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AN EVENT HISTORY ANALYSIS OF DIVORCE IN CHINA

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Abstract

This study demonstrates that the level of divorce in China is extremely low, in comparison with other developed and developing countries. Similar to findings from other studies, the risk of divorce for women who married before age 18 is higher than those married after age 20, controlling for several other socio-demographic factors. Arranged marriage has a risk of divorce which is about 2.5 times as high as the non-arranged ones. The divorce level in urban areas is higher than in rural areas. The greater proportion of arranged and early marriages plus some other special factors in a relatively less developed region (Shaanxi) contributes to its higher divorce rate, in comparison with another relatively advanced region (Shanghai). Education and occupation are not statistically significant determinants of divorce. Our estimates show that holding other things equal, women with 1,2, and 3 or more children have only about 43.7, 27.3 and 22.5 percent of the risk of divorce as compared with women with no children at all. Son-preference not only has an effect on fertility but also exerts an effect on marriage dissolution. Women with no son have significantly higher risk of divorce than those with at least one son.

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by

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INTRODUCTION

During the 1950s, 1960s and 1970s, there were almost no demographic data available in the People's Republic of China. Starting with the release of the data from the 1982 national census and the 1982 one-per-thousand fertility survey, followed by many other attempts at data collection as well as the 1990 census, there has been a boom in Chinese demographic information. These surveys and censuses have provided detailed data of first marriage, fertility, migration and mortality over time[1] and across geographical areas. China can now be regarded as a country with rich demographic data resources compared with many other developing countries. However, the published data on divorce have been extremely poor and studies are few. Only the total number of divorces are available and can only be used to compute the crude divorce rate which is derived by dividing the number of divorces by the total population or total number of married couples. These crude divorce rates do not give us much information about the level, pattern, and trends in divorce since the population age structure, marital status distribution, and socio-demographic characteristics have important effects on divorce and these factors have all been changing in China.

Although the government's demographic concern is mainly with

fertility and first marriage, which is closely related to the timing of child bearing, scholars and the society are increasingly interested in studying divorce. As Smith et al. (1984) noted in their international study of marriage and remarriage using WFS survey data from 28 developing countries, marriage dissolution is one of the leading determinants of exposure to sexual intercourse in most human societies. It follows that dissolution and remarriage patterns may influence societal rates of procreation and population growth. Palmore and Singarimbun (1992) found that among Indonesian women aged 35-49, for example, those who were married more than once had a cumulative fertility of one less child, based on a 1987 Indonesian survey. With the Chinese economic reform and the policy of opening the door to the outside world, the divorce level is increasing gradually. Further socio-economic development and urbanization is expected to accelerate the increase in divorce (Platte, 1988). On the other hand, projecting the future family/household size and structure, which certainly depends on demographic rates including divorce rates, has become important to plan for housing construction, consumer goods production, as well as for the social welfare system. Forecasting the resource requirements of the housing sector will be more imperative in the 1990s because the Chinese housing system is becoming increasingly commercial.[2] Therefore, estimates of age and duration specific divorce rates and their association with socio-economic covariates will be important not only because it will fill in a demographic information gap about a large country, but also because it will be

useful for private and social planning.

In addition to providing age and duration specific divorce rates, this paper presents a life table analysis and estimates a Cox proportional hazard model of socio-demographic influences on divorce in China based on the BMDP statistical software. The next section will present a description of the data and the methodology used for this study, and the following sections will present and discuss the findings.

DATA AND METHODOLOGY

The data used for this study are derived from the large sample surveys called the In-Depth-Fertility-Surveys by the State Statistical Bureau of China, with the technical assistance of the Research Center of the International Statistical Institute. The first phase of the surveys was conducted in April 1985, which covered two provinces Shaanxi, and Hebei, and the municipality of Shanghai, with a total population of 93 million (SSB, 1986, p. 3). The sample sizes of the Shanghai, Shaanxi and Hebei surveys are 6750, 5368 and 6149 households, respectively. The second phase of the In-Depth-Fertility-Surveys was conducted in April, 1987 in Beijing municipality, Liaoning, Shangdong, Guangdong, Guizhou, and Gansu provinces, covering a total population of 236 million (SSB, 1988). Based on the standard of the World Fertility Survey, the questionnaire of this new fertility survey covers 6 demographic topics: background, marriage history, detailed birth and pregnancy

history, contraceptive knowledge and history of contraceptive use, fertility preferences, and background of current or last spouse. In the first phase of the surveys, detailed marriage history data were collected. The questions include current marital status, times of marriage, starting and end dates of first, second, third ... marriage and individual's socio-demographic characteristics. Obviously, the first phase of the In-Depth Fertility Surveys provided a valuable data set for a comprehensive study on divorce. However, the second phase of the In-Depth Fertility Survey only asked a few questions about the date of marriage dissolution for the currently divorced and widowed women. This unfortunate change in the second phase questionnaire makes it impossible to use the second phase data for this study. Therefore, the estimates reported in this paper are based on only the first phase of the survey. Although the first phase of the surveys is not designed to represent China as a whole, we assume that the results of the analysis reported in this article can roughly reveal the contemporary pattern and characteristics of divorce in China since it includes one most developed urban area (Shanghai), one less developed area (Shaanxi) and one moderately developed area (Hebei).

