Children and the Fate of Ever-Married Men and Women in Early Modern Japan

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Satomi Kurosu

Reitaku University
2-1-1 Hikarigaoka, Kashiwa-shi
Chiba-ken, 277-8686 Japan
skurosu@reitaku-u.ac.jp

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Satomi KUROSU

Reitaku University

In economic terms, children are "marriage-specific capital" (Becker 1974; Becker et al., 1977). Children represent an investment in a marriage and are thus an incentive not to dissolve that marriage; however, if that marriage does dissolve, they slow remarriage because they reduce the expected gain to the man from the new marriage (Griffith 1980). A question often asked in contemporary societies, whether children are economic assets for parents or liabilities, can bring a fresh approach to studies of historical populations. In many historical agrarian societies, (adult) children constituted the only form of health insurance and old-age pension available to their parents (Tsuya and Nystedt 2004: 403), as well as being the main source of labor for farms and households. Further, children had specific significance in societies where family succession was emphasized.

What did it mean to have children or not to have them in a society with a strong emphasis on family continuation? Did children as marriage-specific capital strengthen a marriage, as a Japanese proverb has it---"A child binds a married couple together (*Ko ha Kasugai*)"? Further, how did the sex composition and number of children affect the lifecourses of men and women after marital dissolution? This study examines the outcomes of marriage, focusing particularly on the relationship between children and marital relationship of males and females as a step toward understanding the relationship between marriage and reproduction in a stem family society.

While marriage in rural communities in preindustrial Japan tended to be early and universal, many first (and subsequent) marriages ended due to divorce or death of a spouse. Recent studies have begun to demonstrate the detailed patterns and factors related to marital dissolution and remarriage (Saito and Hamano 1999; Kurosu 1998, 2004, 2007). The present study examines the role of children in the marital stability as well as the lifecourses of men and women after marital dissolution. It draws data from the local population registers in two northeastern agricultural villages during the period 1716-1870 and examines the effect of children on the probabilities of divorce and remarriage, applying an event history analysis. The paper first discusses the characteristics of marriage and its outcomes in early modern Japan compared to other societies in the past. That is followed by descriptions of the data and the setting. The study continues with a general observation about outcomes of marriage over that period of a century and a half, followed by a multidimensional approach applied to divorce and remarriage, using "discrete-time event history analysis," a multivariate analysis model in order to clarify the role of children in men and women's marital and postmarital lifecourses.

MARRIAGE AND ITS OUTCOMES IN EARLY MODERN JAPAN

Studies on nuptiality of eighteenth- and nineteenth-century peasants have shed light on marriage in preindustrial Japan, particularly on the ways it differs from the western European model of late marriage and celibacy (Hajnal 1965, 1983). Japanese peasants married earlier than their European contemporaries but perhaps later than the Asian standard. Regional variation, however, is large: the age at first marriage ranges from 14 to 25 for women and 17 to 28 for men (Kurosu, Tsuya and Hamano 1999). Northeastern Japan of this study was at the lower end of this distribution.

Early and universal marriage provided no guarantees of longevity, fecundity, or harmony. Marriage could easily end when one party to it died. Moreover, many marriages were terminated by divorce shortly after the wedding. The prevalence and speed of divorce in early modern Japan, particularly in the northeastern region, support the claim that "trial marriage" was accepted and even expected (Fuess 2004). A recent study on female divorce using multivariate analysis (Kurosu 2004) revealed that such testing was important, particularly in uxorilocal marriage. It is only after marriages had survived the "testing" phase that economic conditions and household characteristics as well as husband information exert power in explaining how marriages break down.

A considerable number of marriages, therefore, joined a never-married individual to one who had lost a spouse to divorce or death. Limited studies suggest that remarriage was prevalent but also with great regional variation (Smith 1977; Kito 1988; Kurosu 1998; Kurosu, Tsuya and Hamano 1999). Remarriage took place for both widowed and divorced men and women and often occurred very soon after marital dissolution. The custom and tradition of remarriage probably insured that dissatisfied newlyweds would divorce. From these studies of marriage dissolution in early modern Japan it appears that the end of any particular marriage triggered not a family breakdown but instead a family re-composition, one that fostered individual well-being as well as ensuring the survival of the household, an economic unit whose survival was important to the whole village, where lives were structured around farming and where the tax burden was shared.[1]

It is interesting to note that while the timing and patterns of the initial stage of marriage in Japan differed starkly from Hajnal's (1965) "West European Marriage pattern," Japan shared one central feature of European nuptiality, the low age at which marriages ended and the high proportion of remarriage (van Poppel 1995). Several key factors that emerge from the studies on remarriage in

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[1] Taxes were imposed on an entire village, and the households of titled peasants were responsible for shouldering these village-based taxes according to the expected yields of land they held (Tsuya and Kurosu 2004).

eighteenth- and nineteenth-century Europe and the United States are therefore suggestive in understanding the Japanese case: They are age, gender, wealth, child, and trends over centuries (e.g. Grigg 1977; Dupaquier et al. 1981; Mitterauer and Sieder 1982; Knodel and Lynch 1985; van Poppel 1995, 1998; Lundh 2002). These studies all point to pronounced age and sex differentials in the probabilities of remarriage. Temporal trend is also a major concern in these studies. They suggest that probabilities of remarriage declined rapidly with age. Widows were far less likely to remarry than widowers. A secular decline in the tendency to remarry was also found in many of these studies. Explanations of the decline included the mortality decline, attitudinal change toward marriage and remarriage, change in the local marriage market, and change of roles in and ideas about family as an economic unit of production. The effects of socioeconomic factors (e.g. occupational groups, peasant vs. nonpeasants, landless vs. landowners) and children (numbers and age) are also important, but the findings of these effects were not as straightforward as demographic factors. Religious and legal factors pertaining to widowhood and succession were also taken into account in considering, for example, whether divorce or remarriage is favorable to an individual's economic well-being.

In Japan, unlike Europe, there were no legal or religious restrictions on divorce and remarriage. The only relevant customary law of this region was that if a husband absconded and did not return for ten months, his wife might legally remarry (Nihonmatsu-han-shi 1973: 572). As for child custody after divorce (and probably after being widowed), flexibility in family re-composition resulted from two guiding principles existing side by side in both custom and law (Fuess 2004: 91). One directed that custody of a child after divorce go to the same-sex parent: a boy to the father, a girl to the mother. The other was that all offspring of the marriage, regardless of sex, remain together under the custody of one parent---often in the household of marriage (i.e. the father in virilocal and the mother in uxorilocal marriages). These arrangements as well as the absence of strong normative or legal restrictions on remarriage probably made access to remarriage easier in Japan for both sexes than it was for their western counterparts.

