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The Effects of Child-Bearing Policies in Remarriages: Evidence from China

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Keywords
Fertility policy, Marriages, Divorces, Remarriages

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The Effects of Child-Bearing Policies in Remarriages: Evidence from China*

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In this paper we document the fertility policies for remarried couples in the People's Republic of China, and investigate their effects on the women's first marriages. Our evidence suggests that the child-bearing policies in remarriages have a significant effect on the characteristics of first marriages, including the ages of first marriage for the women, age gap, age of first child birth, age lapsed between first marriage and first child birth, number of children, and the divorce rates. We also plan to investigate whether these results are consistent with a forward-looking marriage model.

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JEL Classification Codes: J13

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1 Introduction

China's family planning policies, adopted since 1979, have had profound effects on the demographic changes in China. Its annual population growth rate decreased from about 1.5% in the early 1980s to less than 0.5% in 2007-2009 (World Bank). The one-child policy reduced China's total fertility rate from close to 3.0 in late 1970s to about 1.7 currently (below the replacement rate). It has been widely estimated that the so-called "One Child Policy" helped to prevent between 350 and 400 million births. It is also estimated that China's population is to reach its peak at around 2030 at about 1.4 billion if its one-child family planning policy were to continue.

It is well known that China's One-Child Policy is not uniform across urban and rural areas, and is applied only to the ethnic Han population. According to the fertility policy in effect at the provincial level, the 31 mainland Chinese Provincial-level administrative regions can be classified as follows. First, there is an urban-rural differentiation. For Chinese with an urban (nonagricultural) household registration status, one child per couple is uniformly the rule. Second, for the majority of the Chinese population with rural or agricultural household registration status, provincial-level fertility policy can be grouped into three categories: (1). One-Child Policy; in six provinces, Beijing, Tianjin, Shanghai, Chongqing, Jiangsu, and Sichuan, almost all residents are expected to follow the one-child-per-couple policy; (2). "1.5-children" policy; in 19 provinces, rural residents are allowed to have a second child after a specified birth interval if the first child is a girl; (3). Two-Children policy; in five provinces, Hainan, Ningxia, Qinghai, Yunnan, and Xinjiang, all rural couples are allowed to have two children. The above across-province variations in the policy of the number of children allowed for rural couples have been exploited in many studies on fertility and sex imbalance.

What is mostly ignored is the effect of policies regarding child-bearing in remarriages following a divorce. This may be a result of the historically low divorce rates in China. However, in 2009, the Chinese Ministry of Civil Affairs reported that one five Chinese marriages ended in divorce, and the number of Chinese couples breaking up in that year reached 1.71 million, a 10.3% increase from the previous year. The divorce rate, measured as the number of divorces per 1,000 people, is about 1.85‰, more than four times the divorce rate in 1985 (which was 0.4‰).

To the extent that couples value having their own biological children, if a person is divorced from his/her previous marriage, and is looking to form a new marriage, then the prevailing child-bearing rules would have a profound impact on a number of issues,

including the possibility that such new marriages may form, who would be willing to form such marriages, the bargaining power of the couples within the new marriage, and the quality of such marriages. Equally importantly, anticipating the consequences that divorce may have on the quality and bargaining positions in subsequent remarriages, if any, we would expect that the behavior of never-married individuals will also be affected when they contemplate forming their initial marriages. To the best of our knowledge, the effect of these policy variations have not been examined in the existing literature.

In this paper, we first documents some facts about the following list of variables: (1). Ages at first marriage for men and women; (2). Age gaps between husbands and wives in first marriages; (3). Age for giving first birth; (4). Fraction for giving second births when permitted by the fertility policy; (5). Divorce rates in first marriages; (4). Ages at divorce; (5). The custody arrangement of the children born in the first marriage; (6). Fractions of divorced couples that remarry; (7). The characteristics of the re-marriages: age gaps between husbands and wives, the prior marriage histories of the new couples, the prior child bearing histories of the new couples; (8). child bearing histories of re-marriages. We will separately document the above facts for rural and urban households given that the family planning policies for the first marriage differ for rural and urban households.

We then examine the relationship between the facts and the fertility policies, both the family planning policies for the first marriage and the re-marriage child bearing policies.

As we mentioned earlier, there are limited cross-province variations for rural households in the fertility policies for first marriages; but we will describe in details in Section 2, there are very rich variations in child bearing policies for second marriages. We would like to examine the systematic relationship between these policies and documented outcomes at the province level.

The two aims listed above will be addressed using two different data sets: (1). 1% sample of the 2000 China Census micro level data; (2). Vital statistics data about the number of marriages/divorces/remarriages from China's Ministry of Civil Affairs, aggregated at the province level.

Our research fills in a gap in the literature regarding the effect of fertility policies in remarriages on marriage and divorce. We also present a model of forward-looking men and women in the marriage market, anticipating the probability that marriages may end up in divorce. We show that the province-specific fertility policies in remarriages will have a systematic effect on the first marriages, consistent with the facts we document.

The remainder of the paper is structured as follows. In Section 2 we describe the various

child-bearing rules for remarried couples in different provinces in China; in Section 3 we use the detailed vital statistics data from China's Ministry of Civil Affairs to describe the increasing trends of divorces and remarriages in China from 1979 and show some preliminary relationship between marriages/divorces/remarriages and the provinces' remarriage fertility policy ; in Section 4 we describe the 2000 Chinese Census data in 2000, and explain how we used the information in the census to construct women's marriage, divorce and fertility histories; in Section 5 we present some descriptive statistics from the Census data; in Section 6 we present our main empirical results; in Section 7 we sketch an equilibrium model of marriage, divorce, fertility and remarriage as a framework to understand the empirical findings; and finally in Section 8 we conclude.

2 Provincial Level Child-Bearing Rules for Remarried Couples

In Table 1 we describe the cross-province variations in child-bearing rules for remarried couples.[1] Whether a remarried couple are allowed to have additional child depends on how many children the spouses have (including adopted children) from their prior marriage, or how many children the spouse have given birth to in prior marriage, or how many children the spouses have in prior marriage and but do not have custody, or how many children the spouses have given birth to in prior marriage but do not have custody.

[Table 1 About Here]

Notice that there are many different rules regarding whether additional child birth is permitted by couples who have previously married. The most restrictive fertility policy is [1+0], as followed in Chongqing, Fujian and Sichuan, which states that the couple is allowed to have an additional child only if at most one of the couple had (including children born to oneself and adopted, but must be alive) at most 1 child before remarriage. Slightly more lenient polices are [1'+0'] or [1+0'] where the remarried couple is allowed to have an additional child only if at most one of the spouses have had at most 1 biological child.

As can be seen from Table 1, there are a total of ten variations in the fertility policies in the 30 provinces and province-level municipalities in China: 1+0, 1'+0', 1+0', 2+0, 2'+0',

[1]The fertility policies for remarried couples are publicly available from the website of National Population and Family Planning Commission of People's Republic of China, where the population and family planning regulations of all provinces and provincial municipalities are listed. The website is: http://www.chinapop.gov.cn/xxgk/zcfg/ [last accessed: August 30, 2012].

[1+0' or 2'+0'], [1+0 or 2'+0'], [1'+0' or 1*+1*], [1'+0' or 1*'+1*'], X+0. In our empirical analysis, however, we group all the provinces and province-level municipalities into four types as summarized in 2:

- Group I, which for simplicity we will refer to as "1+0" provinces, include all provinces with either 1+0 or 1'+0' or 1+0' rules. These provinces are Jiangxi, Guangxi, Guizhou, Anhui, Zhejiang, Xinjiang, Henan, Yunnan, Shaanxi, Qinghai, Ningxia, Sichuan, Hunan, Beijing, Fujian, Tianjin and Chongqing.

- Group II, which for simplicity we will refer to as "2+0" provinces, include all provinces with either 2+0, 2'+0', [1+0' or 2'+0'], [1+0 or 2'+0'] rules. These provinces are Heilongjiang, Shanghai, Hebei, Liaoning, Jilin, Jiangsu and Hubei.

- Group III, which for simplicity we will refer to as "X+0" provinces, includes only Gansu province.

- Group IV, which for simplicity we will refer to as "1+1" provinces, include all provinces with either [1'+0' or 1*+1*] or [1'+0' or 1*'+1*'] rules. These provinces are Shanxi, Shandong, Guangdong, Hainan and Inner Mongolia.

[Table 2 About Here]

We categorized the provinces into four groups based on the similarity of the fertility policies in remarriages. For example, even though the policy for some of the provinces in group I is 1'+0', for example, Jiangxi, Guangxi, Guizhou, Anhui, Zhejiang and Yunnan, while some others are 1+0', for example, Shaanxi, Qinghai and Ningxia, their differences from 1+0 is somewhat minor because they differ only in whether the one child has to be naturally born to one of the spouses or adopted child is also included. The heterogeneity among the provinces in Group III and Group IV provinces are similarly minor.

It is also important to point out that there does not seem to have systematic relationships between the groupings of the provinces and the geographic locations and economic developments of the provinces. Figure 1 depicts the groupings graphically. It can be seen from Figure 1 that the largest group, Group I, includes provinces in the western part of China, Xingjiang and Ningxia, but also eastern provinces such as Zhejiang, Fujian, as well as southwestern provinces such as Yunnan and Guangxi. similarly, Group IV provinces include northern province of Inner Mongolia, southern province of Guangdong and Hainan, as well as eastern province of Shandong.

[Figure 1 About Here]

3 Trends of Divorce and Remarriages in China

Divorce and remarriage rates were extremely low in china in the 1960s and 1970s, but both have increased dramatically since 1980s (Zeng and Wu 2000, Wang 2001, Palmer 2007). There are multiple causes for the rise of divorces and marriages since the 1980s. First and foremost, a New Marriage Law enacted in 1981 largely relaxed the legal restrictions on granting divorce. The key change in the 1981 Marriage Law is that it placed a much stronger emphasis on the emotional basis for a happy marriage, which considerably eased the requirements for divorce. In particular, Article 24 of the 1981 Marriage Law reads: "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 reconciliation between the parties. In cases of complete alienation of affection and when mediation has failed, divorce should be granted." (Yang, 1987). China's rapid economic growth since the economic reform also significantly contributed to the increase in divorce and remarriage rates (Wang and Zhou 2010).

Others have discussed other potential reasons for the increase in divorce and remarriages. For example, Honig and Hershatter (1988) argued that, the economic reform and the opening-door policy implemented at the end of the 1970s have enabled more women to control economic resources and become economically independent, which may have increased their ability to seek or agree to a divorce if they are unhappy with their marriages. A third potential reason for the increases in divorces must be changes in social norms as Western attitudes about divorce, and more generally the culture of individualism, has spread widely in China as China opens up to the world (see, for example, Chu, 1994, for discussions).

In this section, we use the data from China Civil Affairs' Statistical Yearbook from 1979-2009 to document the changes in the total number of marriages, divorces and remarriages, both in the aggregate and separately by province types as we listed in Table 2. China Civil Affairs' Statistical Yearbook is compiled by the Ministry of Civil Affairs of the People's Republic of China and published annually by China Statistics Press. The data set is available from the authors upon request. The data from China Civil Affairs' Statistical Yearbook contains detailed information regarding the total number of newly registered mar-

riages, newly registered divorces and newly registered remarriages by province or provincial municipality each year from 1979 to 2009.[2]

Figure 2 graphs the total number of marriages, divorces and remarriages, in persons, aggregated over all provinces, from 1979 to 2009.[3] The reason we report all the numbers in persons is that the data in the Civil Affairs Statistical Yearbook reports the number of remarriages by counting the number of people who have been married before and are now part of a newly registered marriage. For example, if a couple is registered for marriage, but only one of them is remarried, the data set records only one person for remarriage; however, if both of them are in their second marriages, the data counts two people in the record for remarriages. We do not know the composition of remarriages in terms of how many of them involved one (or two) remarried persons. We thus decide to multiply the number of newly registered marriages and divorces in the data set by two to obtain the total number of marriages and divorces in persons. Figure 2 shows clearly the dramatic rise of the number of divorces and remarriages in China over this period. While the total number persons involved in new marriages from 12.6 million to 24.2 million from 1979 to 2009, the number of persons involved in divorces skyrocketed from less than 600 thousand in 1979 to close to 5 millions in 2009, more than 800% increase! Similarly, the number of remarried persons increased from slightly less than 467 thousand in 1979 to 2.6 million in 2009, close to a 500% increase in the thirty-year span.[4]

[Figures 2-5 About Here]

The trends of increasing number of divorces and remarriages suggest that the fertility policies in remarriages should play a more important role in individuals' decisions regarding first marriage, fertility and divorce. In Figures 3-5, we respectively depict, by province type, the number of new marriages in persons, the number of divorces in persons and the number of remarriages. Even though the differences in levels across the province types are not meaningful because there are different numbers of provinces in the groupings, it is interesting that there seems to be different trends across the provinces types. For example,

[2]The information regarding the number of remarriages was not available for three years, 1982-1984.