The methodology adopted in this study is a combination of the standard life table analysis and the multivariate hazard model regression. The duration used in this article refers to the years since marriage. The occurrence/exposure rate (abbreviate as rate hereafter), which is calculated for the construction of the life tables is defined as the number of divorces occurred in the single-

year duration interval divided by the person years lived at risk to divorce (i.e. in married status) in the interval.

For those women who are still married at the time of the survey, we do not know whether they will divorce and when, if they do. This problem of "right-censoring" is handled by the life table approach, at least to a large extent (Elandt-Johnson and Johnson, 1980, p. 157), and the approach provides an informative summary measure of the level and timing of divorce derived from the schedule of duration-specific divorce rates.

As our main concern in this study is to investigate the socio-demographic influences on divorce, life tables must be constructed for subgroups of the study population with different socio-demographic characteristics to see to what extent the divorce probabilities differ among the subgroups. The life table measure show the probability of the occurrence of the events under study (divorce in this case) at various duration for each sub-group of women with different socio-demographic characteristics. While we need such measures to tell what are the existing differences among the sub-groups, the life table measures have a major limitation. The life table probabilities do not control for the influence of the other covariates. For example, the life table measures may show that the divorce level is higher in urban areas than in rural areas. But it does not tell whether this fact is mainly due to higher education or less arranged marriage or less early marriages in urban areas than in rural areas, or residually due to the other unspecified socio-economic differences between the urban and rural

sectors. Similarly, the life table may show the divorce probability for the arranged marriages is much higher than the marriages initiated by the partners themselves, but it cannot tell whether this is due to the fact that many more arranged marriages occur in the rural than urban areas or at very early ages. Therefore, the hazard model is used to study the effects of each selected covariate on divorce at various marriage durations while controlling for the effects of other covariates. Another major limitation of the life table approach is that when more than two or three variables are of interest, the life table approach quickly encounters problems because of small sample sizes with too many partitions of data to estimate relatively rare events (Menken et al., 1981; Balakrishnan et al., 1987). The combination of life table and hazard model approaches has been called "a marriage between the life table and the multivariate regression" (Menken et al., 1981).

As shown by numerous recent studies in demography and sociology, the two major advantages of the multivariate hazard models in analyzing the event history data, in comparison to the traditional multiple regression techniques, are that the multivariate hazard models can adequately handle the censored data (therefore maximize the usage of the event history information) and the time-varying covariates (see, for example, Allison, 1984; Forster et al., 1987). On the other hand, the multivariate hazard model is not well adapted because of its nonlinear form to the study of endogenous covariates that are dealt with in the

simultaneous equation (Lancaster, 1990). The mathematics of the multivariate hazard models are available elsewhere (see especially Menken et al., 1981; Teachman, 1982; and Allison, 1982 for a good exposition), and are not repeated here.

OVERALL DIVORCE LEVEL

Table 1 and Table 2 present the five-year age and duration specific rates of divorce for the three provinces (Hebei, Shaanxi and Shanghai) combined, which demonstrate that the period of highest risk of divorce is 0-4 years after marriage. The single-year duration specific rates, which are not presented here to save space, show that the peak divorce rate is at marriage duration of 3 years. The married women of age 15-19 have the highest divorce rates in comparison with other age groups. These results are plausible based on similar findings from other countries (Willekens, etc, 1982; Espenshade, 1985).

Table 3 shows what would be the cumulative percent of divorce at various marriage durations, if a hypothetical cohort were subjected to the estimated average divorce rates.[3] The life table results tell us that, on average, 1.1, 1.6 and 2.0 percent of the marriage cohort members would end their first marriage by divorce at the marriage duration 5, 10 and 20 years. Clearly, divorce levels in China are extremely low by any standard. For example, the probability of American white and black females' marriage will be eventually ended in divorce after 20 years of

marriage was 45.2 percent and 47.1 percent in 1985-80 respectively (Espenshade, 1985), which were 22.5 and 23.5 times as high as the divorce level in the three provinces of China investigated here. According to the World Fertility Surveys conducted in the 1970s and early 1980s, it is estimated that in Indonesia, South Korea, Malaysia, Philippines, Thailand, Bangladesh, Pakistan and Sri Lanka, 37.1, 4.9, 15.3, 4.9, 15.3, 13.5, 4.9 and 8.7 percent of women respectively, can expect their marriage to end by divorce within the first twenty years after marriage (see Table 4) (Smith, 1984).