Studies point to the fact that sex, gender, socioeconomic factors, and children all have important bearing on probabilities of marriage although the results require further examination (Smith 1972; Kito 1988; Kurosu 1998). The likelihood of women's remarriage is negatively associated with their age at first marital dissolution (Saito and Hamano 1999). In the village of Yubunezawa (central-east Japan), for example, Kito found that almost 80 percent of women and men who experienced marital dissolution remarried before reaching age 30 and age 45, respectively. After these respective ages, the rate of remarriage for both women and men dropped drastically (Kito 1988).

Saito and Hamano emphasize the goal of a family to continue and suggest that remarriage might be influenced by whether the family has reached the target fertility or by the age of the eldest child (Saito and Hamano 1999). The effect of children was considered important in many European studies as

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well where widows with no children and widowers with small children were inclined to remarry due to economic and social pressure (Blom 1991). Children might have some additional significance in Japan where families and households were characterized by the stem family system with strong normative orientations toward inheritance and succession by the eldest child.

SOURCE AND MEASUREMENT

Source and Setting

This study draws its data from the local population registers called *ninbetsu-aratame-cho* (NAC) in Shimomoriya and Niita, two farming villages in the present Fukushima prefecture in northeastern Japan (see Figure 1). These NAC records cover a period of 154 years, 1716-1869 for Shimomoriya and 1720-1870 for Niita, with only a small number of intermittent years missing. The registers were compiled annually based on the principle of current domicile, that is, they are all *de facto*. Registers noted all major demographic events for all individuals residing in the villages, including birth, death, marriage, divorce, and migration. In addition, exits from and entries into the villages (as well as movements within the village and outside it) were recorded in detail, allowing this study to follow the outcomes of marriage. Exits for unknown reasons were extremely rare, accounting for less than 1 percent of all recorded exits in the NAC registers in both villages. The excellence of the data provided in the NAC registers for such a long period places them among the best documentation for historical populations in Japan.[2]

<Figure 1: Map of Shimomoriya and Niita>

The two villages were almost exclusively agricultural. Because of underdeveloped agricultural technologies at that time, the inhabitants of the two villages suffered from fluctuations in agricultural output (Narimatsu 1985, 1992). Their standards of living were near or below subsistence levels at times of crop failure. The population trends of the two villages reflect the economic hardships of peasant life (see Figure 2). In the first of their registers, the population of Niita was 538, that of Shimomoriya, 419. Both villages were then on the decline, because of famines and spells of bad weather (Koriyama-shi 1981: 340-41). These large population losses in Shimomoriya and Niita before 1840 are explained by losses from migration (negative net-migration), and by negative natural increases resulting from a relatively low birth rate and a relatively high death rate. The population figures began a gradual upturn only after the 1840s, as a general improvement of the climate resulted in less frequent famines and as more productive agricultural techniques improved living standards in the two villages.

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2 The history of population registers, their reliability, their compilation and computerization of the data sets are described in detail elsewhere (Hayami 1979; Cornell and Hayami 1986; Ono 1993).

<Figure 2: Population size of the villages of Shimomoriya and Niita>

Definition and measurements

Marriage and its registration in preindustrial Japan were largely contextual, being influenced by local customs and socioeconomic developments (Tsuya and Kurosu 2000a). In this study, the timing of marriage, marital dissolution, and remarriage is inferred from records in the NAC registers. In many other Tokugawa villages, as in these two, the population registers did not record the dates (month and year) of marriage, marital dissolution, or remarriage. The timing (year) of first marriage and remarriage is inferred from the record of a new household member (one not in the previous year's register) along with concomitant changes in the relationships of household members to the head. The timing (year) of dissolution must be inferred from the record of a spouse's departure from the marriage household (divorce) or from the record of a spouse's death.   In the registers, divorce is clearly marked by the annotation "*modori*" (return) or "*huen*" (no bond).

The analysis also controls for two types of marriage---uxorilocal and virilocal marriages. In case of divorce, it is determined solely in term of postnuptial residential patterns after marriage; and in case of remarriage, it is determined by the information of previous marriage (i.e. before the dissolution of the marriage). Since marriage did not mean a formation of a new household, men and women in these records by definition came to live in one of their (parental) households upon marriage. When a woman remained at her natal home and her husband joined the household, she was recorded in the register as having married an adopted son (*muko-yoshi*): a "uxorilocal" marriage. When a man remained at his natal household and brought his wife there, upon marriage, the marriage is "virilocal."

A difficulty of the study of the outcomes of marriage lies in defining the risk population. If we stick to individuals who were under constant observation from birth, our data will be too small and selective. However, a problem arises for individuals who had already been married when the records began or for those who migrated into the villages via marriage.   Therefore, following a previous study on nuptiality (Tsuya and Kurosu 2000a), I use a less conservative definition for the first marriage and call it the first "observed" marriage if (1) women whose marriages were observed for the first time and who first appeared in the population registers under age 50 with no spouse and no children; or (2) women who were under age 50 and were already married at the start of the register, and there was no indication of previous marriage.   Thus the following analysis on divorce looks at females who were married and aged 50 and below, excluding obvious cases of second and higher order marriages. The higher order marriage is usually thought to have different social processes from the first marriage. In fact, there was a considerable number of females (and males) who repeated marriage, divorce and remarriage. The highest order marriage found was four. This group of people deserves separate investigation in a future study.

Although the youngest recorded age at marriage was 3 for females,[3] the analysis includes females of reproductive age, 15-49, in order to focus on the effects of children.   With these criteria, the analysis includes 21,618 person-years, that is, 1,622 women or, put differently, 1,622 female first "observed" marriages which were at risk of divorce, with 361 recorded divorces in the entire 154 years of observation.   Among those, 324 women were already married at the start of the records. Unless noted in the register, their age at marriage and type of marriage cannot be identified. I will include these cases in the event history analysis specifying their age at marriage, marital duration, and type of marriage as unknown.

It is not possible to follow individuals over time once they exited from the observation in the two villages. On the one side, there were those who came to live in the villages upon marriage from outside. Some of these individuals were inclined to return to their home villages once their marriage ended.[4] Some others chose to migrate for service or work or to remarry.[5] Others who remained in the villages remarried or died without having the chance to remarry. Thus, it should be kept in mind that upon any marital dissolution, one had a risk to remarry, to migrate out, or to die. Since remarriage is a process of competing risks, the choice and speed of remarriage can be affected by the changes in mortality and migration patterns over time. These competing risks will be taken into account in the analysis. In the analysis of remarriage, for example, those whose marital dissolution occurred for reasons other than remarriage, namely, out-migration and death, are removed from the population at risk.   Because divorced and widowed men and women are exposed to the 'competing risks' (Allison 1984) of different types of exits, the occurrence of one type simultaneously removes those individuals from the risk of remarriage.

For the entire observation period, the youngest recorded age at remarriage in these villages was 13 for men and 10 for women. Remarriage started extremely early in these populations that were quite young

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3 The "age" refers to the age measured in terms of the timing of NAC registration (i.e. number of annual registration each individual went through after birth) rather than chronological age (age according to Gregorian calendar). Provided that data used to construct the covariates for multivariate analysis are all organized in terms of the timing of the annual population registration, it is appropriate to use NAC age, rather than chronological age. Tsuya and Kurosu (2000b: 421-55) discuss the specifics of the procedures for the construction of the machine-readable data files used in the analysis.

