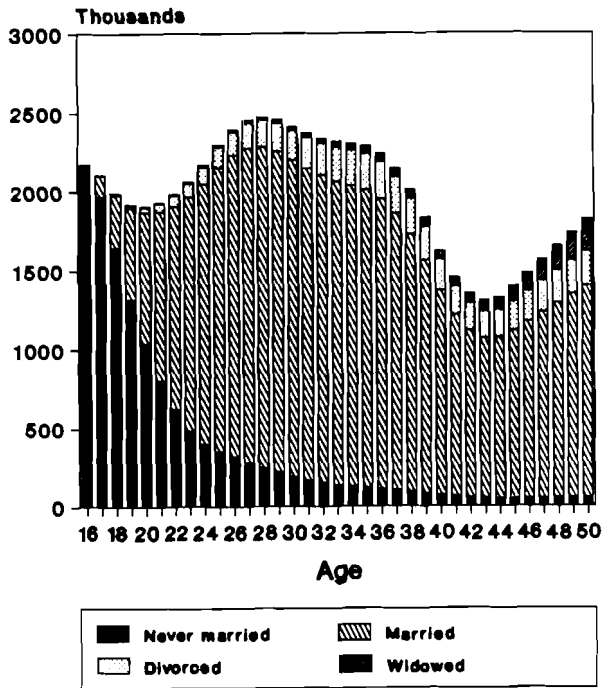


Figure 2.1

State probabilities.

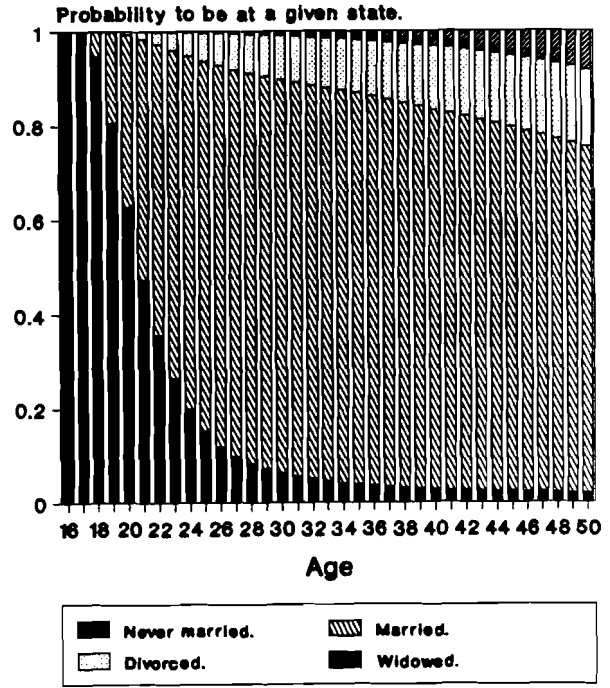


Figure 2.2

Time spent in marital stages for different marital careers.

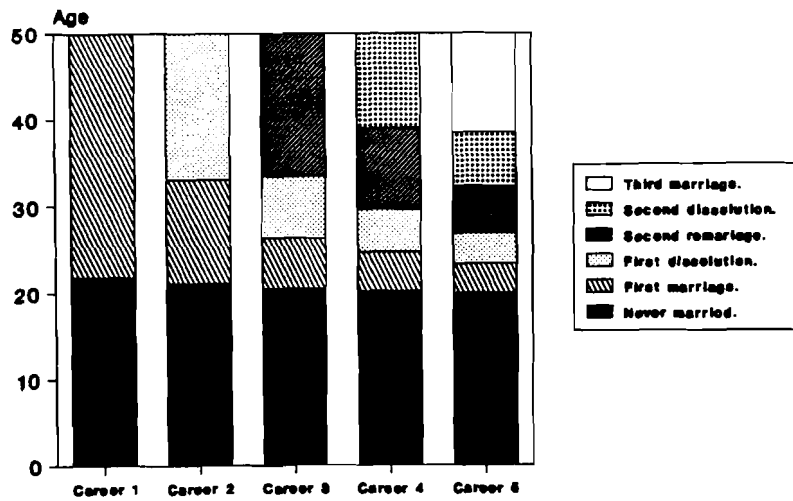


Figure 2.3

she may look forward to only 1.6 years in married life. The time in marriage is even less if the woman is widowed at age 40. Table A.5 shows the expected sojourn time in each marital state by age and marital status at each age.

We may study the marriage pattern by viewing the marital career as a staging process. Two events are distinguished: marriage and marriage dissolution. The occurrence of the event initiates a new stage, and a sequence of stages defines a career. Figure 2.3 exhibits the time spent in each of the stages by women with different marital careers. A woman who experiences only one event by the age of 50 is married at that age. Her career is shown at the left. As the number of events increases, the time spent in each stage becomes smaller.

The data do not permit an investigation of how cultural and economic changes are affecting the marital biographies of women. We know that the divorce rate started to increase in the 1960s from a low of 5.3 percent at the end of the 1950s to 11.5 percent at the end of the 1960s. Remarriages have become much more common. The proportion of marriages that are remarriages increased from 14 percent at the end of the 1970s to 23 percent at the end of the 1980s. Part of the increase can be attributed to the increased prevalence of divorces (6.6 percent of all women in the 1979 census and 7.6 percent in the 1989 census). The rate at which divorced women remarry in a year increased too, however, from 3.5 percent in 1979 to 5.9 percent in 1988 (calculated from data published in State Committee for Statistics, 1988 and 1989a). The specific reasons for these changes remain unknown although they are likely to be related to the changing status of women. Declining adult male mortality postpones the widowhood stage in a woman's life. The probability of ending marital life in widowhood and the average number of years spent in widowhood is not affected much by mortality trends, since adult mortality is also declining for women.