It is well-known that divorce has long been culturally discouraged in China (See for example, Meijer, 1971; Parish and Whyte, 1978; Whyte and Parish, 1984). As in many other Asian countries, the persistence of deeply-rooted traditions against divorce has played an important role.[4] Moreover, fairly restrictive legal divorce procedures designed to preserve the conjugal family have successfully served their purpose of keeping the divorce rates at a very low level. For example, a couple or one party of the couple intending to divorce usually first report to their work unit leader after consulting their close family members such as parents. The work unit leader may very likely not agree to the divorce as the first response, and try to convince the couple not to divorce. If the couple or one party insists, their case will then be submitted to the Civil Affairs Department. The Civil Affairs Department will try again to prevent the divorce by means of talking with the person(s) concerned and organizing a

meeting, to which the related family members or friends are invited to participate, etc.. Divorce can be approved by the Department of Civil Affairs if an acceptable reason is found. Some cases will be submitted to a local court and the court may repeat the process of trying to persuade the couple not to divorce. Finally, some divorce cases may be approved by the court and some may be rejected. Platte (1988) reported that a divorce case was filed six times without being approved. A considerable number of persons may withdraw their divorce request at one of the stages of family consultation, work unit reporting, Civil Affairs Department and local court hearing, either because they are really convinced the union should survive or because they are worn down by the time-consuming process. Some couples may never submit their case for a divorce because they are afraid of being ostracized by their family, work unit and society. Although China's revised Marriage Law of 1981 eased the requirements for divorce when the parties were "completely alienated" from each other, the work unit , village leadership, urban neighborhood committee, civil affairs departments and the courts still have an important role in preserving the conjugal family.[5]

THE TREND OF DIVORCE OVER TIME

Table 3 presents the period life table percentage of divorce at various marriage durations, assuming a hypothetical cohort experienced the duration-specific divorce rates in different time

periods[6]. It is interesting to note that the divorce level in the period before the "Cultural Revolution" (i.e. before 1966[7]) is substantially higher than in the period during and after the "Cultural Revolution". One of the explanations is that in the 1950s and in the first half of the 1960s, the movement to increase women's status encouraged some young people to divorce if their unhappy marriages were arranged by their family (so called "feudal marriage"). Some women seeking divorce were challenging the authority of husbands and demanding equality between men and women (Zhao et al., 1987, p. 163-164). The 1957 political movement against "Rightists" also led to dissolution of the marriages of many of these political victims, given the strong political pressure on the Rightist's spouse to disassociate themselves from their "anti-revolutionary" husband or wife. During the 10-year turmoil of the Cultural Revolution (1966-75), the legal system in China was seriously undermined and political life was disrupted. Some lower-level courts did not even accept divorce cases. Hence, the number of divorces dwindled (Li, 1985, p. 18). Consequently, the frequency of divorce during the "Cultural Revolution" (1966-75) is significantly lower than the period before 1966.

The legal system recovered after the "Cultural Revolution" and the restrictive policy on granting divorce has been relaxed to some extent by the New Marriage Law, which took effect officially on January 1, 1981 and placed more emphasis on the emotional basis for a happy marriage. The economic and political reforms and the open-door policy implemented from the beginning of 1980s have introduced

into the country some Western influences on divorce. It is thus believed that the divorce rates have been rising in the 1980s (see, for example, Bao, 1990; Lan, 1985; Liu, 1987; Honig and Hershatter, 1988). The crude divorce rates in China increased from 2.03 per thousand married couples in 1982 to 2.88 in 1990, an increase of 43 percent in eight years. While some increase of divorce rates in the period of 1976-1985 is observed in comparison with the period of 1966-75. We are not able to document a significant increase in divorce after the 1981 New Marriage Law since it is not possible to breakdown the sample into shorter periods due to the limitation of the sample size of the 1985 surveys.

SOCIO-DEMOGRAPHIC INFLUENCES ON DIVORCE

We have chosen nine time-fixed covariates, referring to individual socio-demographic characteristics. They are: province, residence type (rural or urban), women's education, occupation, marriage cohort, age at marriage, arranged or not arranged marriage, parents' education, and whether she has at least one son at the end of marriage or censoring time. We also considered two time-varying covariates of the number of children surviving and whether the couple is sterilized at each marriage duration. Some other variables such as husbands' education, husbands' occupation, age difference between husband and wife, and whether the couple lives with parents etc. may be considered as factors associated

with divorce behavior in the Chinese context. However, we did not include them initially because the In-Depth Fertility Surveys only collected the information of the interviewed women's current or last husband, and this information is not that which is needed on the ex-husband to explain the women's likelihood of divorce.[8] Variables such as religion and premarital birth were also considered as the important covariates to understand divorce behavior in other populations (see, for example, Menken et. al., 1981; Balakrishnan et. al., 1987). We did not include these variables in this study because religion is not a distinctive feature among most mainland Chinese and therefore no religion question was asked in the In-Depth Fertility Survey. There are very few premarital births in China, especially before 1985, when the survey was conducted. Thus, this variable is also not included as a factor influencing divorce.