4 Non-native widowed population had a choice to remain in the households of marriage; non-native men in uxorilocal marriages and non-native women in virilocal marriages had to return home upon divorce.

5 Service migration included longer-term live-in servants and short-term contract labor in neighboring villages and towns. The destination and reasons for migration were clearly noted in the registers.

at their first marriage.[6] Since the majority of men and women married before reaching age 35, the proportion of those staying single was extremely low after this age (less than 7 percent for men and less than 2 percent for women). The maximum age at remarriage of men was 72, of women 74. Since the majority of remarriage (87 percent for men and 89 percent for women) took place before age 50, this study deals with the population age 15-49.   Considering the effect of children again, the range is limited to women's reproductive age. For comparison, I will use the same age range for men.[7] Also, since non-native men and women in principle had to return to their home villages when being divorced, I will exclude these populations (83 men and 201 women). Thus the analysis on remarriage, and its competing risk, out-migration, includes 2,396 men-years (567 individuals) and 2,295 women-years (489 individuals) with 387 and 344 recorded remarriages, and 251 and 117 recorded out-migrations in the entire 154 years of observation.[8] It should be noted that since the attitudes toward divorce and remarriage were extremely flexible, some men and women remarried more than once. Among remarriage cases, about 20 percent were married three or four times. While the analysis on divorce deals only with females' first marriages, the analysis on remarriage and out-migration utilize all the population at risk without limiting to their first dissolution of marriage.

One last remark is necessary regarding children. Two types of children are differentiated in the data: surviving children and coresiding children. Surviving children are women's own children whose births and survival are observed. Coresiding children include not only women's own children but also adopted children and in-laws. Adoption was quite common in the period and the area of observation. Moreover, more than one-third of women married men who were divorced or widowed (i.e. although it was the first marriage for the woman, it was not the first one for the man). Thus coresiding children could include children from her husband's previous marriage. Further, in some cases, coresiding children can be spouses of their children.

OUTCOME OF FIRST MARRIAGE AND CHILDREN

Before getting into the details of the outcome of marriage, a general pattern of first marriage and remarriage needs to be understood. Table 1 presents rates of first marriage and remarriage by sex and

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6 The youngest recorded age at first marriage in these villages was 3 for females and 6 for males. But such young marriages were rare.

7 Kurosu (2007) deals with remarriage analysis for age 15-74 using the same data set.

8 The number of men differs from the number of women because the observation is based on individuals. Some individuals came back (in-migration) to the two villages upon marital dissolution elsewhere and are included in the risk population of remarriage. Some left the two villages (out-migration) upon marital dissolution and therefore are not included in the risk population.

age. When the data are sliced into four periods, the numbers become too small to show the pattern. For that reason, the rates shown in Table 1 are for the entire period of 1716-1870. The rates jump and peak at ages 15-19 and 20-24 for males, and at ages 10-24 for females. The peaking of first marriages at age 15-19 among females is distinctive. Almost all women married before reaching age 30. Less than 5 percent remained unmarried until age 50. These figures reflect the characteristics of early and near universal marriage. The remarriage rates jump immediately after the precipitation of first marriage. Peaking at age 15-19, both rates for men and women gradually taper off but the rates fall drastically at age 35-39. This reduction should be interpreted in relation to an exceptionally early curtailment of family building in these villages (the mean age of women at the birth of their last child was 32.7) among women whose first marriages were completed (Tsuya and Kurosu 1999). Women after passing this age may not have been socially or culturally viable in the remarriage market. It is interesting to note that the gap between male and female remarriage rates is not as large as those usually found in the West.

<Table 1>

Next, I will look at the outcomes of the observed first marriages and their relation to reproduction. Table 2 presents the percentage distribution of consequences of observed first marriages of women in the two villages. Here the analysis is limited to those individuals whose timing of first marriage is recognized in the register (excluding 324 women who were already married when the registers began). I then divide women's first marriages into two groups: completed first marriages (first marriage in which wife survived until the end of the reproductive span, reaching age 50) and uncompleted first marriages. For uncompleted first marriages, I look at the reasons of marital disruption. The information on marriage duration and children are calculated and contrasted for completed and uncompleted marriages.

<Table 2 >

As shown in the last column of Table 2, only 30 percent of first marriages were completed in Niita and Shimomoriya. This low rate of completion is at the lower end, compared to the rates of other Tokugawa Japanese villages. For example, 44-50 percent of first marriages were completed in Nishijo (1773-1869) in central Japan and Nomo (cohorts 1802-1821) in southwestern Japan (Kurosu, Tsuya and Hamano 1999). In the village of Yokouchi in Suwa Province, around one-third of first marriages in 1601-1871 remained intact when the women reached age 50 (Hayami 1997: 209). This variation might be the result of the age at marriage which might be caused partly by mortality and migration patterns.   The mortality level in Shimomoriya and Niita appears to be, if not the highest, one of the highest among the Tokugawa villages studied. The estimates of life expectancy at age 1 are 42.2 for males and 42.1 for females.   People in the northeast married earlier probably because of the

higher mortality rate. They went for service only after they were married, thus securing the marriage at the personal and the household levels and preventing the loss of population due to out-migration at the village level. With higher mortality came the greater chance of losing one's mate or dying oneself.

What made the proportion of uncompleted marriage higher in the two villages, however, was not solely higher mortality. This area is known for its high frequency of divorce. Indeed, divorce was the most common reason for marital dissolution in Niita and Shimomoriya. Among peasants, 31 percent of the first marriages dissolved in divorce before the individuals reached age 50, surpassing the proportion becoming widows and widowers. There were large differences in the longevity of first marriages according to the reasons of marital dissolution. The mean duration of first marriage for women whose marriage ended by divorce was extremely short, less than 5 years, while those ended by other reasons are between 12 and 18 years. Accordingly, the mean age at first marital dissolution was much lower for divorced women than for widowed women. In the two villages, the median age of age at marriage was 15. This makes the age at the end of marriage due to divorce extremely young—21 years old. This is almost the same as the mean age at first marriage in other regions of Japan.

What are the effects of these marital disruptions on reproduction? Table 2 suggests that the impact of divorce and spousal/own mortality was large on the mean number of children as well as the proportion of women who were childless at the end of the first marriage. Overall, the difference of children ever-observed was 1.56 between completed and uncompleted marriages. Compared to the women in completed marriage, the mean number of surviving as well as coresiding children was 1.01 and 0.94 smaller among women in uncompleted marriage. Women whose marriage ended in divorce had only one-third the number of children women in completed marriage had. Further, the proportion childless was less than 20 percent for women in completed marriage while almost half of women in uncompleted marriage were childless, whether it to be children ever-observed, surviving or coresiding. Again, the proportion childless was the largest among women whose marriage ended in divorce. Many women were divorced childless. However, this should not be interpreted as meaning that they were divorced because they could not bear children. Tsuya and Kurosu (1999) estimated that it took women in complete marriages around 4.5 years on average, to start family building.   The couples in Shimomoriya and Niita delayed their family building until well after their marriage. The mean duration of marriage among those women whose marriage ended in divorce was about the length of the estimated mean interval between marriage and first birth. Thus, many women must have experienced divorce even before having the chance of bearing the first child.