3. FERTILITY CAREER

The period TFR in the Soviet Union is about 2.45, which means that on average, a woman has two to three children during her lifetime. The TFR remains stable for many years. Not all women have a fertility career. Between 6 to 8 percent of the women remain childless. Natural sterility amounts to about 5 percent. Marriage is not a limiting factor since the proportion of women who do not marry is very small (1 to 2 percent). Almost all married women who are able to have children do so.

The fertility careers of women will be studied using cohort data. For this purpose, we used data on the number of children ever born to women of different ages and parity.³ The data by cohort were reconstructed. In order to study the fertility careers of women by birth cohort, the data were transformed into occurrence-exposure rates. The transformation consists of two steps. First, the number of children ever born by birth order to women of a given cohort are estimated for single years of age from five-year age data. Second, rates at which women of a given parity and age have an additional child (occurrence-exposure rates) are estimated from the number of children ever born data, assuming that fertility is the outcome of a Markov process. The occurrence-exposure rates are the parameters of staging processes, underlying the fertility careers. The rates are

³The data was brought to IIASA by A. Vishnevsky, and prepared by A. Vishnevsky and A. Anichkin.

given in Appendices B.1 and B.2. The rates serve an input to estimate the density distribution of children born by birth order. The densities for the 1940-44 and the 1950-54 cohorts are shown in Figure 3.1. The figure demonstrates the increase in first and second births, and the decline in higher-order births.

In this section, the fertility career is studied irrespective of the marital career. The marital career described in the previous section is based on period rates of marital change observed in 1988. The fertility rates used in this section are cohort rates for the 1940-44 and the 1950-54 birth cohorts.

The fertility careers of women start relatively early. Fertility before age 20 accounts for about 10 percent of total fertility and the mean age at first childbirth is about 23. These figures do not change much as fertility declines, due to continued early marriage. Fertility decline in the Soviet Union is therefore predominantly affected by a decline in higher-order births.

Figures 3.2 and 3.3 show the parity distribution of women, born in different periods, at various ages. Women born in 1940-44 had on average 2.05 children by the end of the reproductive career. Women with children had 2.34 children on average. Life table analysis shows that about 12 percent remained childless, 23 percent had one child, 39 percent had two children, and 25 percent had three or more children. The proportion with six or more children was as high as 6 percent. Large families are situated in Asian republics with high fertility nationalities [TFR: Tajiks 6.9; Turkmen 6.5; Kirghiz 6.5; Uzbeks 6.4; Kazakhs 5.6 (Darsky and Scherbov, 1990)]. Women of more recent cohorts are as likely to have children as women of older generations. The age at which women have their first child is decreasing, probably due to increased sexual activity at younger ages, and the lack of adequate knowledge on and availability of contraceptives.

Childbearing is generally completed by age 37. The TFR of the 1940-44 cohort at age 37 is 2.00. Eight percent of the children are born before age 20, 46 percent before 25, 77 percent before 30, and 94 percent before 35. The fertility careers of most women extend over a period of 15 years between the ages 20 and 35. At age 20, 15 percent of the women have at least one child. The percentage of women with at least one child at higher ages are: 55 percent at age 24, 65 percent at age 25, 82 percent at age 30, and 86 percent at age 35. At age 30, one-third of the women have exactly one child and another third have two children. The proportion of childless women at that age is 18 percent. Sixteen percent have three or more children. The distribution of completed family size has been given before. It is the distribution of mothers aged 45 by the number of children born (mortality is assumed to be absent).

The mean age of mothers at childbirth is given in Appendices B.3 and B.4. The mean ages shown are the ages at which women who reached the age shown in the row, had their first, second, etc., child. For instance, a woman born in 1940-44 with at least one child at age 30, has the first child at age 22.7, on average; women with at least two children at age 30 have the second child at age 25.2, etc. The mean age at which women who completed their fertility had their first child is 23.4 years. The second child is born at age 27.2, on average.

Appendices B.5 and B.6 provide estimates of average birth intervals. For calculating birth intervals, we may of course not take the difference between mean ages, because not all women of a given parity experience an additional birth (see Feichtinger, 1987, p. 97).

Probability densities of births by order
1940-44 and 1950-54 cohorts.