Table 5 gives the cumulative percent divorced by covariates, according to the standard life table methods. Table 6 presents the estimates of the hazard coefficients and the relative risks of divorce for women with different characteristics. They are supplementary descriptions of the data rather than duplicative. The life table proportions presented in Table 5 show the actual probability that marriage ended in divorce at various durations for each sub-group of women with different socio-demographic characteristics. As stated earlier in this article, while we need such life table measures of divorce rates to identify the existing levels and differences among major sub-groups, the hazard model

also controls for additional socio-demographic covariates of divorce.

We present the estimates of three hazard models. The first one includes all time-fixed covariates. The second one drops women's occupation, women's education and parents' education, which are found to be not statistically significant in the first model. The third model includes a time-varying covariates, the number of surviving children at each marriage duration, in addition to the six time-fixed covariates which have been found to be statistically significant in model 1 and model 2.

We also estimated several additional models. One includes education plus province, residence, period at first marriage, but drops all other covariates which may be associated with education. The results still show that education is not a statistically significant determinant of divorce.[9] The other model includes an additional time-varying dummy variable indicating whether the couple is sterilized or not at each marriage duration, and it is also not statistically significant. One possible explanation for this latter finding is that very few women (only 8 cases in the entire sample of 13,306 women) were sterilized and subsequently divorced. We have not reported the results of these additional models since they do not contribute any additional and reliable knowledge to our study.

Although we report the estimates of all three models, we prefer and discuss primarily the hazard specification of model 3.[10] For those not familiar with the hazard model, it may be useful to

illustrate how the estimates are interpreted. In Table 6, for instance, the covariate of "residence" has two categories: rural and urban. "Rural" (in parentheses) is the reference group. The relative risk of divorce for a rural women is assumed to be one, and according to the estimates in model 3, the relative risk of divorce for women in urban area is 1.50, or 50 percent higher, everything else held constant (i.e. all other covariates considered in the model being equal). All other figures of relative risk presented in Table 6 should be understood in this way. The columns of "coeff." reports the estimates of the hazard model coefficients. The relative risk is actually calculated as an exponential of the coefficient (see, for example, Menken et al., 1981; Teachman, 1982; Allison, 1984).

Marriage cohorts

Both the life table and hazard model analysis show that the cohort of women who married before 1966, in which the "Cultural Revolution" began, had significantly higher divorce rates than the marriage cohort who married after 1966. This is consistent with what we described in the previous section about the institutional changes in divorce of the periods. Given the influence of political or policy changes in China, the cohort difference in divorce rates revealed here is likely to be a reflection of the period differences in policy or at least a mixture of the period and cohort effects.

Age at marriage

Women who married before age 18 had the highest divorce rates, and women who married at age 18-19 had the second highest divorce rates. For example, the proportion of marriages of women who married before age 18 that ended as divorced at marriage duration 5, 10 and 15 years were 2.4, 1.4 and 1.6 times as high as for the women who married at ages 20-24. Controlling for the other covariates, the risk of divorce of the marriages occurring before age 18 is about 2.1 times as high as those marriages occurring at ages 20-24. These differentials are consistent with findings from other studies. For example, Wang et al. (1992) found that age at first marriage imposes a negative effect on divorce in Shanghai. Balakrishnan et al. (1987) show that the risk of divorce of Canadian women who married at age 19 or before is about 3.96 time as high as those who married at ages 20-21. Smith (1981) also found the lower age at marriage, the higher the probability of divorce in Sri Lanka and Thailand. Trent and South (1989) demonstrated that, based on data from 66 developed and developing countries, a late average age at marriage for women is associated with a lower divorce rate. Marriages at very young ages are less stable even in the Chinese context where social custom strongly discourages divorce, because the very young brides are less mature and presumably their marriages are more often rash ones. This fact can be regarded as one private reason for promoting later marriage, in addition to the social reason of reducing the period fertility

rate and hence population growth rate (Zeng and Vaupel, 1989).

Arranged marriage

According to the life table estimates, the probability of divorce at marriage duration 5, 10 and 15 years by women whose marriages were arranged by their parents or other relatives (or friends) were 3.1, 3.9 and 4.3 percent, in contrast to 0.8, 1.2 and 1.4 percent for those whose marriages were not-arranged. The hazard model analysis shows that the risk of divorce for the arranged marriage is about 2.5 times as high as the non-arranged marriage. This is of course not surprising since the arranged marriage usually lacks the emotional base of love, and its absence may increase divorce. Among 13,306 surveyed ever-married women, 1,716 women reported that their marriages were arranged, or 12.9 percent of the sample (25, 10, 6 percent in Shaanxi, Hebei and Shanghai, respectively). This indicates that the arranged marriage is still not a negligible phenomenon in contemporary China especially in the rural areas, but it is lower in younger birth cohorts of women (SSB, 1986). Society may benefit from the decrease in arranged marriages and might want to promote this trend in order to increase the likelihood that young people have a happy and enduring family life.