These findings clearly suggest that the reproduction rate would have been hampered severely by the short duration of first marriage unless these women caught up with the fertility level of the women in completed marriage by quickly remarrying. Thus remarriage becomes important not only as a survival strategy for these women but also for maintaining the population of these villages.

Previous studies do suggest that remarriage quickly followed the marital dissolution. According to studies based on the same data set, the proportion remarried (by age 50) among women who "survived" for at least 5 years after their first marital dissolution was extremely high in Shimomoriya and Niita: around 70 percent (Kurosu, Tsuya, and Hamano 1999). This proportion was found to be much higher than those in a southwestern village, Nomo (55 percent), and a central village, Nishijo (25 percent). The mean years from marital dissolution to remarriage were only 2 to 3 years in all cases of marital dissolution except those where a spouse absconded. Remarriage in these villages took place early and quickly after the marital dissolution.

Finally, it is important to examine the consequences of marital dissolution contrasting competing risks. The analysis in Table 3 includes all men and women at risk of remarriage---whose marriage ended due to divorce or spousal death. At least three major exits from the condition of divorcehood/widowhood were possible: remarriage, migration, and death. Remarriage appears to have been the most favored consequence (Table 3). However, many men and women exited via out-migration. A substantial proportion of men and women left the villages either to return to their home villages or to work or move elsewhere. They both migrated out of the villages. The mean years from marital dissolution to remarriage and migration were very short---about 2 years. The rates and the number of years from marital dissolution suggest that remarriage and out-migration probably were two competing risks upon the dissolution of marriage, while death was a natural consequence which occurred to those who chose neither of the other two types of exits.

<Table 3>

EVENT HISTORY ANALYSIS

To reveal a mechanism leading to divorce and remarriage, and in particular, to understand the role of children in those events, I conduct discrete-time event history analysis, using a series of logistic regression models which relate the probability of divorce and remarriage in the next year to economic circumstances and children's information of individual men and women. Three sets of analysis will be performed: divorce, remarriage, and out-migration as an alternative to remarriage. First, analysis on divorce includes females aged 15-49 who were married (observed first marriage) and resided in the two villages prior to their marital dissolution. The dependent variable in the analysis is a dichotomous variable measuring whether or not a married woman had divorce within one year from one NAC registration to the immediately succeeding NAC registration. Second and third sets of analysis include the same set of population at risk---males and females aged 15-49 who were once married but whose marriage ended and who resided in the two villages. Therefore, those who had to leave the villages upon divorce (i.e., non-native men and women) were excluded from the analysis. The

dependent variable in the analyses is the dichotomous variable measuring whether a man or a woman at risk exited from widowhood/divorcehood (via remarriage or out-migration) within one year from one NAC registration to the immediately succeeding NAC registration.

The models are a modification of the series of analyses in the Eurasia Population and Family History Project.[9] The results can be compared with the analyses for first marriage (Tsuya and Kurosu 2000a), divorce (Kurosu 2004), and remarriage (Kurosu 2007) in order to obtain an overall picture of the marriage system in early modern Japan. Following the previous analyses on deaths, births, and nuptiality (Tsuya and Kurosu 2000b, 1999, 2000a), the discrete-time event history analysis model has three general groups of covariates: (1) demographic variables including variables related to marriage or previous marriage, (2) socioeconomic factors, and (3) family and household context. For (3), the effects of children are of particular concern in this paper.

First, the demographic variables are control variables including current age, time period, residing village, and for divorce, marital duration, and for remarriage and out-migration, duration since most recent marital dissolution. These are always included in the model. Current age and duration since marital dissolution are continuous variables. For divorce, marital duration is a categorical variable consisting of 4 groups: up to 3 years, 4-6 years, 7 years and more, and duration unknown. Using the first three years as the reference, three dummy variables were constructed. Two other control variables are time period and residing village. There are four time periods: 1716-1759, 1760-1799, 1800-1839, and 1840-1870. Using the earliest period of 1716-1759 as the reference, three dummy variables were constructed. As the records from the two villages are pooled for this analysis, a dichotomous variable is also included to control for the possible village effect. If an individual was residing in Shimomoriya, the value of the covariate is 1; 0 if he/she was a resident of Niita.

Some other control variables include two different types of marriage (uxorilocal and virilocal) as well as two different types of marital dissolution (divorce and spousal death). These categorical variables were constructed and included in all the models. For divorce, information about whether it was the first marriage of husband or not was also included.

Second, socioeconomic factors consist of household landholding, local rice prices, and crisis year. Variations in local economic conditions are measured by the logged rice prices in the local market of Aizu, which indicate annual fluctuations in agricultural output in the local area. Although they may not be the most accurate indicator of local economic conditions, annual variations in rice price in Aizu were found to reflect fairly well crop failures in the area. The findings from previous studies

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9 For the first comparative work of the Eurasia Project, see Bengtsson, Campbell, Lee *et al.* (2004). For the specifics of the model for Japan, see Tsuya and Kurosu (2000b).

regarding the relationship between local economic conditions and demographic outcomes are not straightforward. Crisis year is a dichotomous variable, and is 1 when the rice price exceeds more than two standard deviations from the mean. This captures the economic and mortality crisis triggered by the major famines. Household socioeconomic status is measured by the size of landholding (in *koku*).

Third, for children, both surviving and coresiding children are used. Four categories are used to show the number and sex of surviving children: no child alive; no son, only daughter(s) alive; no daughter, only son(s) alive; and at least one son and one daughter alive. Using the sex-balanced offspring set (the last category) as the reference, three dummy variables are entered. In the same manner, coresiding children has four categories: no coresiding children; only coresiding son(s); only coresiding daughter(s); and at least one son and one daughter present in household. The distribution of children by sex was important in family building of the couples in the two villages. Other measures to account for the presence of children—for example, number of children, age of children, marital status of children, were also examined. However, since the numbers become smaller as the information on children becomes more detailed and thereby make the result statistically unstable, I decided to stick to these simplest sets of variables and mention relevant results when necessary. The presence of both male and female children (sex-balanced offspring set) may reduce the incentive for men and women to remarry because the main objectives of marriage and the family in Tokugawa agrarian society (securing the succession and continuing the family line) have been assured.