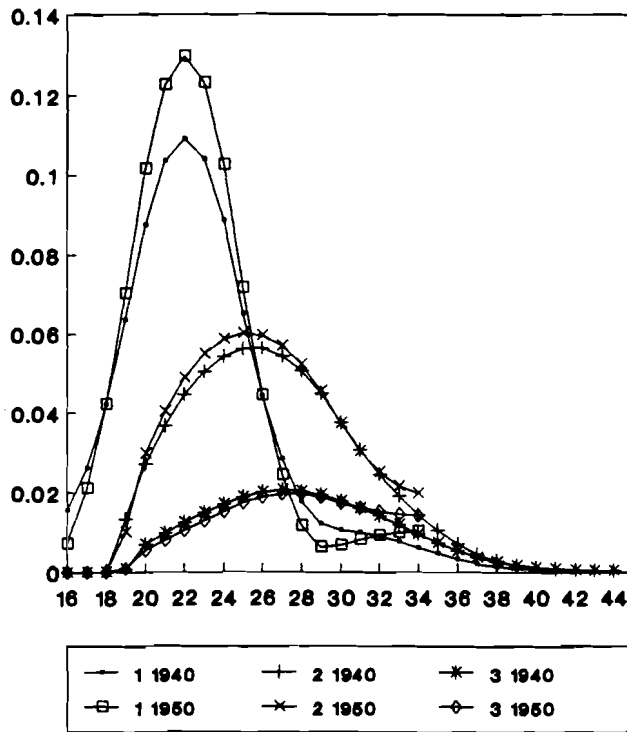


Figure 3.1

Stage probabilities for 1940-1944 cohort

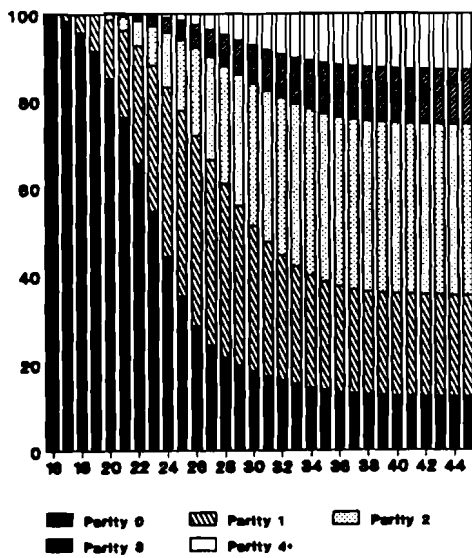


Figure 3.2

Stage probabilities for 1950-1954 cohort

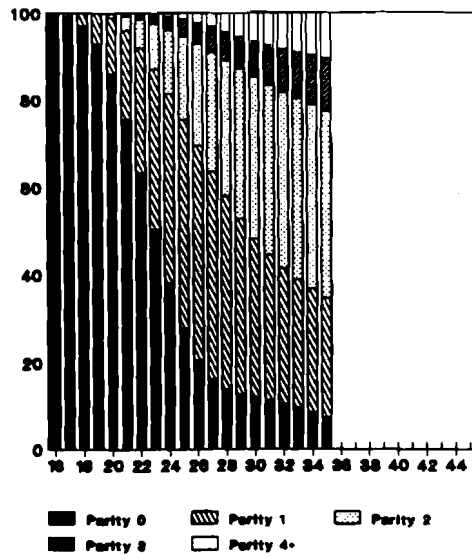


Figure 3.3

The interval between two consecutive births depends on the completed parity. Let $x_{i,j}$ denote the mean age at the i -th birth of those women whose completed parity is j ($j = i, i+1, i+2, \dots$). Note that the $x_{i,j}$ values are not observed, but estimated from the parameters of the fertility process, i.e. the age- and parity-specific fertility intensities (occurrence-exposure rates). The estimates are approximations and should be treated with caution. For instance, the values of $x_{1,2}$ are obtained by summation of the densities of second births, weighted by the difference between the age at second birth and the average age at which these women had their first child. It is equivalent to the sum of the densities of the second child, weighted by the average age of the first child at the time of birth of the second child. The method is an improvement on the technique suggested by Ryder (Wunsch and Termote, 1978, p. 170). Ryder approximates the birth interval by the difference between the mean ages at two consecutive childbirths, divided by the parity progression ratio. The Ryder method overestimates the birth interval considerably if the parity progression ratio is small. The average birth intervals shown in Appendices B.5 and B.6 are obtained as the weighted sum of the intervals by completed parity, the weights being the probability that a woman in parity i will end up with j children (Chiang and Van den Berg, 1982; Feichtinger, 1987, p. 97).

A final measure characterizing the fertility career is the probability that a child born by a given age of a woman is the first, second, third or higher-order child. Of all the children born to the 1940-44 cohort, 43 percent are first children, 31 percent second children, 12 percent third children, and 14 percent fourth or higher-order children. Of the children born to the 1950-54 cohort (by age 35 of the mother), 46 percent are first children, 33 percent second children, 11 percent third children, and 10 percent fourth or higher-order children. The analysis confirms the observation that fertility change in the Soviet Union is characterized by an increase in the proportion of women with children, but a decrease in the number of large families.

The fertility career of Soviet women is characterized by an early start, mainly associated with early marriage. Women with several children at any given age start, on average, earlier than women with one or two children. The model replicates the observed relation between age at first birth and level of completed fertility. The relation may not be represented fully by the model since no micro-data are used and heterogeneity between women is not accounted for. Most women have at least one child and two-thirds have two or more children. At age 40 of the mother, the first child is 16 years old on average. It is 18 when more children are present.

The study of the fertility career of women is incomplete without consideration of the means to control fertility. Most women rely on abortion to control their fertility. In the Soviet Union, about 6 million abortions are registered each year against 5 million births. Abortions are concentrated in the European republics, mainly Russia and Ukraine. These republics registered 5.2 million abortions against 3.3 million live births (State Committee for Statistics, 1989a, p. 413). Population experts believe that women who practice abortion, have two abortions for each live birth. That means six pregnancies in a lifetime, four of which are aborted. The abortions that occur in the Asian republics are concentrated in those republics which have a high proportion of European nationalities (Russians, Ukrainians, and Germans), such as Kazakhstan. Contraceptives are not popular in the Soviet Union. Statistical data on contraceptive use are lacking. In the Socio-Demographic Survey of 1985, no information was collected on contraceptive use. Contraception was not an issue to be discussed before perestroika. Information collected in some special studies may have been published in medical journals. Experts state that the general public and the

medical doctors have prejudices against hormonal contraceptives, due to expected health hazards. Other contraceptives are either not generally available or their quality is perceived to be questionable. Information on the availability and use of contraceptives is not published.

4. CONCLUSION

Nearly all Soviet women marry and have children. They marry and have children at young ages. In some parts of the country, half the brides are pregnant when they marry. Early marriage is both a determinant and a consequence of early fertility. Soviet women differ greatly from women in Western Europe in their early start of the marital and fertility careers. One-third of the women marry before their 20th birthday. Fifteen percent have at least one child at age 20; at age 25, 65 percent have one or more children. The paper uses recently published data and life table analysis to describe the marital and fertility careers. The model underlying the career paths is a Markov model. Data limitations prevent the estimation of more complicated models. The parameters of the career processes, the occurrence-exposure rates of marital change and fertility are estimated from the data. Once estimated, they permit a reconstruction of entire biographies (given the model). The biographic indicators presented in this paper include probability measures and duration measures.