Regional differences

Hebei has the much lowest divorce level among the three provinces surveyed (Table 5). Although Shaanxi is a province with a lower socio-economic development level than Shanghai, its divorce level is higher than Shanghai's. If a marriage cohort followed the observed Shaanxi rates of divorce, 2.6 and 3.0 percent of the marriages would be ended by divorce at marriage durations of 15 and 20 years, in contrast to 2.0 and 2.3 percent in Shanghai and 1.2 percent in Hebei. The differences in these life table estimates are highly statistically significant. Clearly, the higher divorce level in Shaanxi than in Shanghai cannot be explained by a hypothesized positive relationship between socio-economic development and the divorce rate.

Although we have not found a satisfactory explanation on this unusual phenomenon, a few remarks put it in perspective. First, the hazard model estimates show that Shanghai had a lower relative risk of divorce than Shaanxi, but it is not statistically significant once other covariates are controlled which influence divorce, e.g. age at marriage, arranged or not arranged marriage etc.. The risk of divorce for the arranged marriages is about 2.5 time as high as not arranged marriages; the women who married before age 20 have 2.1 - 2.5 time higher risk of divorce than women married after age 24. Among all marriages in the survey, 25 percent were arranged ones in Shaanxi, but only 6 percent in Shanghai. Among the women aged 20-24 and 45-49 in the survey time of 1985, 34.5 and 87.3 percent were married before age 20, but the

corresponding figures of the comparative cohorts in Shanghai were 6.8 and 52.6 percent, respectively. Obviously, there was much more early and arranged marriages in Shaanxi than in Shanghai, and these structural differences in marriage certainly contribute to the higher divorce level in Shaanxi. The second possible cause for this phenomena may be political. In 1960s and 1970s, a large number of high school graduates and some professionals from large cities, such as Beijing etc., were sent to remote and rural areas in Shaanxi for "Re-Education by the Peasants and Workers", under Mao Zhedong's regime. Some of them married in the local areas. At the beginning of 1980s, when the era of Mao ended, they were allowed to return to the large cities from which they originally came. Some of them divorced their rural spouse because of the differences in education and occupation etc.. Tight restrictions on city residence permits contributed to this cause of divorce, because although these better educated exiles were allowed to return to their native city, their spouses were usually not allowed to migrate with them.

The proportion of marriages dissolved at marriage duration 10, 15 and 20 years in urban areas is higher than in the rural areas by about 32, 47 and 68 percent, respectively. The hazard model estimates show that when other things are equal, the risk of divorce for urban women is about 50 percent higher than for their rural counterparts. Both the life table and hazard model estimates for the residence (rural/urban) covariates are statistically significant. The persistence of the customary Chinese tradition

against divorce is clearly weaker in urban than in rural areas.

Education and occupation

Neither women's education nor parents' education had statistically significant impacts on divorce, revealed by both the life table and the hazard model analyses. Using Ordinary Least Squares regressions without interaction terms, Smith (1981) found that education is positively correlated with marriage stability in Sri Lanka and Thailand, but Menken et al. (1981) and Balakrishnan et al. (1987) found in the U.S. and Canada that education was not statistically significant in their Cox proportional hazard analysis of divorce. It may be reasonable to assume that women with more education will be more inclined to end an unhappy marriage in the Chinese context. On the other hand, more educated women are less likely to be exposed to other high risk factors, such as very early and arranged marriages. These factors are operating in opposite directions and may offset each other. It is not surprising, therefore, that we also found that occupation, which is closely related to education in China, is not a statistically significant determinant of divorce in both life table and hazard analyses.

Time-varying covariate: number of surviving children

It is observed that the number of children after marriage may affect the risk of divorce. One of the important reasons for

encouraging couples in troubled union to stay together rather than divorce is to avoid the negative consequences of divorce on their children. This consideration is taken even more seriously in the Chinese context where divorce is not socially accepted. Chinese couples who wish to divorce are often warned, "have you considered the future of your children?" by their family, friends, work unit leaders, and governmental officers. Since the number of surviving children changes over time, we have to deal with this variable as a time-varying covariate, which is one of the major advantages of the multivariate hazard model compared with the traditional multiple regression. The estimates of model 3 in Table 6 show that holding everything else equal, women with 1, 2, and 3 or more children, have only about 43.7, 27.3 and 22.5 percent of the risk of divorce, as compared with women with no children at all. These estimates are highly significant. Of course it is also possible that more stable marriages from the onset may encourage the couple to have children sooner and in greater numbers. Also the civil and legal authorities may be less inclined to grant a divorce if the marriage has produced more children. The direction of causation between fertility and divorce is therefore not entirely clear, but the association is strongly evident in the data.