Table 4 shows the means of the independent and control variables used in the analysis. For continuous variables, such as rice price and household landholding, they are means of the risk population. Other variables are categorical, and the sum of the categories is 100 percent. Tables 5-7 show the results of event history analysis. Although all the covariates mentioned above are included in the models (and shown in the tables), the discussion below focuses mainly on the effects of socioeconomic factors, marriage type, and children.[10]

<Table 4>

Divorce and children

Model 1 of Table 5 is the base model including all the demographic variables and marriage type. Since there was a strong interaction between rice price and the type of marriage, interaction terms were included. Controlling for demographic factors, socioeconomic factors show strong and significant effects on the likelihood of divorce. Divorce was much more likely at time of short-term economic stress and was much less likely at time of crisis years. Further, it was women in virilocal

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10 Further discussions as well as the test of other covariates (including parents, relationship to household head) can be found in Kurosu (2007).

marriage who were more likely to experience divorce at the downturn of the local economy.

<Table 5>

Controlling for demographic and economic factors, Models 2 and 3 look at the effects of surviving and coresiding children. Inclusion of the sex composition of children reduced the log-likelihood dramatically in Models 2 and 3.   In the fertility analysis using the same data (Tsuya and Kurosu 1999), the factor that had the strongest and most significant fertility effect was number and sex composition of surviving children.   The same variable exerts power on divorce risk as well. Relative to women who had both surviving son(s) and daughter(s), women without surviving children were 6 times more likely to experience divorce. Those with only surviving son or surviving daughter were more than twice as likely to experience divorce. Once women had a son and daughter, her marriage was greatly secured. Since couples' fertility behavior in these villages was found to opt for a sex-balanced offspring set (Tsuya and Kurosu 1999), their marriage was probably insured after having obtained this goal. The same mechanisms are also found for coresiding children. The odds ratios and p-values suggest that the sex composition of the surviving children probably was more important than those of coresiding children for the propensity of experiencing divorce.

Remarriage and children

The second set of analysis is conducted for men's and women's remarriage (Table 6). Here, coresiding children rather than surviving children are used to compare males and females (Model 2).[11] Controlling for the demographic variables, socioeconomic factors worked differently for male and female remarriages. Remarriage of males and females both responded negatively to the annual fluctuation of local rice prices. Just as the first marriage was postponed in times of economic hardship (Tsuya and Kurosu 2000a), remarriage was also unlikely when local economic conditions were unfavorable.

<Table 6>

It was only women who were affected by household landholding. The negative and statistically significant effect of the landholding suggests that the higher the socioeconomic status, the lower the risk of female remarriage. The effect of landholding is quite large. If women were living in a household of average landholding size (female average was 13 *koku*, Table 4), they were 31.2 percent (13 x 0.024) less likely to remarry compared to women living in landless household. This suggests that households at the higher socioeconomic status could afford to support widows and divorced females. Alternatively, one can speculate that women in households of lower socioeconomic status

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11 The results are about the same when "coresiding children" is replaced by "surviving children" for females.

had easier attitudes toward remarriage and thus remarried more readily. A close look at the difference between the two types of previous marriage suggests that household landholding showed a significant and negative effect when women married uxorilocally (Kurosu 2007). These were the inheriting daughters of their households. Wealth did not mean an increase of bargaining power when recruiting a second husband but rather the freedom to stay unmarried (i.e. they did not have to seek partners for survival).

Other things being equal, men and women without children or with only son were significantly less likely to remarry than those with a sex-balanced offspring set (Model 2). However, there was a strong interaction between children and type of previous marriage for females. For females whose previous marriage was uxorilocal, not having children or having only one son or daughter meant a strong inclination to remarriage. They were to remarry again at their natal household.

Another interesting finding not shown in the table is the age of women's own children. The same set of analysis was conducted for females aged 15-49, using age of eldest child to check whether the age of children mattered for remarriage or not. Compared to those women who had the eldest child age 16 and above, those with age 1-6 and age 7-11 were twice as likely to remarry and the effects were statistically significant. However, once the eldest reached age 12-15, no significant effect was found. This supports Saito and Hamano's hypothesis about the relationship between remarriage and the target fertility of the family (1999). The finding suggests that once the eldest child reached age 12-15, the succession of the household was assured and that female remarriage was no longer necessary.

Children and alternative choice
Finally, Table 7 contrasts the results of event history analysis for remarriage and out-migration. As shown in Table 3, out-migration was another prominent venue to exit from widowhood or divorcehood. The same set of analysis was conducted for remarriage (the result of remarriage is the same as those in Table 6).

<Table 7>

The results are contrasting between remarriage and out-migration in many ways. First, although not statistically significant, men and women were less likely to remarry but more likely to migrate out upon economic downturn in the area. Divorced men compared to widowed men were much less likely to remarry but extremely likely to migrate out. Uxorilocally married men were 20 percent less likely to remarry while they were four times more likely to migrate out than virilocally married men. This was not the case for women. Uxorilocally married women (unless they were with no children or only son/daughter) were 73 percent likely to remarry and 46 percent less likely migrate out than virilocally married women. They were inheriting daughters who were to perpetuate the family line.

The contrast of the effects of children is also striking. When men did not have any children or had only son(s), they were about 44 percent and 52 percent less likely to remarry compared to men with both son(s) and daughter(s). Instead, those men were more likely to migrate out than to remarry. When their marriage ended and they had no children or only son(s) or only daughter(s), they were 1.4 to 2.0 times more likely to migrate out than those with sex-balanced offspring set. Women without any children were also 2.3 times more likely to migrate out of the village compared to those who had both son and daughter.[12] For men and women without children or without complete set of children, they were more likely to choose service migration, returning to their origin, or absconding.

SUMMARY AND DISCUSSION

Marriages in the two agrarian villages in northeastern Tokugawa Japan were universal and very early, concentrating in a narrow age band. There probably existed strong normative orientations toward culturally and socially desirable ages, at which men and women in the two villages were exposed to pressure to marry. Marital dissolution due to divorce, death of spouse, or absconding was a common experience and this made the duration of marriage very short. In turn, this made the mean number of children much smaller and the proportion of no children much bigger than they were in completed marriage (those continued to age 50). If the institution of remarriage had not been so accessible, these characteristics would have endangered the survival of individuals as well as the village population.

In all the analyses, the effects of children were large and significant in determining the life chances of men and women. The analysis on divorce showed that controlling for demographic and socioeconomic factors, women without surviving children were more than six times likely to experience divorce compared to those with both son(s) and daughter(s) either surviving or coresiding. The evidence of this study suggests that having children strengthened marriages. However, we need to be careful about concluding, as some scholars do, that "infertility" was the driving force of high divorce rates in early modern Japan. Many marriages ended without waiting for the average years (interval) between marriage and the first birth. Indeed, some women had children after they remarried (Kurosu 1998a), and peasants could often adopt children when there were no sons and daughters (Kurosu and Ochiai 1995; Kurosu 1998b).[13]

12 Interaction terms suggest that this was not the case for uxorilocally married women (not shown in table).

13 It is interesting to add a finding of Fuess (2004: 78) that infertility was conspicuously missing in the 1875 survey of local customs as a reason for divorcing a wife. Barrenness existed as an excuse for divorce, but according to popular culture, it was not a legitimate basis for divorce. Fuess found in the 1875 survey

Further, having one child did not secure the marriage. Women with only son(s) or only daughter(s) were also more likely (more than twice) to experience divorce than those with sex-balanced offspring set. The Japanese proverb, "A child binds a married couple together", should then be rephrased, "A sex-balanced offspring set binds a married couple together." This relates to the finding of Tsuya and Kurosu (1999) that in these villages there was a clear indication of the widespread and sophisticated use of sex-selective and parity-specific infanticide to achieve a relatively small family size with a sex-balanced (and possibly sex-ordered) offspring set.