[3]With tabulations for total population, and percentage of married population available from China Statistical Yearbook, published by the National Bureau of Statistics of China (NBSC), one can calculate the standard crude divorce rate, refined divorce rate and remarriage rate. We do not do these calculations in this section. See Wang and Zhou (2008) for such calculations.

[4]It is also interesting to note that a large fraction of the remarriages in 1979 was between couples who divorced each other during the Cultural Revolution, who decided to recover their marriages.

in Figure 3, we see that there was a spike of new marriages in 1981-82 for all province types, but then the number of new marriages in Group II and IV provinces stagnated till 2005, and there was a moderate uptick from 2005 to 2009; in contrast, in group I and III provinces, the number of new marriages initially increased from 1982 till about 1991-1992, but then somewhat declined till 2004; but since 2004 the number of new marriages have witnessed a much more robust increase.

In Figure 4, we see that the number of divorces has experienced drastic increases in all four groups of provinces, but the increase is much more steep in group I and group III provinces. Similarly, in Figure 5, we see that the number of remarriages increase much faster in group I and III provinces than in group II and IV provinces.

Figures 6-8 show respectively the divorce/new marriage ratio, the remarriage/new marriage ratio and the remarriage/divorce ratio in the four groups of provinces. Note that in Figures 6-8, in contrast to that in Figures 2-5, the size of the groups do not matter. In Figure 6, we see that the divorce/new marriage ratios have been rising in all three groups of provinces, but the rise seems to be much larger in "2+0" provinces than in the other three groups.

Figure 7 shows that the fraction remarriages also accounts for a much larger fraction of all new marriages in group II "2+0" provinces than in other groups. Interestingly, however, Figure 8 shows that the remarriage/divorce ratio has been converging over time, though those it is typically lower in Group III "X+0" provinces than in other groups.

While Figures 6-8, which are based on marriage, divorce and remarriage statistics by province aggregated over all birth cohorts, is suggestive that the fertility policies in remarriages might have played a role in the marriage and divorce decisions, we do not know whether they simply reflect the cohort effects.

In the next section, we use individual level data from Chinese census to shed further light on whether the fertility policy for remarriages played any role for the observed empirical patterns documented above.

[Figures 6-8 About Here]

4 The Census Data

The 2000 China Census data is a 1% population sample survey conducted on November 1st, 2000, conducted by National Bureau of Statistics. This survey covers two types of population. First is all population living in the survey area on October 31st, 2000, regardless

whether their Hukou registration is in the survey area. Second is all population whose Hukou registration is in the survey area but did not live in the area of investigation on the evening of October 31st, 2000. The survey has information on the respondents' hukou registration status as well as the sociodemographic information, e.g. sex, age, educational level, marital status.

First we correct some data entry mistakes.

- In raw data 2000, number of ever-born girls and number of survived boys were switched by mistake. That is, "numbirf" is in fact number of survived boys, while "numsurm" is in fact number of ever-born girls. We correct this mistake by switching these two variables back.

- In some households there are more than one heads or head's spouses. We can identify each household according to their household id, and we count the number of household heads and their spouse by id. We drop households with duplicate heads and head spouses. We drop 429,483 (3.64%) observations with 599 heads, and 23,399 (0.20%) observations with 600 heads. After dropping duplicate heads, we drop 1,801 (0.02%) observations with 600 head spouses.

- We drop those households if the difference between persons' ages and their kids' is less than 16 years. Notice that in remarried households, kids could even be older than one of the parents because the kids could be brought from the previous family of the remarried parent. In these households, we restrict oldest kid age should be 16 years smaller than the older parent's, so 316 (0.00%) observations were deleted due to the violation of this criteria. In other kinds of households, the oldest kid should be at least 16 years younger than the younger parent, so 16,197 (0.14%) observations were deleted according to this rule. As for head, head spouse and their parents, their relationship is also a parent-kid relationship. So the parent's age should be at least 16 years older than the kids. We delete 8,370 (0.07%) observations with the age difference between head and head's parents' less than 16, and 1,114 (0.01%) observations with the age difference between head's spouse and parents of head's spouse less than 16.

In Census, data was collected at individual level and people in the same family has the same household id. We keep mother as the identification of a household because every household has a mother and we can observe children through mother's fertility history. We collapse the data at household level with mother as the identifier. We define "mother" as a female who is either household head or head's spouse.

We can further define "father" as the mother's spouse, if she has one. Since the Census asked about both couples' marital status, we can further categorize a couple's marital status into the following groups: both first-married, husband first-married and wife remarried, husband remarried and wife first-married, and both remarried.

Similarly, we can identify the child-bearing relationship by the household id and interviewee's relationship to the head. Furthermore, we can sort all people with the same household id by their birth date so that we are able to identify the oldest children in the family, as well as the second oldest, etc. We also get supplementary information about mother's fertility history directly from Census, such as how many boys and girls she ever gave birth to and how many boys and girls were alive.

After collapsing the data from individual level to household level, we are able to get 2,992,977 "mothers" out of 11,323,664 individuals. we drop those observations with first marriage age less than 16 (23,950 observations, or 0.80%), or with husband's first marriage age less than 16 (4,024 observations, or 0.14%).

5 Descriptive Statistics

In this section, we present some descriptive statistics of the key variables used in our analysis in the next section, by the type of provinces we categorized in Table 1. We focus on women in the sample. Table 3 shows the sample averages for women in terms of their Hukou type (urban or rural), their ethnicity (Han or minority), age, age of the husband at their first marriage, age of their own first marriage, age differences between the couples, the age of the first child birth for women, the fraction of women ever divorced and the fraction of divorced women ever remarried. The fraction of women in 2000 Census that had Urban hukou is about 26.2% overall, but the fraction is as low as 21.6% in "1+0" provinces, and as high as 35% in "2+0" provinces. The null hypothesis that these fractions are equal across the groups of provinces are rejected with p-value close to 0. Similarly, 92.6% of the women is ethnic Han overall, but the fraction of Han ethnicity is as low as 89.8% in "1+0" provinces and as high as 96.8% in "1+1" provinces. Again, these fractions are statistically different across the groups of provinces. Age of the husbands at the women's first marriages average about 24 years, and the average age of women at their first marriage is about 21.855. Interestingly the women in "X+0" province is married on average at age of 20.96, while those in "1+1" provinces on average marry at the age of 22.204, which is more than 1.2 years older than those in "X+0" provinces. The age gap between the husbands and wives

is on average about 2.123 years, but it is as low as 1.768 in "2+0" provinces, and as high as 2.508 in "X+0" provinces. Women's age at the first child birth also differ across the province groups: women in "X+0" provinces give birth to their first child at about 23.904 years of age, and those in "1+1" provinces give birth to their first child at about 25.405 years of age. The refined divorce rate on average is 3.6% overall, but they are as low as 2.8% in "1+1" provinces and as high as 3.8% in both "1+0" and "2+0" provinces. Again these differences are statistically significant. Finally the fraction of divorced women who remarry is on average 82.5% overall, but it varies from 79.6% in "2+0" provinces to 85.8% in "1+1" provinces.

[Table 3 About Here]

The summary statistics in Table 3 still aggregates over women of different birth cohorts. In Figures 9 to 13, we compare these statistics by the eleven birth cohorts (as defined by 5 years intervals from 1925-1929, to the birth cohort of 1975-1979). It should be noted in these figures that the cohorts born after 1970 are younger than 30 when the 2000 Census were collected, thus they are mostly likely right-censored in many of the decisions we are trying to understand.

[Figures 9-13 About Here]

6 Main Results

In this section, we describe our main results. The sample we consider only include women. In Table 4, we present the baseline results from the 2000 Census. We regress the seven variables listed in the column headings of the table on the province type dummies, Han ethnicity dummies, urban Hukou dummies, as well as 11 birth cohort dummies. The parameters of our interest is the coefficients on the province type dummies. The omitted category is province type I, i.e. "1+0" provinces. As can be seen from Table 4, the coefficient estimates on the province type dummies are all statistically significant at 1% level. For example, Column 1 shows that women in type II provinces tend to marry .267 years later than those in type I provinces, but those in type III provinces tend to marry .773 years younger than those in type I provinces, and women in type IV provinces marry about .509 years later than those in type I provinces.

[Tables 4-5 About Here]

The findings in Table 4 could be driven by the ex ante differences across the provinces in different groups other than the difference in the fertility policies in remarriage. In Table 5, we exploit a difference-in-difference strategy: note that the remarriage fertility policies only apply to women of Han ethnicity, not to minority women. Thus the difference in the impact of the province types between the minority women and Han ethnicity is more likely to reflect the effect of the fertility policies. Of course, this empirical strategy still relies on the assumption that the Han ethnic women and the minority women would otherwise behave similarly. Table 5 shows that the coefficient estimates of the interaction terms "Province Type X Han" are still statistically significant for most, though not all, of the variables. This suggests that indeed the fertility policy in remarriages may indeed have played a role in causing the difference in the marriage, fertility, divorce and remarriage behavior of Han ethnic and minority women.

In Tables 6-7, we exploit another difference-in-difference empirical strategy. We note that the cohort of women born before 1940 would have been about 39 years or older when the family planning policies were introduced in China in 1979. To the extent that women older than 40 were unlikely to bear more children, their marriage, fertility, divorce and remarriage decisions are not affected by the fertility policies for remarriages. Thus the differential impact of the fertility policies in remarriages on the cohort born before and after 1940 is more likely to reflect its causal impact. Again as can be seen from Table 6, the coefficient estimates of the interaction terms "Province Type X Cohort after 1940" are still statistically significant for most, though not all, of the variables.

[Tables 6-7 About Here]

While the above results are moderately interesting, there are some difficulties in their interpretations. First of all, depending on specifications, we seem to obtain rather different estimates on the impacts of the remarriage fertility policies on women's behavior. For example, for the variable "Age Gap at Firs Marriages", we found in Table 5 when we use the Han/Minority difference-in-difference strategy that, while the age gap between husbands and wives in type II provinces tend to be lower by .544 years than in type I provinces overall, the age gap is only -.49 years lower for Han women in type IV provinces than in type I provinces. In contrast, Table 7 shows that cohort born after 1940, the cohort affected by the family planning policy, has an age gap that is .25 years smaller than the cohort unaffected by the policy. We need to conduct more research trying to understand these conflicting findings. For example, we are now conducting additional analysis using a triple difference

strategy by estimating the coefficient on the triple interactions between province types, dummy for cohort born after 1940 and Han ethnicity. We will report the findings from this specification in a later revision.

7 A Model

In this section, we present an equilibrium model of marriage, fertility, divorce and remarriage and hope to use the model as a framework to understand the role of remarriage fertility policies in the empirical patterns we documented above. Our model is in the spirit of Chiappori ad Weiss (2006), but we make two important departures. First, we assume that parents prefer to have their own biological children; Second, we assume that women's fecundity declines with age. Below we first provide some evidence in support of these two assumptions.