No attempt has been made to link marital and fertility careers. The marital career is estimated from period data, whereas cohort data were available to generate the fertility career. Changes in marriage patterns may greatly affect period data, which should therefore be interpreted with the greatest care. An integration of both careers into a single staging process would benefit the assessment of the impact of changes in age at marriage on fertility. In the Soviet Union, age at marriage is however not the dominant factor in fertility, except in Asian republics. The housing situation forces many young couples to live with their parents. Since unmarried cohabitation is not generally accepted, marriage is the norm. Inadequate knowledge on contraceptives, prejudices against use of hormonal contraceptives even among medical doctors (partly because of the side effects attributed to their perceived low quality), and the inaccessibility of modern contraceptives of acceptable quality result in high fertility at young ages, and abortion as the main means of birth control.

The analysis of marriage and fertility at the country level, as done in this paper, can only provide a first impression of the processes that determine observed patterns. Because of the ethnic composition, great regional differences exist. Marital and fertility change in the Soviet Union cannot be understood without the regional and/or nationality component. This paper is illustrative of a methodology that can easily be applied to republics and regions, given the rich data that have recently become available.

REFERENCES

- Bongaarts, J. 1987. The projection of family composition over the life course with family status life tables. Pages 189-212 in J. Bongaarts, T. Burch, and K. Wachter, Eds. *Family Demography. Methods and Their Applications*. Oxford: Clarendon Press.

- Chiang, C.L. 1984. *The Life Table and its Applications*. Malabar, Florida: Krieger Publishing Co.
- Chiang, C.L. and B.J. van den Berg. 1982. A fertility table for the analysis of human reproduction. *Mathematical Biosciences* 62:237-251.
- Coale, A.J., A. Anderson, and E. Härm. 1979. *Human Fertility in Russia Since the Nineteenth Century*. Princeton, New Jersey: Princeton University Press.
- Darsky, L. and S. Scherbov. 1990. Parity-progression fertility tables for the nationalities of the USSR. *WP-90-53*. Laxenburg, Austria: International Institute for Applied Systems Analysis.
- Espenshade, T.J. 1987. Marital careers of American women: A cohort life table analysis. Pages 150-167 in J. Bongaarts, T.K. Burch, and K.W. Wachter, Eds. *Family Demography. Methods and Their Applications*. Oxford: Clarendon Press.
- Feichtinger, G. 1987. The statistical measurement of the family life cycle. Pages 81-101 in J. Bongaarts, T.K. Burch, and K.W. Wachter, Eds. *Family Demography. Methods and Their Applications*. Oxford: Clarendon Press.
- Jones, E. and F.W. Grupp. 1987. *Modernization, Value Change and Fertility in the Soviet Union*. Cambridge: Cambridge University Press.
- Keyfitz, N. 1988. A markov chain for calculating the durability of marriage. *Mathematical Population Studies* 1(1):101-121.
- Schoen, R., W. Urton, K. Woodrow, and J. Baj. 1985. Marriage and divorce in twentieth-century American cohorts. *Demography* 22:101-114.
- State Committee for Statistics. 1988. *Population of the USSR 1987*. Moscow: State Committee for Statistics.
- State Committee for Statistics. 1989a. *Population of the USSR 1988*. Moscow: State Committee for Statistics.
- State Committee for Statistics. 1989b. *Table of Mortality and Life Expectancy of the Population*. Moscow: State Committee for Statistics.
- Volkov, A.G. 1986. *Family - the Object of Demography*. Moscow: Misl (in Russian).
- Willekens, F.J. 1987. The marital status life table. Pages 125-149 in J. Bongaarts, T.K. Burch, and K.W. Wachter, Eds. *Family Demography. Methods and Their Applications*. Oxford: Clarendon Press.
- Willekens, F.J. 1988. A life course perspective on household dynamics. Pages 87-107 in N. Keilman, A. Kuijsten, and A. Vossen, Eds. *Modelling Household Formation and Dissolution*. Oxford: Clarendon Press.
- Willekens, F.J. 1990. *Life Course Analysis. Stochastic Process Models*. Forthcoming.

Wunsch, G.J. and M.G. Termote. 1978. *Introduction to Demographic Analysis. Principles and Methods*. New York: Plenum Press.

Demographic Encyclopedia. 1985. Moscow: Soviet Encyclopedia (in Russian).

Zeng Yi. 1986. Changes in family structure in China: A simulation study. *Population and Development Review* 12(4):675-703.

Zeng Yi. 1990. *Family Dynamics in China. A Life Table Analysis*. Madison, Wisconsin: University of Wisconsin Press.

APPENDIX A. Marital Status Life Table for Soviet Women, 1988

Table A.1. Number of marriages by previous marital status, number of divorces.

Number of transitions between marital statuses				
Age	From never married to married	From widowed to married	From divorced to married	From married to divorced
16-17	105313	69	87	477
18-19	598224	476	3763	14758
20-24	945758	3769	69880	172577
25-29	254407	9169	129746	232469
30-34	79335	11436	110415	178650
35-39	31052	11357	73181	129806
40-44	10331	7700	35320	65267
45-49	8760	12739	32223	58853
50-54	7742	14099	23017	43098
55-59	6651	11717	12012	24216
60+	16230	22575	11771	23629

Table A.2. Female population by marital status, age. January 1, 1989.

Age	Never married	Married	Divorced	Widowed
16-17	4121228	149594	3294	3318
18-19	2957777	913179	26203	4477
20-24	3339385	6315256	346538	32033
25-29	1416680	9757497	786899	87242
30-34	775169	9762860	1010289	163914
35-39	511683	8579182	1126154	274741
40-44	286341	5552076	880200	322726
45-49	257997	5900049	984115	669880
50-54	305059	6702759	1070010	1203812
55-59	347586	5343377	771653	1759104
60-64	487155	4849872	733554	2865574
65-69	365925	2329665	360763	2632636
70+	543142	2160856	378789	9541269

Table A.3. Occurrence-exposure rates of marital change by age, females, 1988 (interpolated).