Influence of son-preference on divorce

Son-preference is a social phenomenon in Chinese societies for thousands of years. A son is not only important as a worker in

the household but he is also necessary to continue the family line. Although the government has tried to promote the status of daughters in families and some young urban couples have begun to moderate their preference for sons, less progress has been made in reducing son-preference in rural areas.

The probability that a woman will have a son increases as she has more children, but because fertility and marital dissolution may be jointly affected by similar unobserved factors, having no son and divorce can be spuriously interrelated. The effect of son-preference on divorce can be isolated, however, by comparing the effect on divorce of having no daughter or having no son, given the randomness of a child's sex. To compare divorces of women who have no son with those who have at least one son is likely to overstate the impact of son-preference, by combining it with the more general preference for fertility (i.e. proven fecundity) and the joint determination of family size and marital dissolution.

We tried to estimate models with a time-varying covariate classified by number and sex of children. Unfortunately it did not work because the limitations of sample size. Currently we have a time-fixed variable indicating whether she has at least one son or no son at the time of divorce or censoring, and a time-varying covariate of the number of children of either sex. We think this combination of variables can capture the influence of son-preference on divorce, while controlling for the effect of number of children or no children at all.[11] The estimates of the hazard model show that, everything else being equal, the relative risk of

women who have at least one son is only 13 percent of the level that is associated with women who have no son, and as expected, the hazard model estimates are highly significant. Another study on 1,000 cases of divorce by Zhao et al. (1987, p. 169) also found that in their sample, 50.3% of the divorcees are childless women, 27.1% with one child, 14.2% with two children and 8.4 with three or more children. Among 271 divorcees with one child, 202 had only a daughter. Morgan et al. (1988) found that sons reduce the risk of marital disruption by 9% more than do daughters based on the 1980 Current Population Survey of the United States. Their explanation of this phenomenon in the United States in which there is less son-preference is that a father's greater role in raising sons than daughters and his consequently differential involvement in the family. This, however, may only be part of the reason for the lower divorce rates associated with women who have at least one son in Chinese society. Sons not only result in the father's greater involvement in the family, but also satisfy his desire to continue his family line. Obviously, son-preference not only has an effect on fertility but also on marriage dissolution. Although there is no detailed data to show the social and psychological status of the women whose marriages were ended mainly due to their not having had a son, it is reasonable to speculate that these women are of particularly low status in Chinese society (Barclay, 1954). Changing the traditional values that lead to son-preference and reducing the related discrimination against women who have no sons warrant high priority as a social goal in China.

CONCLUSION

This study demonstrates that the level of divorce in China is extremely low, in comparison with other developed and developing countries. Similar to findings from other studies, the risk of divorce for women who married before age 18 is higher than those married after age 20, controlling for several other socio-demographic factors. Arranged marriage has a risk of divorce which is about 2.5 times as high as the non-arranged ones. The divorce level in urban areas is higher than in rural areas. The greater proportion of arranged and early marriages plus some other special factors in a relatively less developed region (Shaanxi) contributes to its higher divorce rate, in comparison with another relatively advanced region (Shanghai). Education and occupation are not statistically significant determinants of divorce. Our estimates show that holding other things equal, women with 1,2, and 3 or more children have only about 43.7, 27.3 and 22.5 percent of the risk of divorce as compared with women with no children at all. Son-preference not only has an effect on fertility but also exerts an effect on marriage dissolution. Women with no son have significantly higher risk of divorce than those with at least one son.

Divorce in China has been increasing in the 1980s. What will be the future trend? While it is very difficult to predict, due to many uncertainties, it is useful to compare the divorce trend in Japan and Taiwan, two economically more developed societies with cultural traditions that are similar to mainland China. Divorce

rates in Japan increased by one-third between 1975 and 1988, but they are still low in comparison with other industrialized nations, being about a quarter to a half as high as the crude divorce rates around 1980 in the United States, Russia, United Kingdom and Denmark (Fukurai and Alston, 1990, p. 453). As shown by Thornton et al. (1992), the trend in divorce in Taiwan has been similar to Japan during the Twentieth Century. Both societies experienced substantial declines in divorce before World War II as well as a relatively constant level of divorce in the years following the War. But from 1970 to 1990 the divorce rate in Taiwan tripled. However, Taiwan's divorce rate is still relatively low, as compared with other developed societies. Mainland China will not follow the trajectory of divorce rates observed in Taiwan and Japan. It is, however, clear that modernization in China will certainly lead to a further increase in divorce rates. On the other hand, the Chinese cultural tradition may continue to play an important role, so that the divorce level in China may remain low relative to high developed countries and many developing countries, at least in the near future.

Notes

1. Although detailed demographic data were not released before 1982, large national and retrospective surveys conducted after 1982 filled in the gap by providing single-year age-specific rates of first marriage and fertility from 1940 onwards.

2. A substantial part of the increase in rural incomes after the reforms was spent on improvements to the stock of housing. Residential investment may continue to absorb a growing share of national resources as the demographic composition of the population changes, personal incomes rise, and housing and the inputs to residential construction become increasingly privatized.