7.1 Empirical Evidence for Two Key Modeling Assumptions

1. Parents prefer to have own biological children. The evidence for this assumption is very persuasive. Hetherington (1992) showed that on average, stepfather showed less affection toward stepchildren and engaged in less supervision of them. Daily and Wilson (1996) found that step-parents invest little of themselves in their stepchildren because they are not genetically related to them. Hofferth and Anderson (2003) found that, generally speaking, stepfather invested (spending time) significant less on children comparing to biological father. This theory proposes that stepparents who also are parents discriminate in favor of their genetic children. They interact with stepchildren to impress their new partners rather than to foster stepchildren. Steward (2005) found that step-parents engaged less in active activities with their children. Also, parents with only stepchildren show a decline of involvement nearly twice as great as parents with stepchildren and biological children and only biological children. Akashi-Ronquest (2009) found that on investment, parents prefer their biological children than stepchildren. An increased wage rate of a biological mother significantly improves her child investment if her husband is a stepfather, while there is no effect with a biological father.

2. Women's fecundity declines over age. The evidence for this assumption is also abundant. The biological basis for the declining fecundity is well understood: Women are born with a finite number of eggs, around 1 million. At puberty, that number has

dwindled to 400,000 and subsequently approximately 750 eggs are lost each month. The eggs not only begin to diminish in quantity, but also in quality. The combination of these factors leads to a woman's fertility beginning to decline in her 20's and significantly deteriorating after age 35. Scheffer and Dorland (1999) found that antral follicle count showed the clearest correlation with age (R = -0.67). Before the age of 37 years, the antral follicle count showed a mean yearly decline of 4.8%, compared with 11.7% thereafter. The reproducibility of the antral follicle count in two subsequent cycles was moderate. A de Vet, de Jong, and Themmen (2002) found that Serum concentrations of antimüllerian hormone decreased over time in young normoovulatory women. Dunson, Colombo and Baird (2001) found that, on average, the day-specific probabilities of pregnancy declined with age for women from the late 20s onward, with probabilities of pregnancy twice as high for women aged 19–26 years compared with women aged 35–39 years. Dunson, Baird and Colombo (2004) found that women aged 19-26 years had significantly higher probabilities of pregnancy than women aged 27-29 years (P = .01). Women aged 30-34 years were similar to the 27 to 29-year-olds, but women aged 35-40 years had further reductions in their probabilities of pregnancy. Hull, Fleming, Hughes and McDermott (1996) found that the numbers of oocytes and consequent embryos declined with age. Embryo implantation rates were reduced when no more than three embryos were available (9.3 percent), especially in women aged 35 to 39 years (6.2 percent) or older compared with four or more embryos (17.1 percent) but were equally low in all women over 40 years even with more embryos (6.1 percent).

7.2 Model

Our model is adapted from Browning, Chiappori and Weiss (2012, Chapter 10). Consider a society in which there is an equal number of men and woman, and all individuals are ex ante identical and live for two periods. We first consider a baseline model with just one cohort. This baseline model will not allow us to investigate on issues such as age gap between husbands and wives. We will then discuss how the model can be extended to allow for multiple cohorts of men and women.

Marriage. We assume that each individual aloe, consumes their own income Y. If married, however, the partners share consumption and each consumes $2Y$. In addition, marriage entails a non-monetary return θ that both partners can enjoy. This non-monetary return θ, which will be referred to as "the quality of match" sometimes, is randomly drawn

from a distribution $G(\cdot)$. Different couples receive i.i.d. draws of θ at the time of marriage. But the future quality of match is uncertain.

Marriage Market. Meetings between men and women are random. At the beginning of each period, each person randomly meets a person of the opposite sex of his/her same age group. We assume that marriage binds for at least one period. At the end of the first and second period, divorce can occur but remarriages is possible only with unattached individuals who never married before or have divorced. In the first period, one meets an eligible partner with certainty. The probability of each individual to meet a single person of the opposite sex in their second and third period of life equals the proportion in the population of unattached individuals of the opposite sex, divorced or never married.

Fertility. Marriage also provides the partners with the option to produce a child. For simplicity, we assume that at most one child can be produced in period 1 and 2. To capture the declining fecundity as we discussed above, we assume that the woman's fecundity is 1 in period 1 and $\lambda \in (0,1)$ in period 2.

The production of a *biological* child entails a cost to the parents in the first period, c, and a benefit which both parents enjoy in subsequent periods. However, an individual does not receive any benefit from a non-biological child born to the partner.

Moreover, the utility of a child is independent of household income, but depends on the proximity to their natural parents. It equals q^* if the child lives with both natural parents and to q^0 if the child lives with only one of the parents or in a step family. We assume that $q^* > c > q^0$. Both parents treat the utility of the child as a public good and it enters additively into their preferences. Partners with child find divorce more costly, because the welfare of the children is higher if the child is raised with their natural parents.

Remarriage Fertility Policies. In this baseline model, we only consider two policies: policy A: "1+0", or policy B: "1+1". Under policy A, if a divorced individual had biological child from a previous marriage, then he/she would not be allowed to have another child with a new partner if he/she were to remarry. In contrast, under policy B, a divorced individual who had a biological child from a previous marriage would be allowed to have another child with his/her new partner.

Custody of Children. We assume that women have the custody of the child born to the previous marriage.

7.3 Time Line of the Model

First Period. In period one, upon meeting, the quality of match θ_1 is revealed and the matched partners decide whether to marry or not. If they choose to marry, then then can further decide whether they wish to have a child. During each period, there is a shock ε_1, drawn from a CDF $F(\varepsilon_1)$ with a continuous PDF $f(\varepsilon_1)$, to the quality of the match, which is revealed at the end of the period. Having observed the shock at the end of the first period, the partners decide whether to divorce or not. The random variables θ_1 and ε_1 are assumed to be independent across couples. In particular, for each remarried person, the values of θ_1 in the first, second, or potentially the third marriages are independent. We assume that the distributions of both θ_1 and ε_1 have zero mean and are symmetric around their mean.

Second Period. If an individual is unmarried or divorced in the beginning of the second period, they will be randomly matched to an individual of opposite sex. However, only if the opposite sex he/she meets is also unattached (unmarried or divorced) can they consider marriage in the second period. If the pair are both eligible, they will draw another θ_2 from distribution $G(\cdot)$ and then they decide whether to get married. Each individual observes the child birth histories of the other individual he/she is matched with. In making their marriage/remarriage decisions, they take into account that the matching-mate's birth history may have an impact on whether they would be allowed to have their own children depending on whether the relevant policy regime is A or B.

8 Conclusion

In this paper we document the fertility policies for remarried couples in the People's Republic of China, and investigate their effects on the behavior in the first marriages. Our evidence suggests that the child-bearing policies in remarriages have a significant effect on the characteristics of first marriages, including the ages of first marriage for the women, age gap, age of first child birth, age lapsed between first marriage and first child birth, number of children, and the divorce rates. We also plan to investigate whether these results are consistent with a forward-looking marriage model.

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Table 1: Fertility Policies for Remarried Couples in Different Provinces in China

Province	Remarriage after Widowhood	Remarriage after Divorce
Sichuan	2+0	1+0
Jiangxi	1'+0'	
Hebei	2+0	
Jiangsu	X+0'	1+0' or 2'+0'
Shandong	1'+0'	1'+0' or 1*+1*
Shaanxi	2'+0'	1+0'
Hunan	1+0	
Shanxi	2'+0' or 1*'+1*'	1'+0' or 1*'+1*'
Guangxi	1'+0'	
Beijing	1+0	
Guizhou	1'+0'	
Anhui	2+0'	1'+0'
Fujian	2+0, 1+1 or 0+2	1+0
Guangdong	1'+0' or 1*'+1*'	
Tianjin	1+0	
Zhejiang	2'+0'	1'+0'
Hainan	1'+0' or 0'+1'	1'+0' or 1*'+1*'
Inner Mongolia	2'+0' or 1'+1'	1'+0' or 1*'+1*'
Xinjiang	1'+0'	
Liaoning	1+1	2+0
Jilin	X+0	2+0
Heilongjiang	2'+0'	
Shanghai	2'+0'	
Henan	1'+0'	
Hubei	1+0 or 2'+0'	
Chongqing	2'+0	1+0
Yunan	1'+0'	
Gansu	X+0	
Qinghai	1+0'	
Ningxia	2'+0'	1+0'

Notes to Table 1:

1. Hong Kong, Macau, and Taiwan do not implement the one-child-per-couple rule, and Tibet does not have clear local fertility policies yet.

2. Most provinces have different polices between remarriage after widowhood and remarriage after divorce, which are shown in the table above. For the columns of remarriage after widowhood, the number at the left is the number of children for the widow and number at the right is for the other member of the couple, while there is no such difference for marriage after divorce. The rows without distinguishing remarriage after widowhood and remarriage after divorce mean that those provinces do not have different policies between these two situations.

3. In the table, y means one of the couple HAD (including children born to oneself and adopted, but must be alive) at most y children before remarriage; y' means he/she only had at most y children BORN to himself/herself before remarriage; y* means that the person HAD at most y children and the custody of those children is owned by his/her last spouse; y*' means that the person had at most y children BORN to oneself and the custody of those children is owned by his/her last spouse.

   Take Anhui Province for example, for remarriage after widowhood, if one of the couple gave birth to or adopted two or less children and the other never gave birth to any children but might adopt some children, then this couple can give birth to one more child. However, for the case of remarriage after divorce, if one of the couple gave birth to only one child, no matter how many children he/she adopted, regardless of the ownership of the custody of these children, and the other never gave birth to any children, this couple can give birth to one more child.

   Take Guangdong Province as another example, for remarriage after widowhood or divorce, the couple can give birth to one more child once one of the following two conditions is satisfied. The first condition is where one of the couple only gave birth to one child, regardless of the custody ownership, and the other did not give birth to any child. The second condition is where both persons gave birth to one child before marriage but the custody of these two children is owned by their previous spouses.

   Also take Jiangsu Province as an example. For remarriage after widowhood or divorce, as long as one of the couple never gave birth to or adopted any child, no matter how many children the other person had, they can give birth to another child.

4. Some provinces have special policies for different groups of couples, which are listed below:

   (a) Inner Mongolia: For minority couples, the policy is 2'+0' or 1'+1'.

(b) Xinjiang: For urban minority couples, the policy is 2'+0' or 1'+1'. For rural Han couples, the policy is 2'+0' or 1'+1'. For rural minority couples, the policy is 3'+0' or 2'+1'.

(c) Jilin: For rural couples, the policy is X+0. For couples with handicapped children, the policy is 1+1.

(d) Heilongjiang: If one of the couples had a child born to oneself because of remarriage, they cannot have any more children.

(e) Shanghai: For couples who are both the only children, the policy is 1'+1'. For couples where one of them is from rural household and one of them is the only child, the policy is 1'+1'. For couples with one handicapped child, the policy is 1'+1'.

(f) Yunnan: For rural couples, the policy for remarriage after widowhood is 2'+0'.

(g) Ningxia: For couples with one handicapped children, the policy is 1*'+1' and the child living with them must be handicapped. For couples with two handicapped children, the policy is 1*'+1*' and both handicapped children must live with them. For couples with one dead child, the policy is 1'+1'. For rural couples, the policy is 1+1 or 2+0'.

Table 2: Groupings of Remarriage Fertility Policies

Group	Provinces	Policy
I: "1+0"	Jiangxi, Guangxi, Guizhou, Anhui, Zhejiang, Xinjiang, Henan, Yunnan, Shaanxi, Qinghai, Ningxia, Sichuan, Hunan, Beijing, Fujian, Tianjin, Chongqing	[1'+0'] or [1+0] or [1+0']
II: "2+0"	Heilongjiang, Shanghai, Hebei, Liaoning, Jilin, Jiangsu, Hubei	[2'+0'] or [2+0]
III: "X+0"	Gansu	X+0
IV: "1+1"	Shanxi, Shandong, Guangdong, Hainan, Inner Mongolia	[1'+0' or 1*'+1*']

Table 3: Summary Statistics For Women in the 2000 Census

	2000 Census				
Province type	1+0	2+0	X+0	1+1	Total
Women hukou type is urban	0.216	0.350	0.220	0.257	0.262
	(.412)	(.477)	(.415)	(.437)	(.439)
Women ethnic is han	0.898	0.948	0.921	0.968	0.926
	(.303)	(.223)	(.269)	(.177)	(.262)
Women age	42.889	43.689	40.075	43.501	43.178
	(12.95)	(12.74)	(11.37)	(13.16)	(12.92)
First marriage age of husband	23.998	23.940	23.424	24.253	24.019
	(3.847)	(3.644)	(3.551)	(3.915)	(3.801)
First marriage age of wife	21.612	22.120	20.960	22.204	21.855
	(3.095)	(3.016)	(2.966)	(3.175)	(3.100)
Age difference between couples	2.364	1.768	2.508	1.960	2.123
	(3.454)	(3.123)	(3.114)	(3.516)	(3.382)
First birth age of women	24.950	25.001	23.904	25.405	25.029
	(4.566)	(4.054)	(4.180)	(4.287)	(4.376)
Fraction of women ever divorced	0.038	0.038	0.030	0.028	0.036
	(.192)	(.190)	(.171)	(.162)	(.186)
Fraction of divorced women ever remarried	0.831	0.796	0.834	0.858	0.825
	(.375)	(.403)	(.372)	(.349)	(.380)

Note: Standard deviations are in parentheses.