Age	Occurrence-exposure rates (interpolated)				
	From never married to married	From widowed to married	From divorced to married	Form married to divorced	From married to widowed
20	0.2789	0.1200	0.2013	0.0245	0.0006
21	0.2866	0.1187	0.2101	0.0273	0.0009
22	0.2913	0.1178	0.2079	0.0282	0.0011
23	0.2879	0.1172	0.2017	0.0281	0.0014
24	0.2693	0.1166	0.1938	0.0273	0.0017
25	0.2350	0.1156	0.1852	0.0262	0.0019
26	0.1994	0.1124	0.1765	0.0250	0.0022
27	0.1672	0.1077	0.1673	0.0239	0.0024
28	0.1406	0.1018	0.1574	0.0228	0.0026
29	0.1228	0.0952	0.1462	0.0216	0.0027
30	0.1153	0.0879	0.1338	0.0203	0.0029
31	0.1093	0.0797	0.1214	0.0191	0.0031
32	0.1019	0.0715	0.1096	0.0181	0.0033
33	0.0932	0.0637	0.0983	0.0173	0.0036
34	0.0837	0.0567	0.0878	0.0166	0.0038
35	0.0744	0.0506	0.0783	0.0161	0.0040
36	0.0659	0.0458	0.0704	0.0156	0.0043
37	0.0585	0.0416	0.0639	0.0151	0.0045
38	0.0520	0.0375	0.0582	0.0146	0.0047
39	0.0465	0.0332	0.0529	0.0139	0.0049
40	0.0420	0.0286	0.0476	0.0131	0.0051
41	0.0377	0.0248	0.0426	0.0122	0.0055
42	0.0340	0.0226	0.0385	0.0114	0.0060
43	0.0319	0.0219	0.0358	0.0109	0.0068
44	0.0320	0.0224	0.0349	0.0107	0.0076
45	0.0340	0.0232	0.0352	0.0108	0.0084
46	0.0352	0.0224	0.0350	0.0107	0.0092
47	0.0352	0.0203	0.0337	0.0103	0.0100
48	0.0340	0.0178	0.0316	0.0096	0.0108
49	0.0317	0.0152	0.0288	0.0087	0.0117

Table A.4.1. Marital state probabilities by age and marital status at age 20 (never married).

Age	Marital status at age 20 - never married				
	Total	Never married	Married	Divorced	Widowed
20	1000	1000	0	0	0
21	1000	757	240	3	0
22	1000	568	421	11	0
23	1000	425	553	21	1
24	1000	318	647	33	2
25	1000	243	710	44	2
26	1000	192	750	54	3
27	1000	157	775	63	5
28	1000	133	790	70	6
29	1000	116	800	77	7
30	1000	102	806	83	9
31	1000	91	811	88	10
32	1000	82	814	92	12
33	1000	74	816	97	14
34	1000	67	816	101	16
35	1000	62	815	105	18
36	1000	57	812	110	20
37	1000	54	809	115	23
38	1000	51	804	119	25
39	1000	48	800	124	28
40	1000	46	795	128	31
41	1000	44	789	133	34
42	1000	42	784	136	37
43	1000	41	778	140	41
44	1000	40	771	143	45
45	1000	38	765	147	50
46	1000	37	758	150	55
47	1000	36	750	152	61
48	1000	35	743	155	67
49	1000	34	735	157	74
50	1000	32	727	159	81

Table A.4.2. Marital state probabilities by age and marital status at age 20 (married).

Age	Marital status at age 20 - married			
	Total	Married	Divorced	Widowed
20	1000	1000	0	0
21	1000	978	22	1
22	1000	957	42	1
23	1000	940	58	2
24	1000	926	71	3
25	1000	914	81	4
26	1000	905	89	5
27	1000	898	96	7
28	1000	891	101	8
29	1000	886	105	9
30	1000	881	108	11
31	1000	876	111	12
32	1000	872	114	14
33	1000	867	117	16
34	1000	861	121	18
35	1000	856	124	20
36	1000	850	128	22
37	1000	843	132	25
38	1000	836	136	28
39	1000	829	140	30
40	1000	822	144	33
41	1000	815	148	36
42	1000	808	151	40
43	1000	801	155	44
44	1000	794	158	48
45	1000	786	161	53
46	1000	778	163	58
47	1000	770	166	64
48	1000	761	168	70
49	1000	752	170	77
50	1000	743	172	85

Table A.4.3. Marital state probabilities by age and marital status at age 20 (divorced).

Age	Marital status at age 20 - divorced			
	Total	Married	Divorced	Widowed
20	1000	0	1000	0
21	1000	180	820	0
22	1000	329	671	0
23	1000	444	555	1
24	1000	533	466	1
25	1000	600	398	2
26	1000	651	346	3
27	1000	691	305	4
28	1000	721	274	5
29	1000	744	249	6
30	1000	762	231	8
31	1000	774	216	9
32	1000	783	206	11
33	1000	789	198	13
34	1000	793	192	15
35	1000	794	189	17
36	1000	794	187	19
37	1000	792	186	22
38	1000	790	186	24
39	1000	786	187	27
40	1000	782	188	30
41	1000	778	189	33
42	1000	773	190	36
43	1000	768	192	40
44	1000	762	193	44
45	1000	756	195	49
46	1000	750	196	54
47	1000	743	197	60
48	1000	736	198	66
49	1000	729	199	72
50	1000	721	199	80

Table A.4.4. Marital state probabilities by age and marital status at age 20 (widowed).

Age	Marital status at age 20 - widowed			
	Total	Married	Divorced	Widowed
20	1000	0	0	1000
21	1000	112	1	887
22	1000	207	5	788
23	1000	289	10	701
24	1000	360	17	623
25	1000	421	24	555
26	1000	474	30	496
27	1000	519	37	444
28	1000	557	43	400
29	1000	588	49	363
30	1000	614	54	331
31	1000	635	59	305
32	1000	652	64	284
33	1000	665	69	266
34	1000	674	73	252
35	1000	681	78	241
36	1000	686	83	231
37	1000	688	87	224
38	1000	690	92	218
39	1000	690	97	213
40	1000	689	101	209
41	1000	688	105	207
42	1000	685	109	206
43	1000	682	112	205
44	1000	679	116	205
45	1000	675	119	206
46	1000	671	122	207
47	1000	667	125	208
48	1000	662	127	210
49	1000	656	130	214
50	1000	650	132	218

Table A.5.1. Expected number of years spent in each marital status by age and marital status at age 20 (never married).