3. These are single-decrement life table estimates, namely, only one exit (divorce or remarriage) from the original status (married or divorced or widowed) is considered. This is the simplest and most straightforward approach to identify the trend and the level of divorce. For further study of how divorce and remarriage may affect women's family life course, we may need more sophisticated multi-state increment-decrement life table techniques (see, for example, Willekens, 1982; Zeng Yi, 1988).

4. Many people would not agree to have a divorced woman or man as their own spouse or as their children's spouse. It was reported, for example, that the officers in a civil affairs department warned a girl with brutal honesty before issuing the "divorce certificate" to her and her partner who had a marriage license but had not conducted a wedding and both partners agreed to divorce: "When you got your marriage license, it was as good as hopping into bed; who's going to want you now?" (Zhang, 1989, p. 58).

5. If the divorce is uncontested, the procedure set down in Article 24 of the 1981 Marriage Law applies, "Both parties should apply for divorce to the marriage registration office. The marriage registration office, after clearly establishing that divorce is desired by both parties and that appropriate measures have been taken for the care of any children and property, should issue the divorce certificate without delay." If one of the parties contests the divorce, then the provisions of Article 25 are followed. "The organizations concerned may try to effect a reconciliation, or the party may appeal directly to the people's court for divorce ... . The people's court should try to bring about a reconciliation between the parties. In cases of complete alienation of affection and when mediation has failed, divorce should be granted." (quoted from Yang Dawen, 1987, p. 156)

6. This is similar to the life expectation calculation based on the age-specific death rates observed in one particular year. This kind of period life table measurement does not reflect the actual experience of any real cohort, but it gives summary indexes

measuring the intensity of the demographic process under study in the period.

7. Since the survey interviewed women of age 15 to 49, the earliest year which can be studied here is the first half of the 1950s. Given the fact that we have only 210 divorcees and 257 widows in the sample, we cannot break the period into more categories due to sample size limitations.

8. The In-depth Fertility surveys only collected the information of the current husband of those currently married, and the last husband of those not currently married. In the entire sample of the three provinces, 13,307 women were interviewed, and there are 210 divorces recorded. Only 38 (18.1%) of these women remained divorced at the time of the survey. In other words, the information on the 172 (82.9%) remarried women's current husbands is not appropriate for explaining their previous divorce experience. In Shaanxi, Hebei and Shanghai, 86.9, 93.9 and 64.5 percent of the ever-divorced women were remarried at the time of the survey.

9. It is interesting to note that both Menken et al (1981) and Balakrishnan et al. (1987) also found education was not statistically significant in the Cox proportional hazards model of divorce in the United States and Canada.

10. One might estimate the hazard model for each of the three provinces separately. We did not do so because the limitation of the number of events (divorce) recorded in each province's sample (49 in Hebei, 99 in Shaanxi and 62 in Shanghai). We think that to treat a province as one covariate in a model using all other information from the three regions can parsimoniously control for the influence of region on divorce and reduce the problem of small sample size.

11. We did not treat the variable of "whether she has a son" as a time-varying covariate, not only because the cost of performing the estimations with time-varying variables is very high, but also because we believe that in the years immediately following the marriage, the influence of son-preference on divorce would not be evident, since at this time it is not clear whether the woman will produce the desired son. These results therefore include only the "son" status at the time of divorce or censoring, or in other words as a time-fixed covariate.

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Table 1. Five-year duration specific rates of divorce based on the first phase of the In-Depth Fertility Survey data (all covariates combined)

	Years after marriage				
	0-4	5-9	10-14	15-19	20-24
Divorce rates	0.0022	0.0010	0.0005	0.0005	0.0003

Table 2. Five-year age specific rates of divorce based on the first phase of the In-Depth Fertility Survey data (all covariates combined)

	Age						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Divorce rates	0.00379	0.00216	0.00117	0.00086	0.00037	0.00044	0.00088

Table 3. Percent of divorced based on the period life tables using data from the first phase of the In-Depth Fertility Survey

	Exact Years after marriage			
Periods	5	10	15	20
All years combined	1.1	1.59	1.82	2.04
before 1966	2.0	3.10	3.10	3.10
1966-1975	0.8	1.40	1.50	1.80
1976-1985	0.8	1.30	1.60	1.90

Table 4. Life table percent of dissolution of first marriage of females by separation or divorce within 5, 10 and 20 years in selected Asian countries or regions

Country or region	Years after first marriage		
	5	10	20
Mainland China[a]	1.1	1.59	2.04
Taiwan[b]: 1976	-	-	7.14
1989	-	-	14.29
Fiji[c]	7.0	9.79	12.50
Indonesia[c]	28.00	33.04	37.06
South Korea[c]	2.00	2.98	4.92
Malaysia[c]	10.00	12.70	15.32
Philippines[c]	2.00	2.98	4.92
Thailand[c]	9.00	11.73	15.26
Bangladesh[c]	9.00	11.73	13.50
Pakistan[c]	2.00	2.98	4.92
Sri Lanka[c]	4.00	5.92	8.74
Jordan[c]	2.00	2.98	4.92
Syria[c]	3.00	3.97	4.93

Note: [a]based on the first phase of In-depth Fertility Survey conducted in 1985 in Shanghai, Shaanxi and Hebei.
[b]Tu and Lee (1992), period life table measures.
[c]quoted and calculated from Table 2 in Smith et al. (1984), based on the World Fertility surveys conducted in these countries in the 1970s and early 1980s.