Table 4: The Correlation Between The Province Types and Women's Marriage Outcomes: The Baseline Result from 2000 Census

Variables	(1) Women's First Marriage Age	(2) Age Gap at First Marriage	(3) Age at First Birth	(4) Divorce	(5) Remarry Conditional on Divorce	(6) Age Gap between Marriage and First Birth	(7) Number of Kids at Divorce
Province Type II	0.267***	-0.624***	-0.0277***	-0.00214***	0.0101***	-0.433***	-0.202***
	(0.0042)	(0.0049)	(0.0056)	(0.0003)	(0.0025)	(0.0053)	(0.0107)
Province Type III	-0.730***	0.168***	-0.463***	-0.00603***	0.0267***	0.0575***	0.0683*
	(0.0133)	(0.0154)	(0.0163)	(0.0008)	(0.0090)	(0.0159)	(0.0362)
Province Type IV	0.509***	-0.391***	0.558***	-0.00959***	0.0234***	-0.188***	0.122***
	(0.0048)	(0.0056)	(0.0063)	(0.0003)	(0.0032)	(0.0060)	(0.0133)
Han	0.233***	-0.238***	0.270***	-0.0241***	-0.00853**	-0.409***	-0.0624***
	(0.0068)	(0.0079)	(0.0087)	(0.0004)	(0.0035)	(0.0083)	(0.0146)
Urban Hukou	1.592***	0.355***	1.447***	0.0115***	-0.320***	-0.880***	-0.539***
	(0.0041)	(0.0048)	(0.0055)	(0.0003)	(0.0024)	(0.0052)	(0.0099)
Constant	17.16***	2.342	52.66***	0.144**	0.328	16.79***	0.156
	(1.0420)	(491.6000)	(1.0760)	(0.0657)	(0.3440)	(2.3170)	(0.1840)
Observations	2,781,047	2,632,758	1,263,544	2,781,088	100,087	2,168,664	52,420
R-squared	0.095	0.02	0.229	0.005	0.181	0.392	0.342

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Ten birth cohort dummies (defined by 5 year birth intervals, from 1920 to 1970) are included in all specifications.

Table 5: The Correlation Between The Province Types and Women's Marriage Outcomes, with Interactions Between Province Type and Han Ethnicity and Hukou Type,Result from 2000 Census

Variables	(1) Women's First Marriage Age	(2) Age Gap at First Marriage	(3) Age at First Birth	(4) Divorce	(5) Remarry Conditional on Divorce	(6) Age Gap between Marriage and First Birth	(7) Number of Kids at Divorce
Province Type II	0.420***	-0.544***	0.325***	-0.0142***	-0.00512	-0.842***	-0.383***
	(0.0167)	(0.0194)	(0.0216)	(0.0011)	(0.0086)	(0.0206)	(0.0369)
Province Type III	-1.269***	-0.0462	-0.883***	-0.00326	-0.00257	0.0928*	0.0385
	(0.0476)	(0.0553)	(0.0613)	(0.0030)	(0.0231)	(0.0560)	(0.0997)
Province Type IV	0.427***	-0.422***	0.564***	-0.0226***	0.0262*	-0.627***	0.212***
	(0.0241)	(0.0279)	(0.0292)	(0.0015)	(0.0145)	(0.0291)	(0.0601)
Han	0.217***	-0.241***	0.294***	-0.0287***	-0.0112***	-0.508***	-0.0685***
	(0.0082)	(0.0096)	(0.0104)	(0.0005)	(0.0041)	(0.0099)	(0.0171)
Province Type II X Han	-0.105***	-0.0534***	-0.264***	0.0142***	0.0137	0.397***	0.0978**
	(0.0171)	(0.0199)	(0.0222)	(0.0011)	(0.0089)	(0.0212)	(0.0380)
Province Type III X Han	0.423***	0.268***	0.265***	-0.00301	0.0392	-0.104*	0.111
	(0.0493)	(0.0573)	(0.0632)	(0.0031)	(0.0250)	(0.0581)	(0.1060)
Province Type IV X Han	0.212***	0.0600**	0.120***	0.0170***	-0.00512	0.370***	-0.102*
	(0.0244)	(0.0283)	(0.0297)	(0.0015)	(0.0147)	(0.0295)	(0.0609)
Urban Hukou	1.747***	0.417***	1.666***	0.0157***	-0.324***	-1.017***	-0.617***
	(0.0060)	(0.0071)	(0.0082)	(0.0004)	(0.0033)	(0.0078)	(0.0139)
Provice Type II X Urban Hukou	-0.209***	-0.108***	-0.395***	-0.00493***	0.00763	0.171***	0.232***
	(0.0092)	(0.0109)	(0.0125)	(0.0006)	(0.0053)	(0.0119)	(0.0221)
Provice Type III X Urban Hukou	0.670***	-0.159***	0.914***	0.000351	-0.0114	0.333***	-0.223***
	(0.0321)	(0.0377)	(0.0415)	(0.0020)	(0.0193)	(0.0409)	(0.0798)
Provice Type IV X Urban Hukou	-0.497***	-0.115***	-0.510***	-0.0127***	0.00886	0.384***	0.0343
	(0.0111)	(0.0130)	(0.0146)	(0.0007)	(0.0072)	(0.0141)	(0.0291)
Constant	17.08***	2.327	52.53***	0.146**	0.335	17.03***	0.162
	(1.0420)	(491.6000)	(1.0750)	(0.0657)	(0.3440)	(2.3160)	(0.1840)
Observations	2,781,047	2,632,758	1,263,544	2,781,088	100,087	2,168,664	52,420
R-squared	0.096	0.02	0.23	0.006	0.181	0.392	0.344

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Ten birth cohort dummies (defined by 5 year birth intervals, from 1920 to 1970) are included in all specifications.

Table 6: The Correlation Between The Province Types and Women's Marriage Outcomes: The Baseline Result from 2000 Census with Controls for the Cohort Born After 1940

Variables	(1) Women's First Marriage Age	(2) Age Gap at First Marriage	(3) Age at First Birth	(4) Divorce	(5) Remarry Conditional on Divorce	(6) Age Gap between Marriage and First Birth	(7) Number of Kids at Divorce
Province Type II	0.290***	-0.632***	0.0675***	-0.00146***	0.00938***	-0.388***	-0.206***
	(0.0043)	(0.0049)	(0.0061)	(0.0003)	(0.0025)	(0.0060)	(0.0123)
Province Type III	-0.734***	0.150***	-0.578***	-0.00728***	0.0225**	-0.0984***	0.0261
	(0.0135)	(0.0155)	(0.0178)	(0.0008)	(0.0090)	(0.0180)	(0.0415)
Province Type IV	0.526***	-0.404***	0.655***	-0.00943***	0.0230***	-0.169***	0.168***
	(0.0048)	(0.0056)	(0.0069)	(0.0003)	(0.0032)	(0.0068)	(0.0153)
Han	0.261***	-0.253***	0.375***	-0.0227***	-0.00481	-0.361***	0.0688***
	(0.0069)	(0.0080)	(0.0094)	(0.0004)	(0.0035)	(0.0093)	(0.0166)
Urban Hukou	1.591***	0.366***	1.783***	0.0118***	-0.324***	-0.741***	-0.528***
	(0.0041)	(0.0048)	(0.0059)	(0.0003)	(0.0024)	(0.0059)	(0.0113)
Cohort Born After 1940	1.334***	-0.0045	-15.22***	-0.0136***	-0.103***	-8.944***	1.099***
	(0.0056)	(0.0073)	(0.2030)	(0.0004)	(0.0030)	(0.0114)	(0.0158)
Constant	19.85***	2.517***	37.93***	0.0683***	1.015***	12.17***	0.164***
	(0.0084)	(0.0103)	(0.2030)	(0.0005)	(0.0042)	(0.0141)	(0.0215)
Observations	2,781,047	2,632,758	1,263,544	2,781,088	100,087	2,168,664	52,420
R-squared	0.076	0.009	0.083	0.003	0.173	0.226	0.135

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: The Correlation Between The Province Types and Women's Marriage Outcomes, with Interactions Between Province Type and Han Ethnicity, Hukou Type and Cohort After 1940, Result from 2000 Census

Variables	(1) Women's First Marriage Age	(2) Age Gap at First Marriage	(3) Age at First Birth	(4) Divorce	(5) Remarry Conditional on Divorce	(6) Age Gap between Marriage and First Birth	(7) Number of Kids at Divorce
Province Type II	-0.0306	-0.330***	-5.260***	-0.0183***	0.0263**	-2.391***	-0.0117
	(0.0207)	(0.0251)	(0.5060)	(0.0013)	(0.0106)	(0.0346)	(0.0530)
Province Type III	-1.460***	-0.0417	18.35***	-0.0130***	0.0216	0.284**	0.13
	(0.0713)	(0.0879)	(2.8810)	(0.0045)	(0.0379)	(0.1150)	(0.1970)
Province Type IV	0.153***	-0.238***	0.617	-0.0275***	-0.0076	-1.704***	0.161**
	(0.0279)	(0.0334)	(0.5460)	(0.0017)	(0.0165)	(0.0438)	(0.0806)
Han	0.251***	-0.264***	0.404***	-0.0273***	-0.00683*	-0.505***	0.101***
	(0.0083)	(0.0096)	(0.0113)	(0.0005)	(0.0041)	(0.0111)	(0.0194)
Province Type II X Han	-0.142***	-0.0213	-0.331***	0.0134***	0.0119	0.527***	-0.031
	(0.0173)	(0.0200)	(0.0241)	(0.0011)	(0.0090)	(0.0238)	(0.0435)
Province Type III X Han	0.444***	0.248***	0.233***	-0.00454	0.0291	-0.296***	0.0698
	(0.0499)	(0.0577)	(0.0689)	(0.0031)	(0.0251)	(0.0656)	(0.1220)
Province Type IV X Han	0.189***	0.0925***	0.163***	0.0180***	0.00136	0.643***	-0.233***
	(0.0246)	(0.0284)	(0.0323)	(0.0015)	(0.0148)	(0.0333)	(0.0698)
Urban Hukou	1.742***	0.428***	2.047***	0.0162***	-0.329***	-0.852***	-0.626***
	(0.0061)	(0.0071)	(0.0088)	(0.0004)	(0.0033)	(0.0088)	(0.0159)
Provice Type II X Urban Hukou	-0.193***	-0.110***	-0.413***	-0.00502***	0.0105**	0.188***	0.272***
	(0.0093)	(0.0109)	(0.0136)	(0.0006)	(0.0053)	(0.0134)	(0.0253)
Provice Type III X Urban Hukou	0.654***	-0.126***	0.894***	0.00194	-0.0037	0.366***	-0.207**
	(0.0327)	(0.0381)	(0.0453)	(0.0021)	(0.0194)	(0.0463)	(0.0919)
Provice Type IV X Urban Hukou	-0.506***	-0.113***	-0.708***	-0.0137***	0.00603	0.238***	0.0516
	(0.0112)	(0.0131)	(0.0159)	(0.0007)	(0.0072)	(0.0159)	(0.0333)
Cohort Born After 1940	1.103***	0.128***	-16.38***	-0.0163***	-0.0980***	-9.558***	1.159***
	(0.0079)	(0.0103)	(0.2620)	(0.0005)	(0.0041)	(0.0159)	(0.0220)
Provice Type II X Cohort After 1940	0.569***	-0.277***	5.744***	0.00628***	-0.0371***	1.546***	-0.316***
	(0.0131)	(0.0170)	(0.5060)	(0.0008)	(0.0070)	(0.0266)	(0.0356)
Provice Type III X Cohort After 1940	0.196***	-0.0169	-19.31***	0.0103***	-0.0248	-0.169*	-0.114
	(0.0564)	(0.0721)	(2.8800)	(0.0035)	(0.0327)	(0.1010)	(0.1680)
Provice Type IV X Cohort After 1940	0.356***	-0.251***	0.0525	0.00493***	0.0336***	0.919***	0.248***
	(0.0147)	(0.0192)	(0.5450)	(0.0009)	(0.0087)	(0.0301)	(0.0449)
Constant	20.03***	2.394***	39.01***	0.0739***	1.013***	12.90***	0.111***
	(0.0107)	(0.0133)	(0.2620)	(0.0007)	(0.0052)	(0.0185)	(0.0272)
Observations	2,781,047	2,632,758	1,263,544	2,781,088	100,087	2,168,664	52,420
R-squared	0.078	0.009	0.086	0.003	0.174	0.228	0.139