Age	Marital status at age x - never married				
	Total	Never married	Married	Divorced	Widowed
20	30.00	4.490	21.840	2.930	0.737
21	29.00	4.773	20.764	2.744	0.716
22	28.00	5.199	19.577	2.533	0.688
23	27.00	5.796	18.250	2.298	0.653
24	26.00	6.571	16.776	2.041	0.610
25	25.00	7.457	15.207	1.775	0.559
26	24.00	8.309	13.662	1.521	0.506
27	23.00	9.039	12.214	1.292	0.454
28	22.00	9.598	10.902	1.093	0.405
29	21.00	9.975	9.739	0.925	0.360
30	20.00	10.215	8.685	0.780	0.319
31	19.00	10.404	7.668	0.648	0.279
32	18.00	10.549	6.682	0.529	0.239
33	17.00	10.628	5.747	0.422	0.201
34	16.00	10.619	4.883	0.331	0.167
35	15.00	10.504	4.105	0.254	0.136
36	14.00	10.278	3.420	0.192	0.110
37	13.00	9.945	2.824	0.143	0.087
38	12.00	9.515	2.312	0.105	0.068
39	11.00	8.997	1.875	0.075	0.053
40	10.00	8.402	1.504	0.053	0.040
41	9.00	7.742	1.191	0.037	0.030
42	8.00	7.020	0.933	0.025	0.021
43	7.00	6.246	0.721	0.017	0.015
44	6.00	5.433	0.546	0.011	0.010
45	5.00	4.593	0.394	0.007	0.007
46	4.00	3.734	0.259	0.003	0.004
47	3.00	2.850	0.147	0.001	0.002
48	2.00	1.935	0.064	0.000	0.001
49	1.00	0.984	0.015	0.000	0.000

Table A.5.2. Expected number of years spent in each marital status by age and marital status at age 20 (married).

Age	Marital status at age x - married			
	Total	Married	Divorced	Widowed
20	30.00	25.625	3.568	0.804
21	29.00	24.751	3.444	0.801
22	28.00	23.899	3.302	0.796
23	27.00	23.062	3.146	0.788
24	26.00	22.235	2.983	0.779
25	25.00	21.416	2.814	0.767
26	24.00	20.603	2.643	0.752
27	23.00	19.795	2.469	0.734
28	22.00	18.991	2.294	0.713
29	21.00	18.191	2.117	0.690
30	20.00	17.393	1.941	0.664
31	19.00	16.594	1.769	0.636
32	18.00	15.793	1.600	0.606
33	17.00	14.988	1.438	0.573
34	16.00	14.181	1.281	0.537
35	15.00	13.370	1.129	0.500
36	14.00	12.555	0.984	0.461
37	13.00	11.734	0.845	0.420
38	12.00	10.905	0.714	0.380
39	11.00	10.067	0.593	0.339
40	10.00	9.217	0.483	0.300
41	9.00	8.353	0.386	0.261
42	8.00	7.475	0.302	0.223
43	7.00	6.584	0.231	0.184
44	6.00	5.682	0.171	0.146
45	5.00	4.771	0.120	0.109
46	4.00	3.848	0.077	0.075
47	3.00	2.913	0.042	0.045
48	2.00	1.960	0.018	0.021
49	1.00	0.990	0.004	0.006

Table A.5.3. Expected number of years spent in each marital status by age and marital status at age 20 (divorced).

Age	Marital status at age x - divorced			
	Total	Married	Divorced	Widowed
20	30.00	20.706	8.582	0.708
21	29.00	19.707	8.602	0.687
22	28.00	18.625	8.710	0.662
23	27.00	17.500	8.866	0.631
24	26.00	16.345	9.055	0.597
25	25.00	15.170	9.268	0.560
26	24.00	13.979	9.500	0.519
27	23.00	12.776	9.747	0.476
28	22.00	11.568	10.000	0.431
29	21.00	10.368	10.246	0.385
30	20.00	9.197	10.463	0.339
31	19.00	8.078	10.626	0.294
32	18.00	7.029	10.719	0.252
33	17.00	6.058	10.728	0.213
34	16.00	5.176	10.647	0.177
35	15.00	4.385	10.469	0.146
36	14.00	3.685	10.195	0.119
37	13.00	3.067	9.837	0.095
38	12.00	2.522	9.403	0.075
39	11.00	2.044	8.898	0.058
40	10.00	1.630	8.326	0.044
41	9.00	1.281	7.687	0.032
42	8.00	0.991	6.985	0.023
43	7.00	0.754	6.230	0.016
44	6.00	0.557	5.432	0.011
45	5.00	0.391	4.602	0.007
46	4.00	0.251	3.746	0.004
47	3.00	0.139	2.859	0.002
48	2.00	0.060	1.940	0.000
49	1.00	0.014	0.986	0.000

Table A.5.4. Expected number of years spent in each marital status by age and marital status at age 20 (widowed).