The presence of children affected the probabilities of remarriage differently for men than for women, as did type of postnuptial residence (i.e. virilocal or uxorilocal). Having no children or only one son or daughter, men were discouraged from remarrying compared to those who had at least one son and daughter. Women not having children in uxorilocal marriage were encouraged to remarry while those in virilocal marriage were discouraged from remarrying upon marital dissolution. Instead, these men and women (in virilocal marriage) without children or with an incomplete set of children were highly likely to migrate out of these villages. Some of these individuals were inclined to return to their home villages once their marriage ended. Some chose to migrate for service or work rather than remarry. When ever-married men and women did not have children, they were less likely, compared with those with children, to be integrated into households and village activities, and resorted to out-migration. Sex composition of children, together with household socioeconomic status and relationships, determined the chances of the paths divorced and widowed individuals would have taken.

More study is needed to fully account for the nature of the marriage system in early modern Japan as well as the role of children in the lifecourses of individuals and in the family system. In a population where high rates of death or divorce lead to the frequent dissolution of marriage before the end of the reproductive span, remarried persons have the potential to contribute measurably to the overall level of fertility and therefore to have a noticeable demographic impact (Coale 1981).[14] The role of remarriage in fertility and family organization thus also requires further attention and systematic examination.

(2004: 76-77) that mutual incompatibility and insufficient adaptation to the customs of a new family or its members were some of the prominent reasons for divorce.

14 A recent study on fertility of women in these villages demonstrated that whether women were in first marriage or remarriage had no effect on marital reproduction (Tsuya and Kurosu 1999). Despite the relatively high likelihood of disruption of first marital unions in the two villages, the negative fertility effect of marital disruption may have been minimal as it was often followed by quick remarriage.

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Table 1. The rates of first marriage and remarriage per 1,000 population at risk by sex and age: Shimomoriya and Niita 1716-1870

Age	First marriage				Remarriage			
	Rate		N		Rate		N	
	Male	Female	Male	Female	Male	Female	Male	Female
10-14	24.0	132.9	109	479	--	22.8	1	20
15-19	158.5	308.9	453	253	262.0	265.0	49	119
20-24	173.3	164.9	152	31	248.5	216.1	127	86
25-29	112.1	120.5	49	10	201.9	161.0	85	52
30-34	51.0	--	15	2	160.9	157.5	61	40
35-39	55.8	--	14	1	102.3	80.9	40	22
40-44	28.0	--	6	1	92.1	63.2	41	22
45-49	42.4	--	7	1	44.1	28.6	20	14
10-49	83.6	162.5	805	778	--	144.5	424	375
15-49	136.6	252.7	696	299	151.7	140.2	423	355

Notes: Population at risk are those who reside in the villages, and for first marriage, never-married persons, and for remarriage, persons whose marriage ended by divorce, loss of spouse by death or absconding, and other unknown reasons. Thus, both groups (first marriage and remarriage) exclude men and women who migrated into the villages upon their marriage.

Table 2. The mean duration (in years), mean number of children, and proportion of no children at the end of marriage:

uncompleted vs. completed first marriage of females 15-49, Shimomoriya and Niita 1716-1870

	Age at end of first marriage	Duration of marriage	Mean number of children			Having no children (%)			N	%
			Children ever-observed	Surviving number of children	Coresiding number of children	No children ever-observed	No surviving children	No coresiding children		
Completed marriage	50.00	30.24	2.80	1.94	1.91	14.52	18.15	14.85	303	29.76
Uncompleted marriage	27.09	10.75	1.24	0.93	0.97	45.73	49.23	49.23	715	70.23
Spouse's death	34.75	17.89	2.28	1.64	1.66	18.42	24.34	23.68	152	(14.93)
Own death	30.23	14.53	1.85	1.37	1.45	23.40	26.06	25.00	188	(18.47)
Divorce	21.08	4.78	0.34	0.28	0.33	75.16	77.70	78.03	315	(30.94)
Absconding	29.43	12.21	1.42	1.10	1.07	30.00	35.00	38.33	60	(5.89)

Note: Completed marriage refers to those women whose marriage lasted until age 50. Coresiding number of children includes nonbiological children (e.g. adopted, in-laws). Not included are 149 women, who are age 15-49 and whose marriage continued until the end of observation.

Table 3. Reasons for exits from divorcehood/widowhood, males and females 15-49, Shimomoriya and Niita 1716-1870

	Years from marital dissolution	Mean age at event	N	Rate
<Male>				
Remarriage	2.67	28.44	387	161.5
Out-migration	2.41	30.52	251	104.8
Death	5.14	32.75	28	11.7
<Female>				
Remarriage	2.40	25.53	344	149.9
Out-migration	1.76	27.33	117	51.0
Death	5.29	34.94	35	15.3

Note: Rates are calculated based on the person-years at risk---2,396 males and 2,295 females. The analysis excludes 83 non-native men and 201 non-native women who were divorced.

Table 4. Means of the covariates used for the discrete-time event history analysis of the probability of divorce and remarriage/out-migration

	Divorce	Remarriage/Out-migration	
Covariates	Females	Male	Female
	15-49	15-49	15-49
Logged rice price time	-0.242	-0.213	-0.203
Crisis year	0.069	0.065	
Household landholding (in *koku*)	12.476	12.616	13.066
Marriage type			
Uxorilocal	0.160	0.270	0.490
Virilocal	0.658	0.681	0.441
Unknown	0.182	0.049	0.069
Children: Surviving			
No child	0.259		
Only son	0.236		
Only daughter	0.201		
Both son&daughter	0.304		
Children: Coresiding			
No child	0.267	0.617	0.477
Only son	0.227	0.133	0.147
Only daughter	0.162	0.096	0.119
Both son&daughter (ref)	0.344	0.153	0.257
Current age	30.766	32.637	32.487
Marital duration			
Up to 3 years (ref.)	0.125		
4-6 years	0.116		
7 years and more	0.583		
Unknown	0.177		
First marriage for husband	0.337		
Duration since marital dissolution		3.961	4.124
Type of marital dissolution			
Death of spouse		0.390	0.451
Divorce		0.594	0.531
Unknown		0.015	0.018
Time period			
1708-1759	0.356	0.251	0.130
1760-1799	0.271	0.316	0.287
1800-1839	0.230	0.271	0.356
1840-1870	0.143	0.162	0.227
Resident village			
Shimomoriya	0.423	0.471	0.448
Niita	0.577	0.529	0.552