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

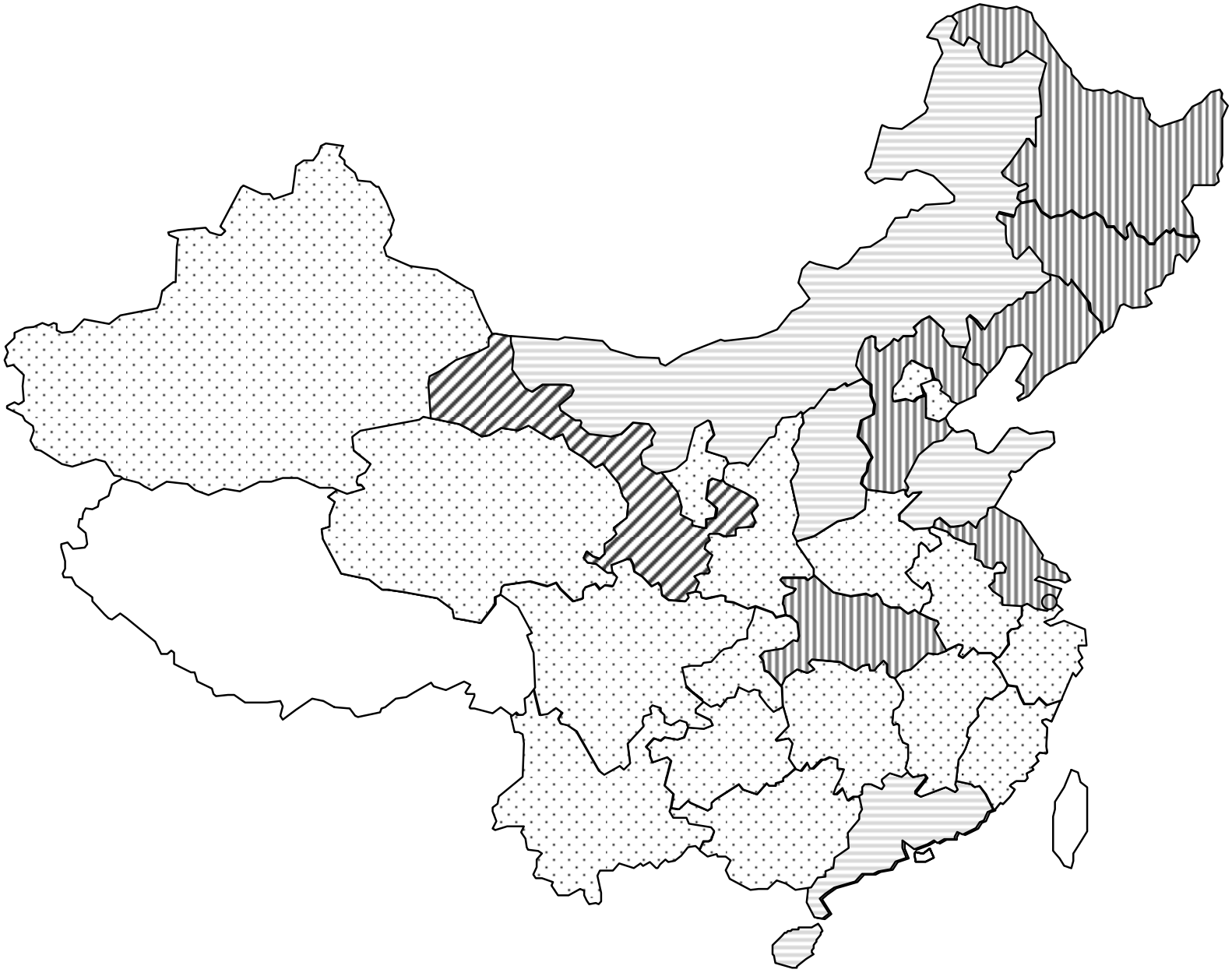


Figure 1: Maps of the Provinces by the Groupings of Fertility Policies in Remarriages.

Notes: (1). The provinces shaded by dots are in Group I, those shaded by vertical lines are in Group II; Group III province, Gansu, is shaded by slanted lines and Group IV provinces are shaded by horizontal lines. (2). Hong Kong, Macau and Taiwan are not shaded because there are no family planning policies; for Tibet, there is no clearly stated local regulations on the fertility restrictions.

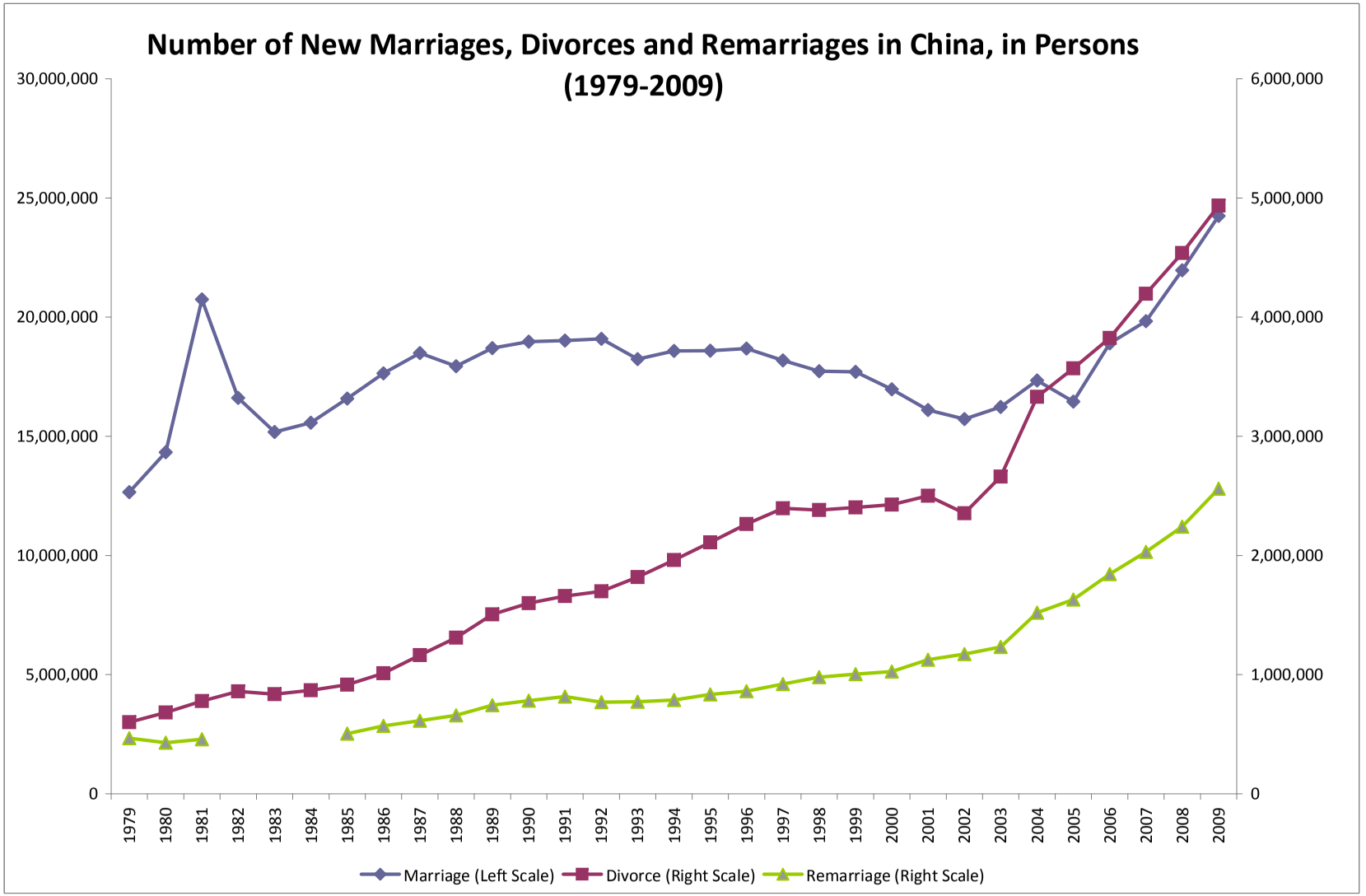


Figure 2: Number of Marriages, Divorces and Remarriages in China, in Persons, Aggregated over all Provinces (1979-2009).

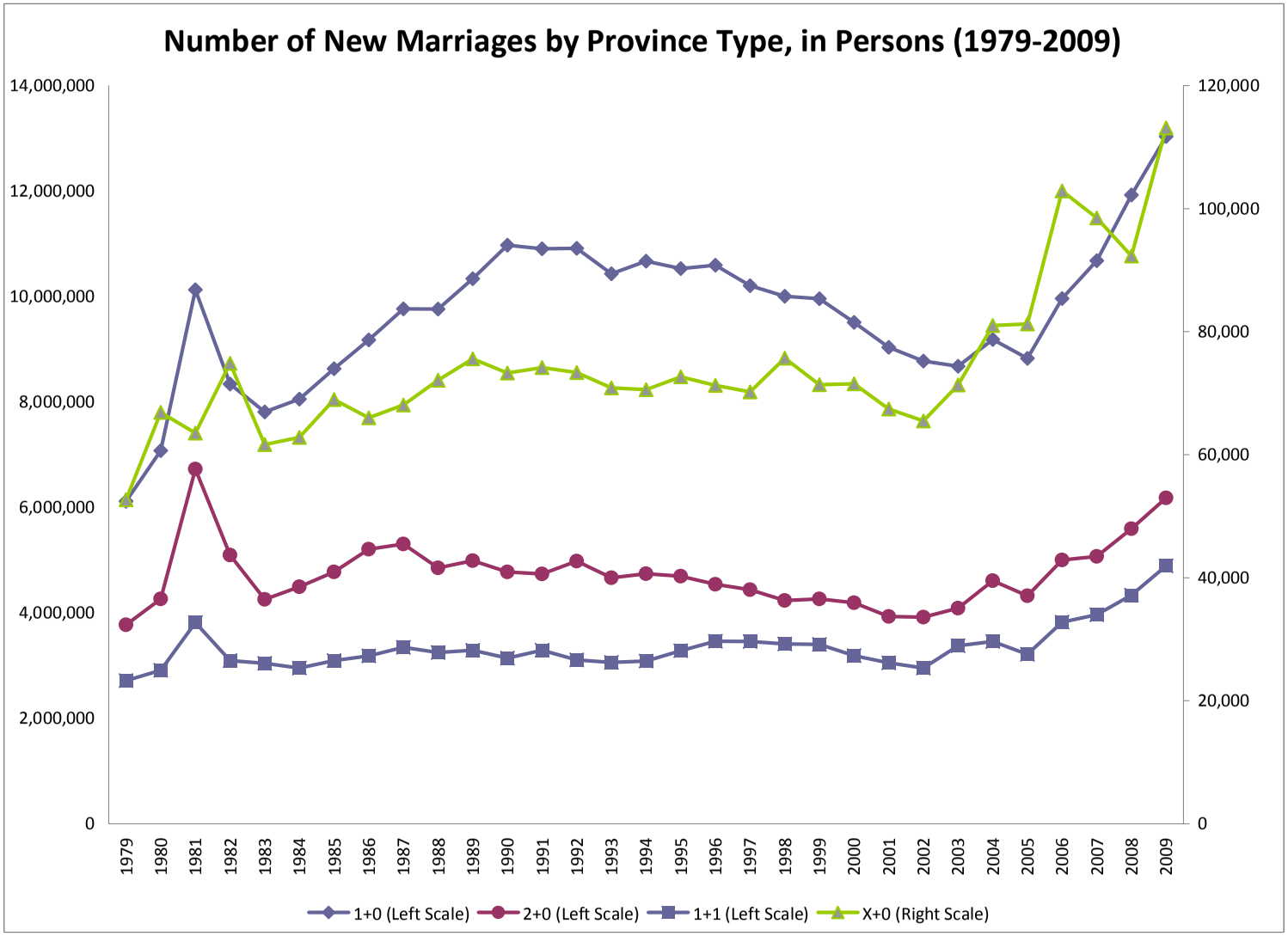


Figure 3: Number of Marriages in China, in Persons, by Types of Provinces (1979-2009).