Table 5. Life table proportion of divorced by covariates, based on the first phase of the In-Depth Fertility Survey data

Marriage duration in years	Percent divorced				Sample size	
	5	10	15	20	# marriages	# divorces
Province**						
Hebei	0.81	1.02	1.18	1.18	5164	49
Shaanxi	1.67	2.37	2.56	2.98	4252	99
Shanghai	0.90	1.61	2.04	2.28	4211	62
Residence*						
Urban	0.93	1.97	2.43	2.95	4251	75
Rural	1.18	1.49	1.65	1.76	9376	135
Marriage cohort**						
<1966	1.98	2.53	2.65	2.89	3450	107
1966-85	0.74	1.23	1.64	1.73	10177	103
Age at marriage**						
<18	2.22	2.74	3.23	3.52	1834	68
18-19	1.58	2.04	2.16	2.29	2574	53
20-24	0.66	1.13	1.26	1.51	6776	64
>=25	0.81	1.64	2.17	2.17	2443	25
Arranged or not arranged marriage**						
Arranged	3.09	3.88	4.28	4.49	1827	77
Not Arranged	0.77	1.22	1.42	1.64	11800	133
Whether have at least one son						
>= 1 son	0.29	0.70	0.93	1.17	9714	124
No son	3.81	4.90	5.30	5.30	3913	86
Interviewee's education						
No education	1.34	1.71	1.92	2.09	4262	78
Primary	1.24	1.67	1.83	1.88	4340	73
>= Secondary	0.73	1.60	2.08	2.77	5025	59
Occupation						
Housewife	1.24	1.77	2.03	2.13	6564	110
Agriculture	1.14	1.14	1.22	1.33	2275	26
Non-agriculture	0.90	1.69	2.01	2.52	4788	74
Parents'education						
No education	1.11	1.57	1.77	1.99	11449	177
Primary	1.05	2.15	2.71	2.71	1406	19
>= Secondary	1.14	1.87	2.55	3.20	772	14

Note: Two stars "**" and one star "*" means the differences among the categories of the covariate are statistically significant at one and five percent levels, respectively.

Table 6. Estimates of the Coefficients and the Relative risks based on the hazard models

Covariates	Category	Model 1		Model 2		Model 3	
		Coeff.	Rel. Risk	Coeff.	Rel. Risk	Coeff.	Rel. Risk
Province (Hebei)	Shaanxi	0.5177****	1.678	0.5285****	1.697	0.4735***	1.606
	Shanghai	0.2113	1.235	0.2013	1.222	0.2379	1.269
Residence (Rural)	Urban	0.3640*	1.439	0.3626**	1.437	0.4082***	1.504
Year at 1st mar (<1966)	>=1966	0.6972****	2.008	0.6732****	1.960	0.4893****	1.631
Age at 1st mar (>=25)	<18	0.9914****	2.695	0.9412****	2.563	0.9103****	2.485
	18-19	0.7486***	2.114	0.7081***	2.030	0.7361***	2.088
	20-24	0.1190	1.126	0.0931	1.098	0.1559	1.169
Arranged mar (No)	Yes	1.0049****	2.732	0.9816****	2.669	0.9237****	2.519
At least 1 son (No)	Yes	-2.3660****	0.094	-2.3651****	0.094	-2.0426****	0.130
W's educ. (No educ.)	Prim.	0.1743	1.190				
	>= Mid.	0.1513	1.163				
P's educ. (No educ.)	Prim.	0.1993	1.221				
	>= Mid.	0.1389	1.149				
W's occup. (housewife)	Agri.	-0.0726	0.930				
	Non-Agri	-0.1205	0.887				
Time-varying covariate							
No. of sur. children (no child)	1 child					-0.8279****	0.437
	2 child					-1.2968****	0.273
	>=3 child					-1.4929****	0.225
Global Statistics							
Log likelihood		-1691.64		-1692.59		-1672.97	
Global Chi-Square		370.87		369.31		452.37	
Degree of freedom		15.		9.		12.	
P-Value		0.0000		0.0000		0.0000	

Note: a. the category in the parentheses is the reference group.
b. the coefficient estimates with four and three stars (*) indicate the estimates are statistically significant in a two-tail test at one and five percent levels, respectively. Two and one stars mean the estimates are statistically significant in a one-tail test at one and five percent levels, respectively.