Age	Marital status at age x - widowed			
	Total	Married	Divorced	Widowed
20	30.00	17.293	2.206	10.498
21	29.00	16.288	2.039	10.670
22	28.00	15.274	1.871	10.853
23	27.00	14.246	1.702	11.050
24	26.00	13.201	1.532	11.265
25	25.00	12.133	1.363	11.502
26	24.00	11.045	1.195	11.759
27	23.00	9.955	1.033	12.011
28	22.00	8.881	0.879	12.239
29	21.00	7.839	0.737	12.423
30	20.00	6.844	0.608	12.548
31	19.00	5.910	0.493	12.596
32	18.00	5.056	0.394	12.550
33	17.00	4.289	0.311	12.400
34	16.00	3.611	0.242	12.147
35	15.00	3.018	0.185	11.796
36	14.00	2.501	0.140	11.359
37	13.00	2.049	0.104	10.847
38	12.00	1.655	0.075	10.270
39	11.00	1.317	0.053	9.629
40	10.00	1.036	0.037	8.927
41	9.00	0.811	0.025	8.164
42	8.00	0.632	0.017	7.351
43	7.00	0.486	0.012	6.503
44	6.00	0.361	0.007	5.632
45	5.00	0.251	0.004	4.745
46	4.00	0.155	0.002	3.843
47	3.00	0.082	0.001	2.917
48	2.00	0.034	0.000	1.966
49	1.00	0.007	0.000	0.992

APPENDIX B. Fertility Indicators for 1940-44 and 1950-54 Birth Cohorts

Table B.1. Parity-specific occurrence-exposure rates, cohort 1940-44.

Parity-specific occurrence-exposure rates, cohort 1940-44						
Age	Parity					
	0	1	2	3	4	5
16	0.016	0.000	0.000	0.000	0.000	0.000
17	0.027	0.000	0.000	0.000	0.000	0.000
18	0.046	0.000	0.000	0.000	0.000	0.000
19	0.073	0.152	0.000	0.000	0.000	0.000
20	0.110	0.209	0.823	1.056*	0.000	0.000
21	0.147	0.199	0.359	0.207	0.000	0.000
22	0.183	0.180	0.235	0.184	0.000	0.000
23	0.213	0.163	0.178	0.192	0.000	0.000
24	0.226	0.150	0.144	0.209	0.468	0.000
25	0.206	0.142	0.123	0.228	0.463	0.689
26	0.169	0.139	0.105	0.229	0.442	0.381
27	0.126	0.139	0.091	0.216	0.393	0.304
28	0.088	0.137	0.078	0.193	0.343	0.282
29	0.065	0.133	0.067	0.163	0.299	0.285
30	0.061	0.122	0.056	0.130	0.262	0.301
31	0.061	0.107	0.048	0.103	0.233	0.309
32	0.058	0.091	0.040	0.081	0.209	0.302
33	0.053	0.075	0.033	0.063	0.184	0.280
34	0.046	0.059	0.026	0.049	0.155	0.238
35	0.036	0.044	0.020	0.038	0.124	0.181
36	0.026	0.031	0.014	0.029	0.095	0.130
37	0.018	0.020	0.010	0.022	0.071	0.091
38	0.012	0.013	0.007	0.016	0.052	0.062
39	0.008	0.008	0.005	0.012	0.038	0.042
40	0.006	0.005	0.004	0.008	0.027	0.031
41	0.005	0.004	0.003	0.006	0.019	0.022
42	0.003	0.003	0.002	0.004	0.013	0.016
43	0.003	0.002	0.001	0.003	0.009	0.012
44	0.002	0.002	0.001	0.002	0.007	0.010

*Due to interpolated number of events.

Table B.2. Parity-specific occurrence-exposure rates, cohort 1950-54.

Parity-specific occurrence-exposure rates, 1950-54						
Age	Parity					
	0	1	2	3	4	5
16	0.007	0.000	0.000	0.000	0.000	0.000
17	0.022	0.000	0.000	0.000	0.000	0.000
18	0.044	0.000	0.000	0.000	0.000	0.000
19	0.078	0.153	0.000	0.000	0.000	0.000
20	0.126	0.258	0.934	0.746	0.000	0.000
21	0.177	0.222	0.279	0.190	0.000	0.000
22	0.229	0.188	0.175	0.181	0.000	0.000
23	0.279	0.162	0.133	0.193	0.136	0.000
24	0.313	0.145	0.111	0.212	0.386	0.000
25	0.296	0.134	0.097	0.230	0.425	0.718
26	0.241	0.130	0.085	0.227	0.389	0.392
27	0.162	0.128	0.075	0.209	0.334	0.290
28	0.089	0.126	0.066	0.183	0.283	0.241
29	0.051	0.120	0.057	0.152	0.240	0.219
30	0.058	0.109	0.049	0.119	0.205	0.210
31	0.076	0.096	0.043	0.095	0.183	0.205
32	0.093	0.085	0.039	0.078	0.170	0.201
33	0.111	0.077	0.036	0.066	0.163	0.195
34	0.129	0.073	0.035	0.059	0.159	0.188

Table B.3. Mean age of mothers at childbirth, cohort 1940-44.

Age	Mean age of mothers at childbirth Cohort 1940-44					
	Birth order					
	1	2	3	4	5	6
16	0.0	0.0	0.0	0.0	0.0	0.0
17	16.5	0.0	0.0	0.0	0.0	0.0
18	17.1	0.0	0.0	0.0	0.0	0.0
19	17.8	0.0	0.0	0.0	0.0	0.0
20	18.5	19.5	0.0	0.0	0.0	0.0
21	19.3	20.2	20.5	0.0	0.0	0.0
22	20.0	20.8	21.1	21.5	0.0	0.0
23	20.6	21.5	21.7	22.2	0.0	0.0
24	21.1	22.1	22.3	22.9	0.0	0.0
25	21.6	22.7	22.9	23.6	24.5	0.0
26	22.0	23.2	23.5	24.3	25.1	25.5
27	22.2	23.8	24.1	25.0	25.7	26.1
28	22.4	24.3	24.7	25.7	26.3	26.7
29	22.6	24.8	25.3	26.3	26.9	27.4
30	22.7	25.2	25.8	26.8	27.5	28.1
31	22.8	25.6	26.3	27.3	28.1	28.8
32	22.9	25.9	26.7	27.7	28.6	29.5
33	23.0	26.2	27.1	28.1	29.1	30.1
34	23.1	26.5	27.5	28.4	29.5	30.6
35	23.2	26.6	27.8	28.7	29.9	31.1
36	23.2	26.8	28.0	29.0	30.2	31.5
37	23.3	26.9	28.2	29.2	30.5	31.8
38	23.3	27.0	28.4	29.4	30.8	32.1
39	23.3	27.0	28.5	29.5	30.9	32.3
40	23.4	27.1	28.6	29.6	31.1	32.4
41	23.4	27.1	28.6	29.7	31.2	32.5
42	23.4	27.1	28.7	29.8	31.3	32.6
43	23.4	27.1	28.7	29.8	31.3	32.7
44	23.4	27.2	28.7	29.9	31.4	32.7
45	23.4	27.2	28.8	29.9	31.4	32.8

Table B.4. Mean age of mothers at childbirth, cohort 1950-54.