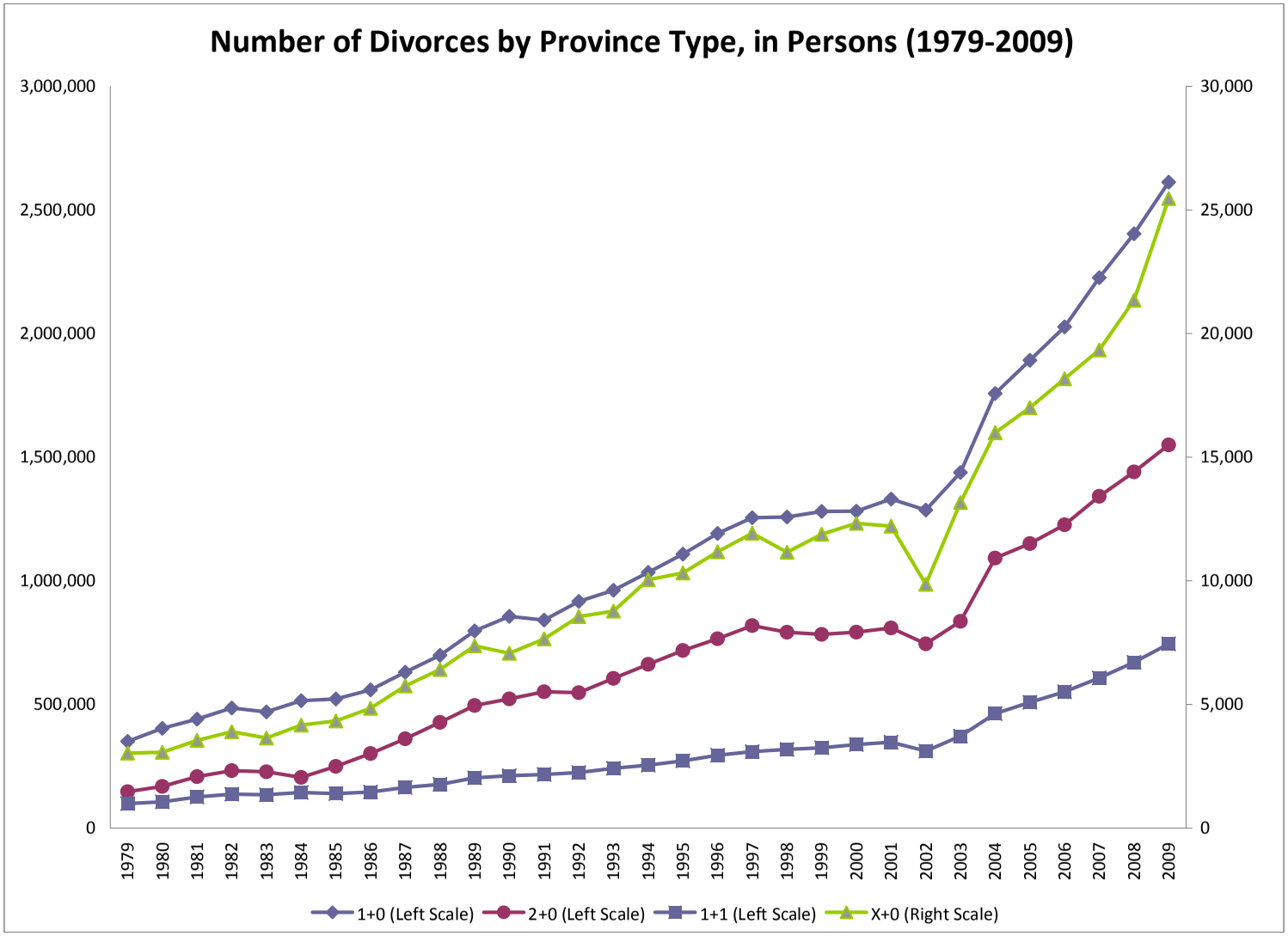


Figure 4: Number of Divorces in China, in Persons, by Types of Provinces (1979-2009).

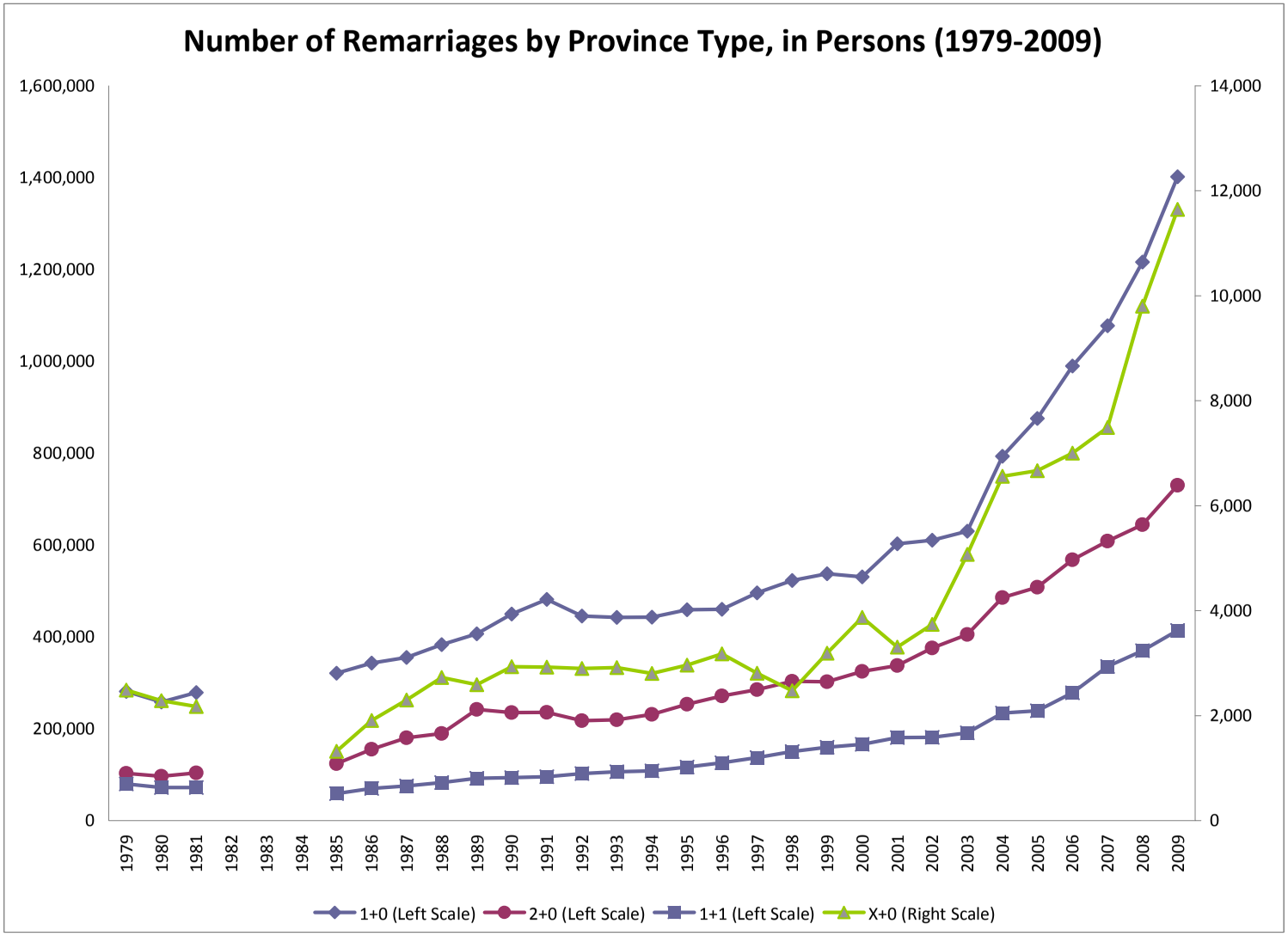


Figure 5: Number of Remarriages in China, in Persons, by Types of Provinces (1979-2009).

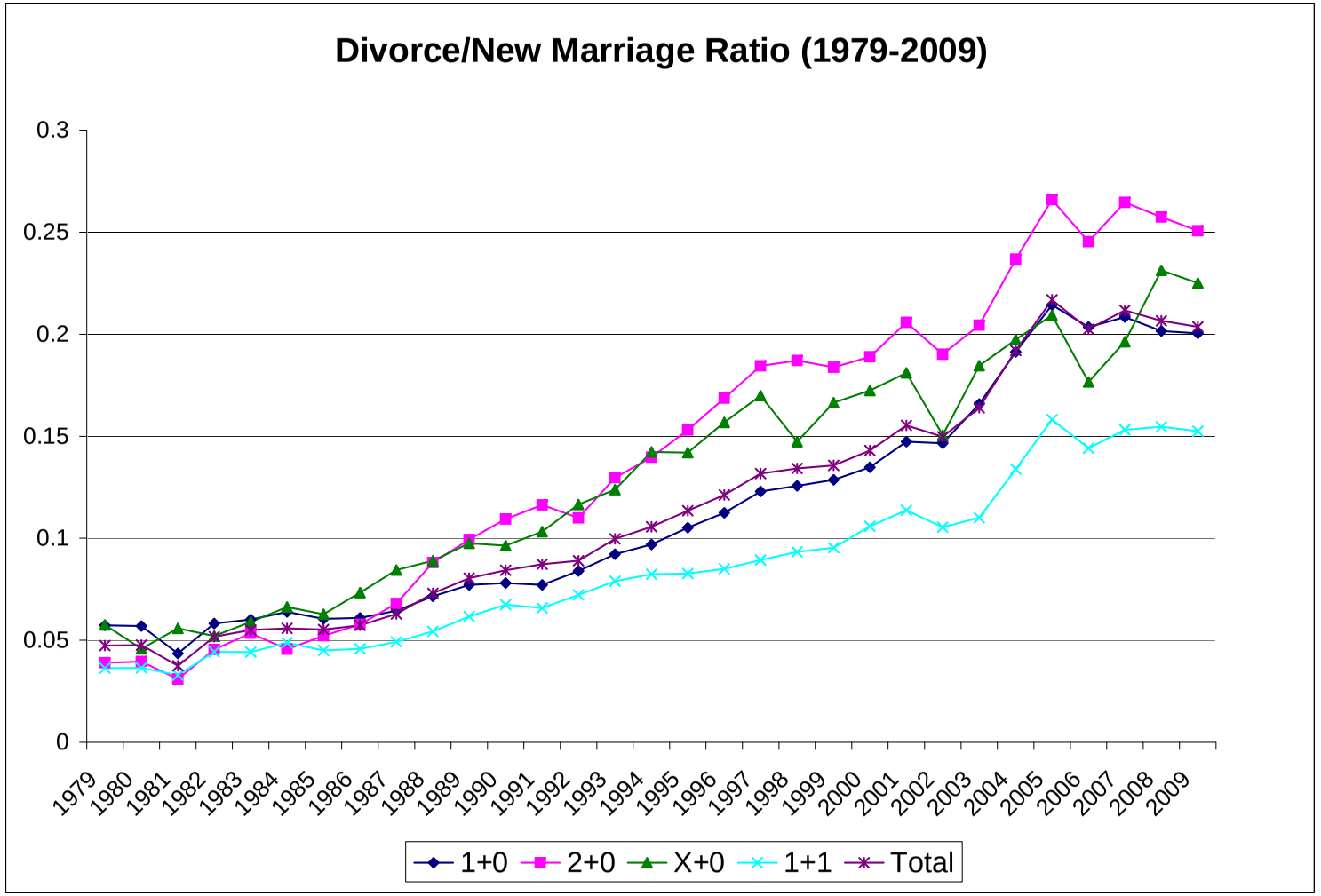


Figure 6: Divorce/New Marriage Ratios in China, in Total and by Types of Provinces (1979-2009).