Table 5. Estimated odds ratios of the covariates from the discrete-time event history analysis of the probability of divorce by next year: Females 15-49 First Marriage, Shimomoriya and Niita 1716-1870

	Model 1		Model 2		Model 3	
	Exp(b)	*p-value*	*Exp(b)*	*p-value*	*Exp(b)*	*p-value*
Logged rice price time	4.821	0.000	4.954	0.000	4.942	0.000
Crisis year	0.386	0.003	0.393	0.004	0.392	0.003
Household landholding (in koku)	0.986	0.137	0.982	0.067	0.980	0.030
Marriage type						
Uxorilocal	1.425	0.073	1.463	0.054	1.310	0.170
Virilocal (reference)	1.000	--	1.000	--	1.000	--
Unknown	1.292	0.683	1.435	0.541	1.355	0.604
Marriage type x price						
Uxorilocal x price	0.253	0.006	0.235	0.004	0.237	0.004
Virilocal x price	4.821	--	4.954	--	4.942	--
Unknown x price	0.353	0.075	0.375	0.113	0.369	0.105
Children: Surviving						
No child			6.385	0.000		
Only son			2.590	0.004		
Only daughter			2.183	0.020		
Both son&daughter			1.000	1.000		
Children: Coresiding						
No child					4.115	0.000
Only son					1.541	0.114
Only daughter					1.421	0.227
Both son&daughter					1.000	--
Current age	0.939	0.000	0.962	0.000	0.962	0.000
Marital duration						
Up to 3 years	1.000	--	1.000	--	1.000	--
4-6 years	0.774	0.084	0.995	0.976	0.982	0.906
7 years and more	0.180	0.000	0.320	0.000	0.279	0.000
Unknown	0.662	0.53	0.835	0.769	0.769	0.670
Time period						
1708-1759	1.000	--	1.000	--	1.000	--
1760-1799	2.132	0.000	2.068	0.000	2.081	0.000
1800-1839	1.654	0.008	1.708	0.004	1.774	0.002
1840-1870	1.642	0.027	1.735	0.012	1.774	0.009
Log-likelihood	-1382.76		-1350.54		-1353.18	
Chi2	408.14		430.36		454.66	
(d.f.)	(17)		(20)		(20)	
Prof>chi2	0.000		0.000		0.000	
Number of observations	17,794		17,794		17,794	
Number of events	322		322		322	

Notes: Odds ratios are estimated by the logistic regression with robust standard errors (Huber 1967). The analysis above controls for residing village, household size, and whether the observed marriage was the first one for husband or not.

Table 6. Estimated odds ratios of the covariates from the discrete-time event history analysis of the probability of remarriage by next year: Shimomoriya and Niita 1716-1870

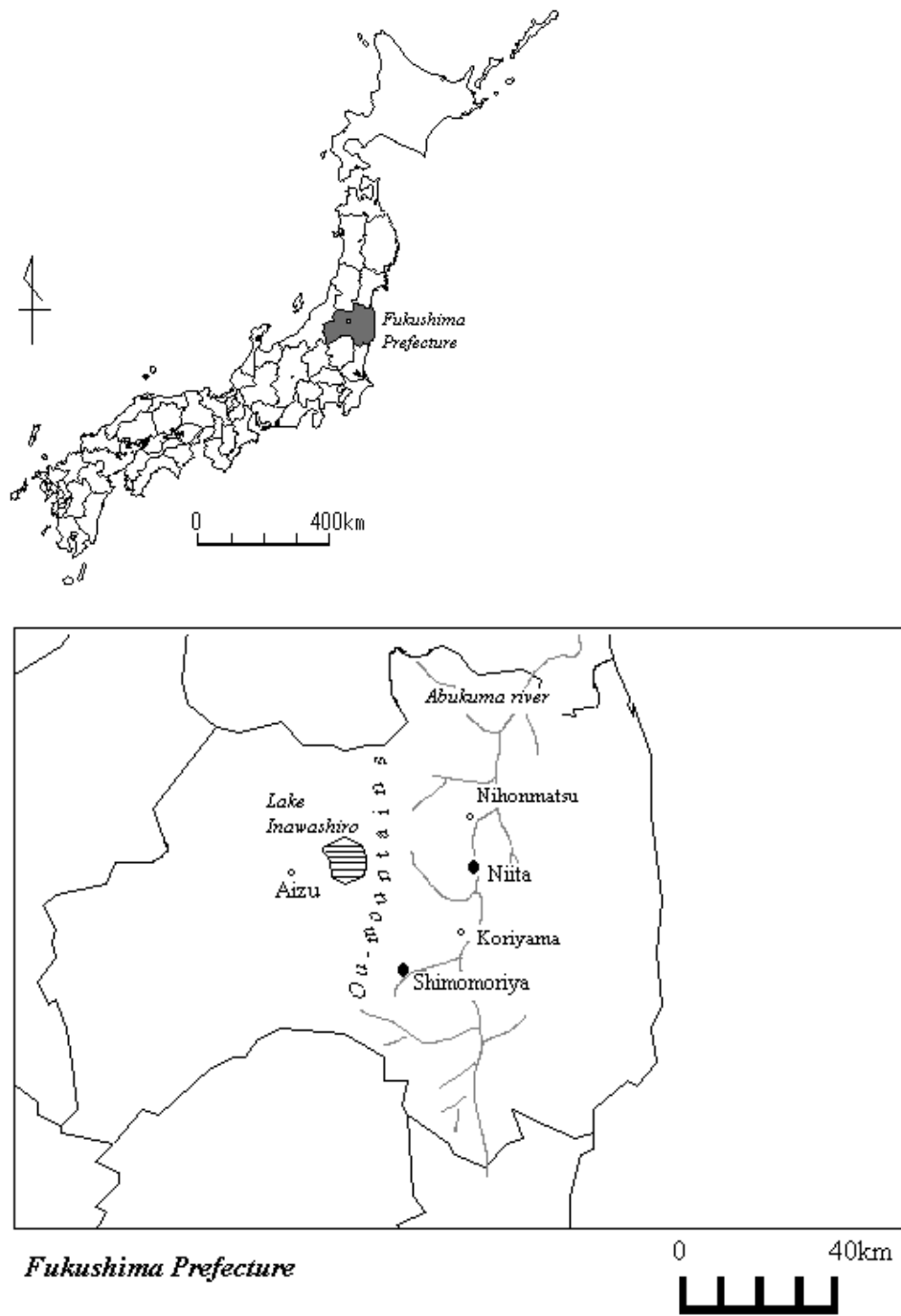|	Male 15-49				Female 15-49			
	Model 1		Model 2		Model 1		Model 2	
	Exp(b)	*p-value*	*Exp(b)*	*p-value*	*Exp(b)*	*p-value*	*Exp(b)*	*p-value*
Logged rice price time	0.707	0.087	0.709	0.096	0.640	0.056	0.622	0.044
Household landholding (in koku)	0.997	0.800	0.998	0.854	0.976	0.003	0.977	0.009
Previous marriage type								
Uxorilocal	0.788	0.087	0.791	0.090	0.866	0.302	0.269	0.002
Virilocal (reference)	1.000	--	1.000	--	1.000	--	1.000	--
Unknown	1.348	0.389	1.487	0.253	1.227	0.584	0.406	0.222
Children: Coresiding								
No child			0.558	0.021			0.402	0.010
Only son			0.481	0.008			0.313	0.003
Only daughter			0.944	0.828			0.543	0.122
Both son&daughter			1.000	--			1.000	--
Children x prev mar type								
No child x uxorilocal							3.367	0.009
Only son x uxorilocal							6.880	0.002
Only daughter x uxo							4.382	0.011
No child x unknown							5.168	0.089
Only son x unknown							6.106	0.083
Only daughter x uk							3.432	0.252
Current age	0.933	0.000	0.924	0.000	0.928	0.000	0.917	0.000
Duration since marital dissolution	0.984	0.358	0.994	0.749	0.996	0.847	1.016	0.470
Type of marital dissolution								
Death of spouse	1.000	--	1.000	--	1.000	--	1.000	--
Divorce	0.640	0.004	0.728	0.066	1.178	0.412	1.204	0.375
Unknown	0.446	0.154	0.493	0.243	1.486	0.434	1.016	0.981
Time period								
1708-1759	1.000	--	1.000	--	1.000	--	1.000	--
1760-1799	0.875	0.436	0.872	0.424	0.474	0.000	0.458	0.000
1800-1839	0.671	0.031	0.625	0.012	0.299	0.000	0.286	0.000
1840-1870	1.052	0.800	0.981	0.929	0.263	0.000	0.238	0.000
Log-likelihood	-910.25		-904.14		-751.39		-741.81	
Chi2	99.18		107.11		212.20		222.16	
(d.f.)	(13)		(16)		(13)		(22)	
Prof>chi2	0.000		0.000		0.000		0.000	
Number of observations	2,186		2,186		2,121		2,121	
Number of events	354		354		304		304	