Age	Mean age of mothers at childbirth Cohort 1950-54					
	Birth order					
	1	2	3	4	5	6
16	0.0	0.0	0.0	0.0	0.0	0.0
17	16.5	0.0	0.0	0.0	0.0	0.0
18	17.2	0.0	0.0	0.0	0.0	0.0
19	18.0	0.0	0.0	0.0	0.0	0.0
20	18.7	19.5	0.0	0.0	0.0	0.0
21	19.5	20.3	20.5	0.0	0.0	0.0
22	20.2	20.9	21.1	21.5	0.0	0.0
23	20.8	21.5	21.7	22.2	0.0	0.0
24	21.3	22.1	22.3	22.9	23.5	0.0
25	21.8	22.7	22.9	23.6	24.3	0.0
26	22.1	23.2	23.6	24.4	25.0	25.5
27	22.3	23.8	24.2	25.0	25.7	26.1
28	22.5	24.3	24.8	25.7	26.3	26.7
29	22.6	24.8	25.4	26.3	26.9	27.3
30	22.6	25.2	25.9	26.8	27.5	27.9
31	22.7	25.5	26.4	27.3	28.0	28.6
32	22.8	25.8	26.8	27.7	28.5	29.2
33	22.9	26.1	27.3	28.1	29.0	29.9
34	23.0	26.4	27.7	28.5	29.5	30.5
35	23.1	26.6	28.1	28.9	30.0	31.1

Table B.5. Mean age at first child and average birth interval, cohort 1940-44.

Mean age at first child and average birth interval Cohort 1940-44						
Birth order						
Age	1	2	3	4	5	6
16	0.0	0.0	0.0	0.0	0.0	0.0
17	16.5	0.0	0.0	0.0	0.0	0.0
18	17.1	0.0	0.0	0.0	0.0	0.0
19	17.8	0.0	0.0	0.0	0.0	0.0
20	18.5	1.0	0.0	0.0	0.0	0.0
21	19.2	1.1	0.3	0.0	0.0	0.0
22	19.8	1.3	0.5	0.4	0.0	0.0
23	20.4	1.5	0.7	0.7	0.0	0.0
24	20.8	1.7	1.0	1.0	0.0	0.0
25	21.2	2.0	1.2	1.2	0.9	0.0
26	21.5	2.2	1.4	1.5	1.1	0.4
27	21.6	2.5	1.6	1.7	1.2	0.6
28	21.7	2.7	1.8	1.9	1.4	0.9
29	21.8	3.0	1.9	2.1	1.6	1.1
30	21.8	3.2	2.1	2.2	1.8	1.4
31	21.8	3.4	2.3	2.4	2.0	1.7
32	21.9	3.6	2.4	2.5	2.1	2.0
33	21.9	3.8	2.5	2.6	2.3	2.3
34	21.9	3.9	2.7	2.7	2.5	2.6
35	21.9	4.0	2.8	2.7	2.6	2.8
36	21.9	4.1	2.9	2.8	2.7	3.0
37	22.0	4.1	2.9	2.9	2.8	3.2
38	22.0	4.2	3.0	2.9	2.9	3.4
39	22.0	4.2	3.0	2.9	3.0	3.5
40	22.0	4.2	3.1	3.0	3.0	3.6
41	22.0	4.2	3.1	3.0	3.0	3.7
42	22.0	4.2	3.1	3.0	3.1	3.7
43	22.0	4.3	3.1	3.0	3.1	3.8
44	22.0	4.3	3.1	3.0	3.1	3.9
45	22.0	4.3	3.1	3.0	3.1	3.9

Table B.6. Mean age at first child and average birth interval, cohort 1950-54.

Mean age at first child and average birth interval Cohort 1950-54						
Birth order						
Age	1	2	3	4	5	6
16	0.0	0.0	0.0	0.0	0.0	0.0
17	16.5	0.0	0.0	0.0	0.0	0.0
18	17.2	0.0	0.0	0.0	0.0	0.0
19	18.0	0.0	0.0	0.0	0.0	0.0
20	18.7	0.8	0.0	0.0	0.0	0.0
21	19.5	1.0	0.3	0.0	0.0	0.0
22	20.1	1.1	0.5	0.4	0.0	0.0
23	20.6	1.3	0.7	0.7	0.0	0.0
24	21.0	1.6	0.9	1.0	0.6	0.0
25	21.4	1.8	1.1	1.2	0.8	0.0
26	21.6	2.1	1.4	1.5	1.0	0.5
27	21.8	2.3	1.6	1.7	1.2	0.7
28	21.9	2.6	1.8	1.9	1.4	0.9
29	21.9	2.9	2.0	2.1	1.6	1.1
30	21.9	3.1	2.2	2.2	1.8	1.4
31	21.9	3.3	2.3	2.4	1.9	1.7
32	21.9	3.5	2.5	2.5	2.1	2.0
33	22.0	3.7	2.7	2.6	2.3	2.3
34	22.0	3.8	2.8	2.7	2.5	2.5
35	22.0	4.0	3.0	2.8	2.7	2.8