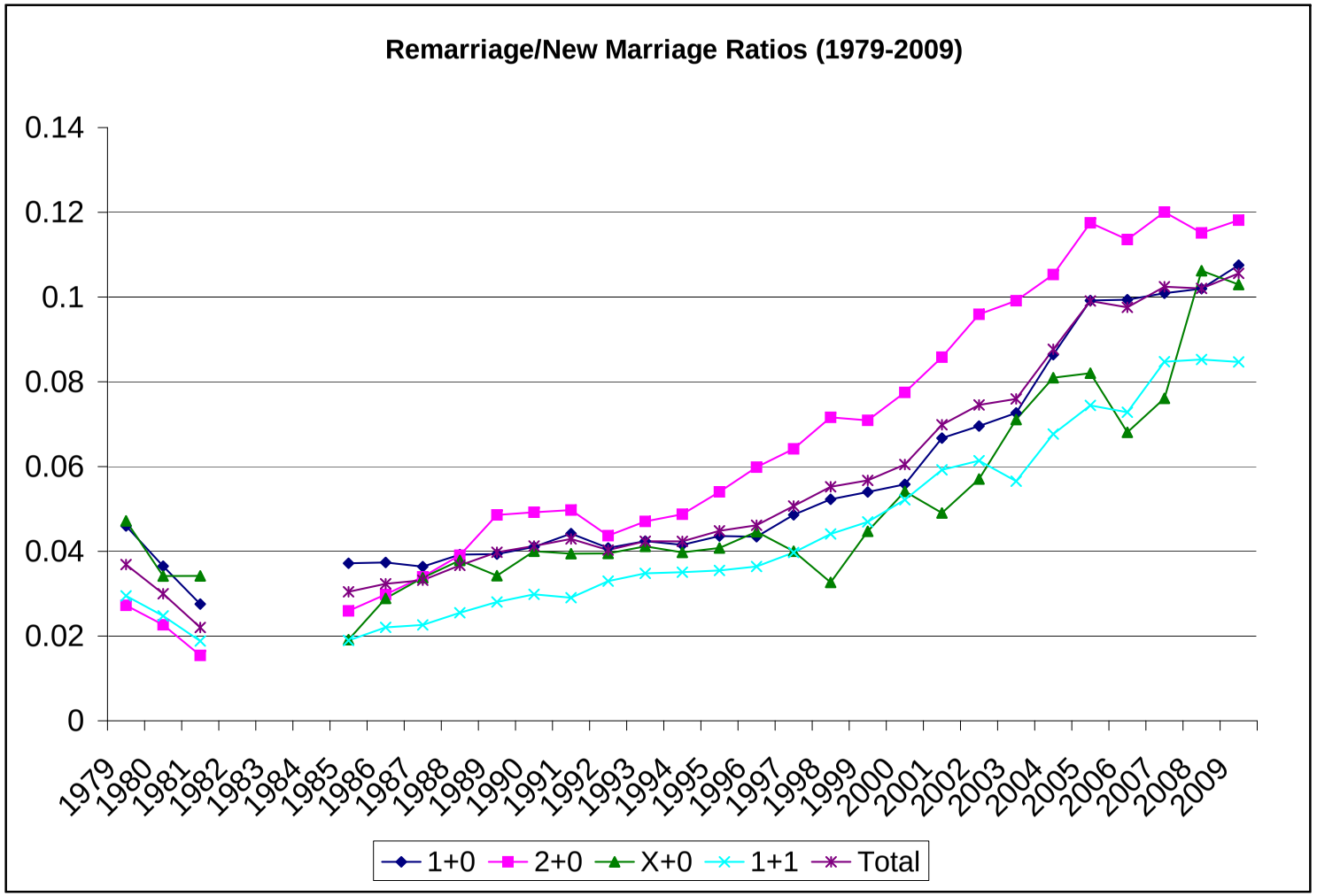


Figure 7: Remarriage/New Marriage Ratios in China, in Total and by Types of Provinces (1979-2009).

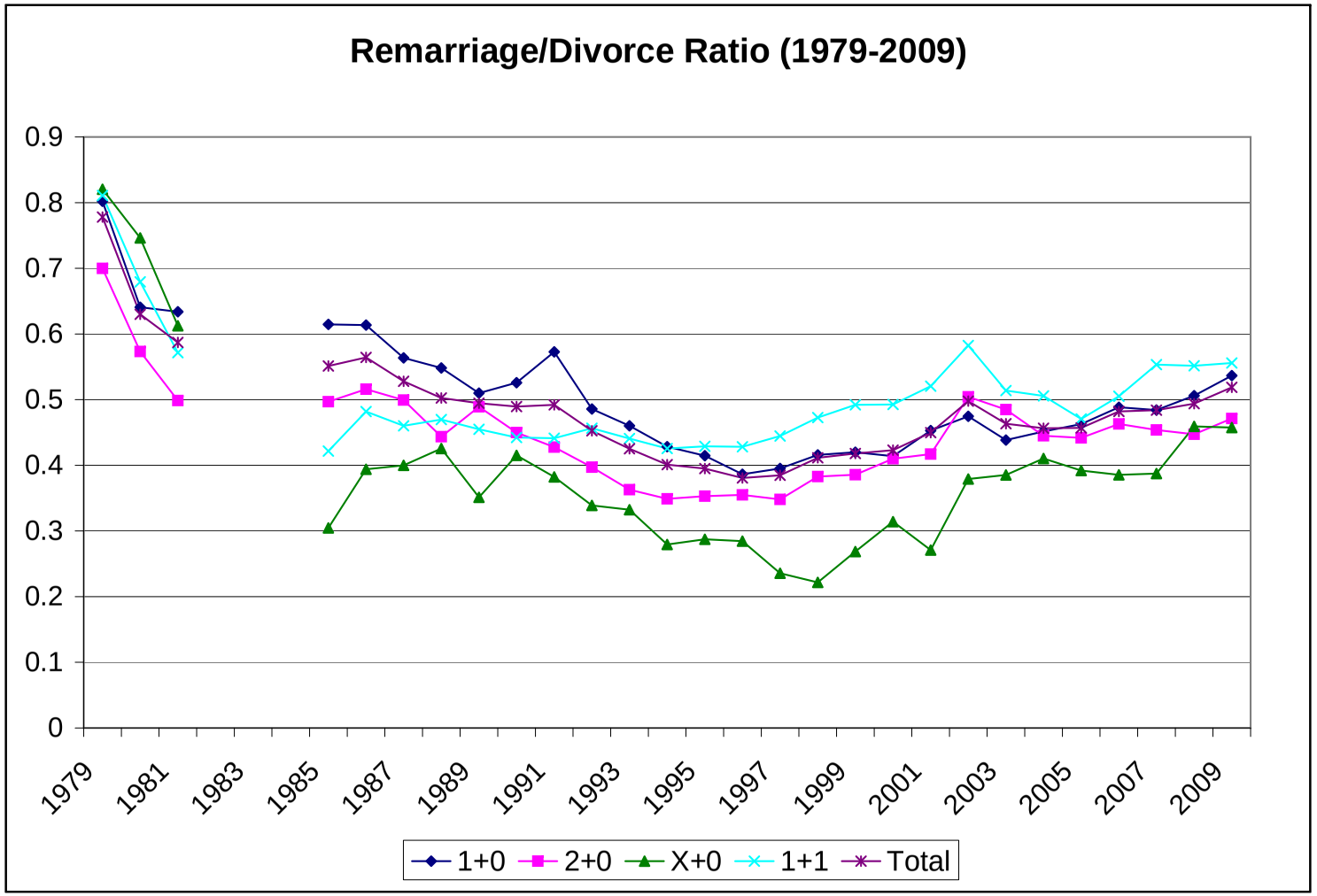


Figure 8: Remarriage/Divorce Ratios in China, in Total and by Types of Provinces (1979-2009).

Figure 9: Age at First Marriages for Women, by Province Type, by Women's Birth Cohort