Notes: Odds ratios are estimated by the logistic regression with robust standard errors. The analysis above controls for residing village and household size. The analysis excludes 83 non-native men and 201 non-native women who were divorced.

Table 7. Estimated odds ratios of the covariates from the discrete-time event history analysis of the probability of remarriage and out-migration by next year: Shimomoriya and Niita 1716-1870

	Male 15-49				Female 15-49			
	Remarriage		Out-migration		Remarriage		Out-migration	
	Exp(b)	*p-value*	*Exp(b)*	*p-value*	*Exp(b)*	*p-value*	*Exp(b)*	*p-value*
Logged rice price time	0.709	0.096	1.259	0.524	0.622	0.044	1.553	0.223
			0.772	0.552				
Household landholding (in koku)	0.998	0.854	0.998	0.833	0.977	0.009	1.018	0.177
Previous marriage type								
Uxorilocal	0.791	0.090	3.873	0.000	0.269	0.002	0.542	0.012
Virilocal (reference)	1.000	--	1.000	--	1.000	--	1.000	--
Unknown	1.487	0.253	7.280	0.000	0.406	0.222	1.216	0.727
Children: Coresiding								
No child	0.558	0.021	1.994	0.101	0.402	0.010	2.259	0.093
Only son	0.481	0.008	1.386	0.425	0.313	0.003	1.625	0.302
Only daughter	0.944	0.828	1.412	0.405	0.543	0.122	1.524	0.382
Both son&daughter	1.000	--	1.000	--	1.000	--	1.000	--
Children x prev mar type								
No child x uxorilocal					3.367	0.009		
Only son x uxorilocal					6.880	0.002		
Only daughter x uxo					4.382	0.011		
No child x unknown					5.168	0.089		
Only son x unknown					6.106	0.083		
Only daughter x uk					3.432	0.252		
Current age	0.924	0.000	1.012	0.373	0.917	0.000	0.993	0.631
Duration since marital dissolution	0.994	0.749	0.909	0.001	1.016	0.470	0.846	0.001
Type of dissolution								
Death of spouse	1.000	--	1.000	--	1.000	--	1.000	--
Divorce	0.728	0.066	1.921	0.016	1.204	0.375	1.216	0.563
Unknown	0.493	0.243	2.745	0.118	1.016	0.981	5.312	0.024
Time period								
1708-1759	1.000	--	1.000	--	1.000	--	1.000	--
1760-1799	0.872	0.424	1.814	0.020	0.458	0.000	1.475	0.258
1800-1839	0.625	0.012	1.907	0.014	0.286	0.000	1.084	0.820
1840-1870	0.981	0.929	1.041	0.908	0.238	0.000	0.301	0.033
Log-likelihood	-904.14		-632.14		-741.81		-372.73	
Chi2	107.11		121.35		222.16		108.00	
(d.f.)	(16)		(17)		(22)		(16)	
Prof>chi2	0.000		0.000		0.000		0.000	
Number of observations	2,186		2,186		2,121		2,121	
Number of events	354		228		304		110	

Notes: Odds ratios are estimated by the logistic regression with robust standard errors. The analysis above controls for household size and residing village. The analysis excludes 83 non-native men and 201 non-native women who were divorced.
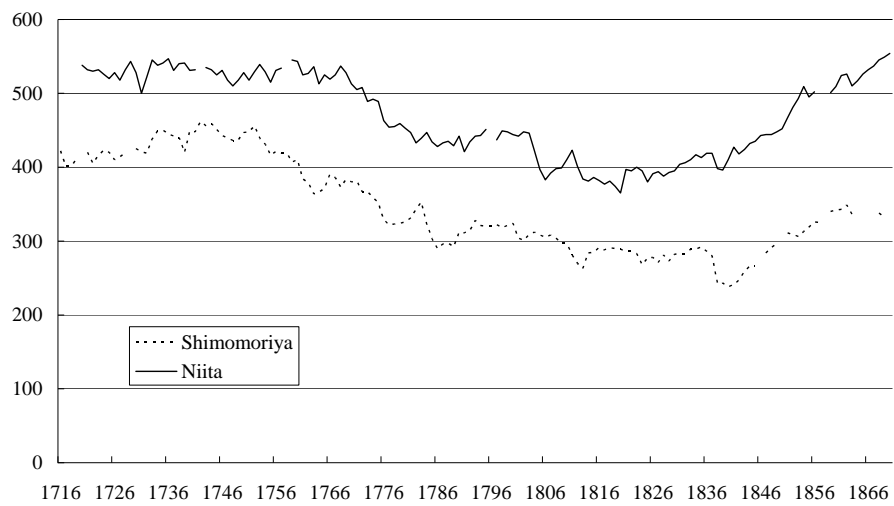
Figure 1. Map of the Study Locations

Figure 2. Population size of the villages of Niita and Shimomoriya, 1716-1870