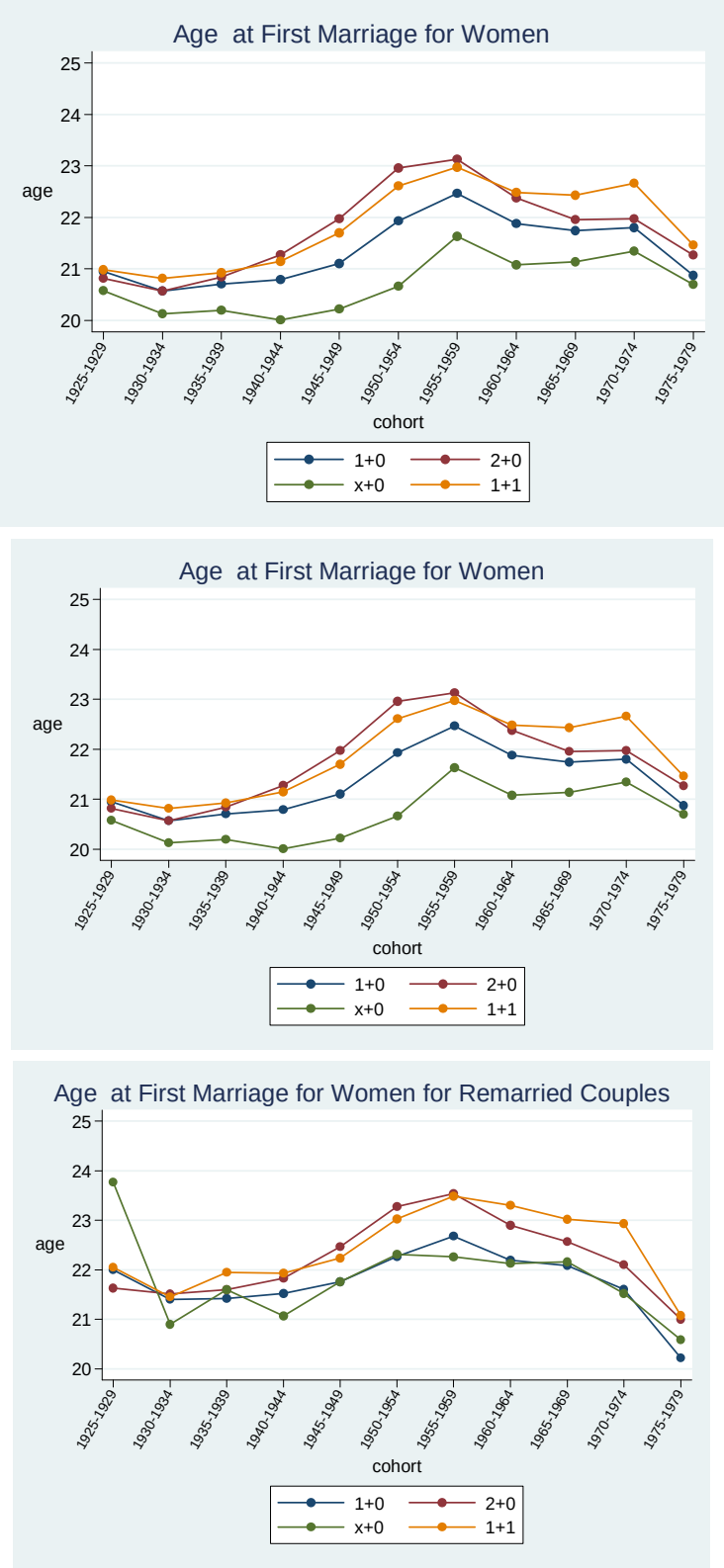
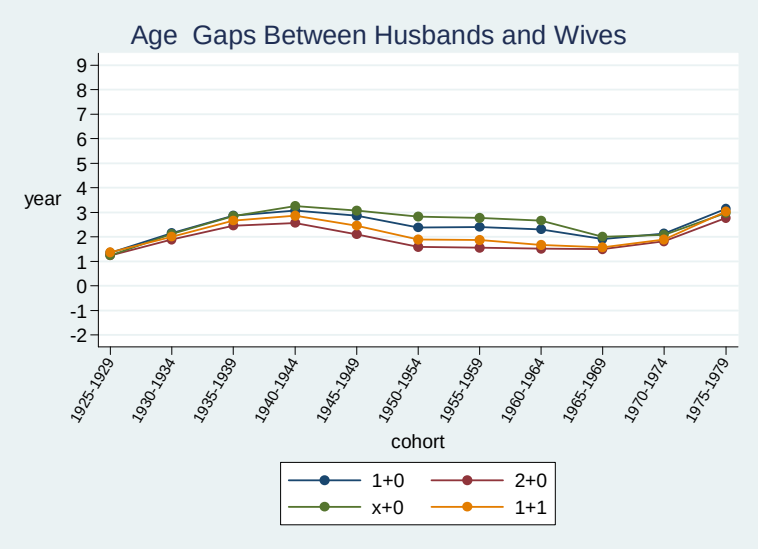
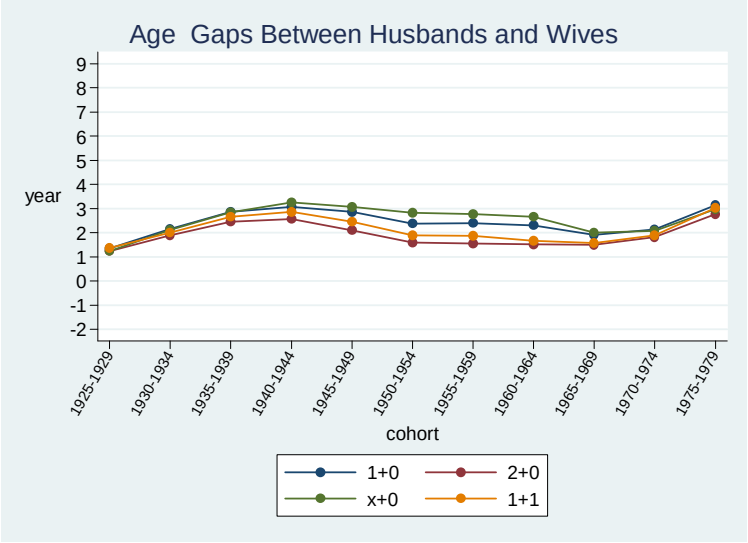


Figure 10: Average Age Gaps, by Province Type, by Women's Birth Cohort





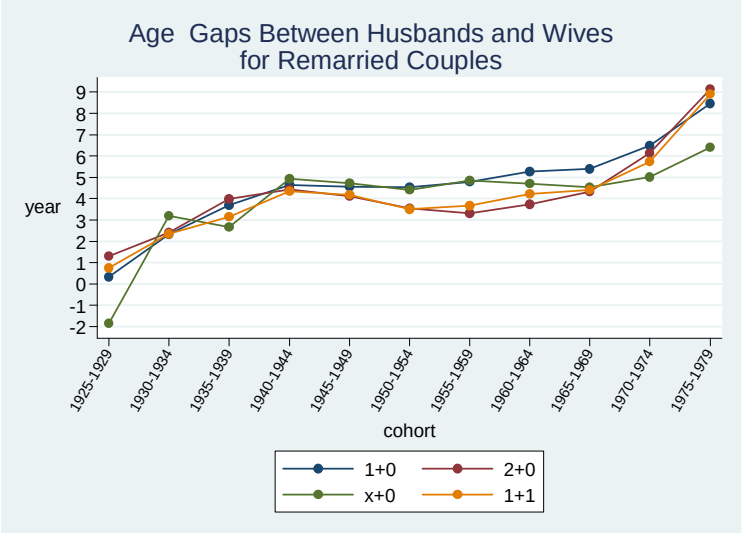
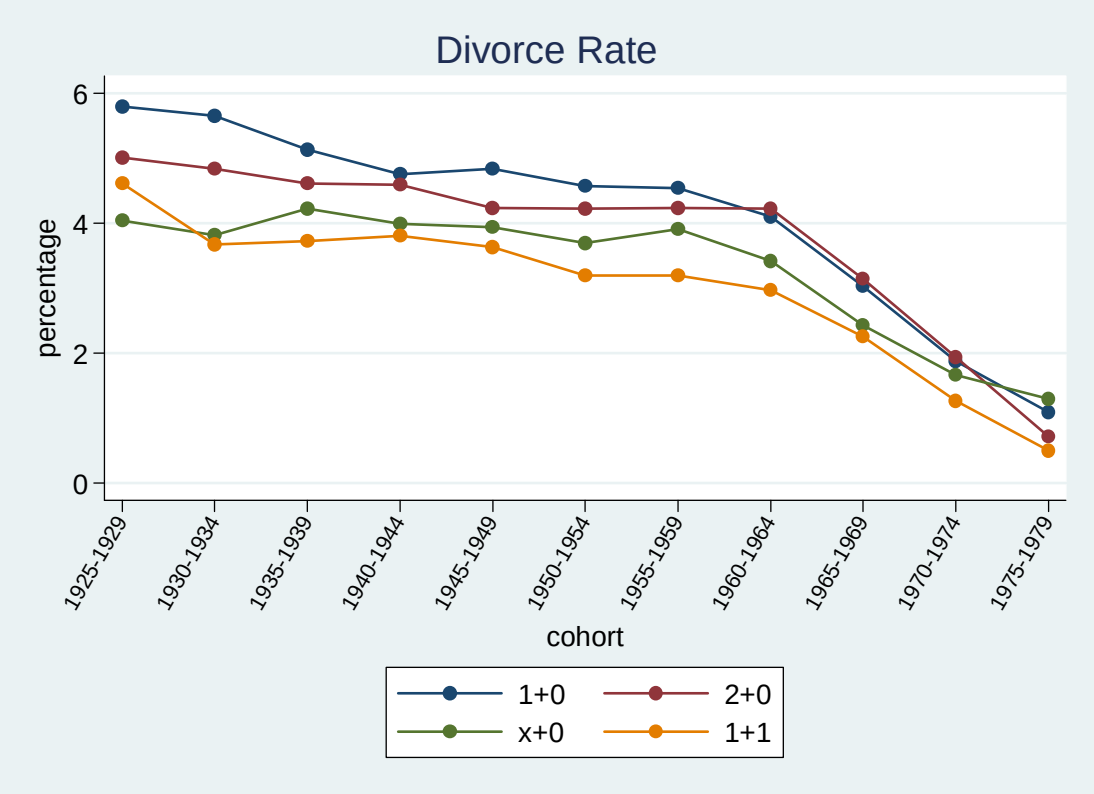
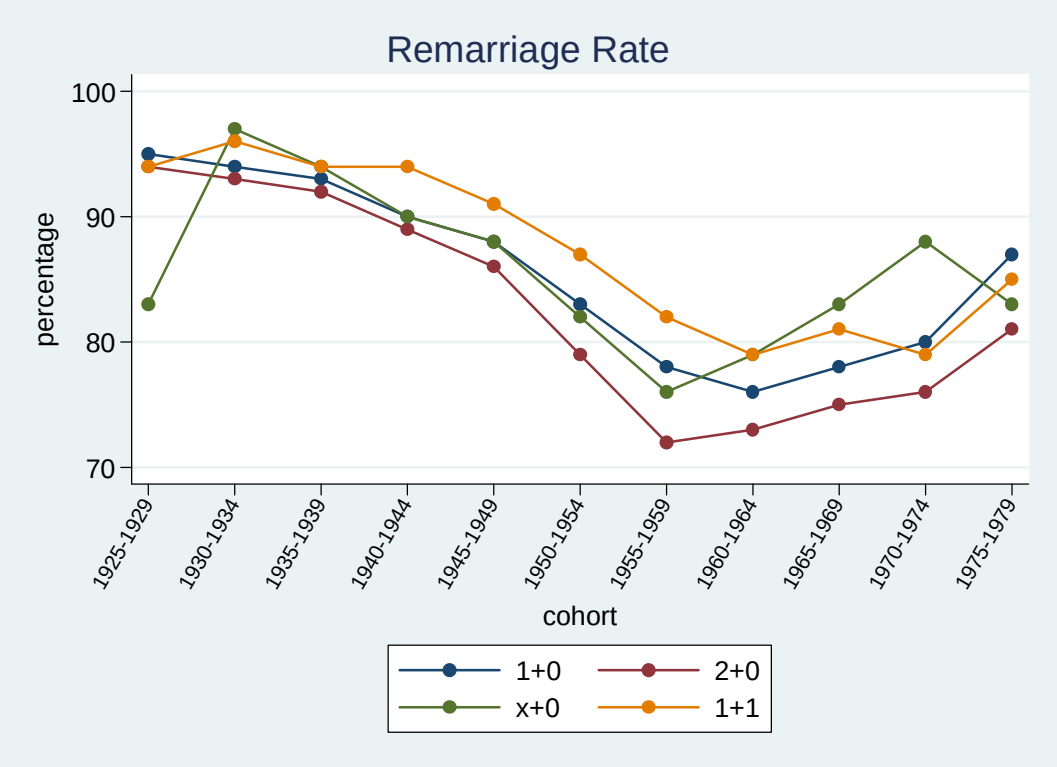


Figure 11: Refined Divorce Rate, by Province Type, by Women's Birth Cohort



	province type				
cohort	1+0	2+0	x+0	1+1	Total
1925-1929	5.80%	5.01%	4.04%	4.61%	5.30%
1930-1934	5.65%	4.84%	3.82%	3.67%	5.00%
1935-1939	5.13%	4.61%	4.22%	3.72%	4.69%
1940-1944	4.76%	4.59%	3.99%	3.81%	4.53%
1945-1949	4.84%	4.24%	3.94%	3.63%	4.43%
1950-1954	4.57%	4.22%	3.69%	3.19%	4.20%
1955-1959	4.54%	4.23%	3.91%	3.19%	4.17%
1960-1964	4.10%	4.22%	3.42%	2.97%	3.90%
1965-1969	3.03%	3.14%	2.43%	2.26%	2.90%
1970-1974	1.88%	1.94%	1.66%	1.27%	1.77%
1975-1979	1.09%	0.71%	1.30%	0.50%	0.91%
Total	3.85%	3.76%	3.01%	2.82%	3.61%

Figure 12: Remarriage Rate by Province Type, by Women's Birth Cohort



	province type				
cohort	1+0	2+0	x+0	1+1	Total
1925-1929	95%	94%	83%	94%	94%
1930-1934	94%	93%	97%	96%	94%
1935-1939	93%	92%	94%	94%	93%
1940-1944	90%	89%	90%	94%	91%
1945-1949	88%	86%	88%	91%	88%
1950-1954	83%	79%	82%	87%	82%
1955-1959	78%	72%	76%	82%	77%
1960-1964	76%	73%	79%	79%	75%
1965-1969	78%	75%	83%	81%	78%
1970-1974	80%	76%	88%	79%	79%
1975-1979	87%	81%	83%	85%	85%
Total	83%	80%	83%	86%	82%

Figure 13: Characteristics of Remarriages, by Province Type, by Birth Cohorts