The Economics of Marriage and Divorce in Iran

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ABSTRACT

This dissertation consists of four chapters on the economics of marriage and divorce in Iran. The first chapter outlines major forces driving the recent transitions in Iran’s marriage market. Age structure of the population, the rise of women’s education, marriage and divorce laws, and fertility decline are the four main forces influencing marriage transitions, that is, the age of marriage, couple’s age and education gaps, quality of marriage (stability, education status of children), and women’s power within marriage.

Chapter two looks at the change in age structure that influences the sex ratio. I consider the influence of the sex ratio on couples’ age and education gaps using data from multiple national surveys from 1984-2007. The findings of this chapter show that a lower sex ratio, i.e. a greater supply of marriage-age women, increases the bargaining power of men at the time of marriage and thereby increases their ability to marry younger and more educated women.

In chapter three, I evaluate the effects of demographic change, the sex ratio, and policy change, particularly the provision of family planning programs through health clinics on delayed marriage in rural Iran. I use data from Iran’s 2000 Demographic and Health Survey to estimate a hazard model of timing of marriage. The results show that a lower sex ratio decreases the chances of a woman finding a man five years older, and easier access to family planning decreases her probability of marriage.

In chapter four, I provide a legal history of Iran’s marriage and divorce laws and then discuss how changes in the legal structure of marriage and divorce alter the terms of marital bargaining and force women to circumvent inequitable Iranian laws to improve their position. Then, I present a model of how Mahrieh could improve a woman’s position within the household in light of the unequal divorce rights favoring men. As women cannot exit their marriage, they request a conditional and legally enforceable bond known as Mahrieh from their husbands to secure themselves against the risks of divorce or maltreatment within marriage.
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Chapter 1

Introduction: Iran’s Marriage Market in Transition

1.1 Introduction

The marriage market in Iran has been transformed by the interplay of three significant forces: (1) age structure of the population; (2) rising education, especially of women; and (3) laws of marriage and divorce.

The age structure of the population has gone through drastic changes over the last decade resulting in an increase in the number of women of marriage age relative to men. Traditionally Iranian women marry men who are on average 5 years older. As a consequence of a baby boom occurring in the early years of the 1979 revolution women born in the early 1980s reached marriage age several years earlier than the corresponding cohorts of men. Over the last decade, Iranian women of marriage age have outnumbered men at the rate of 5 to 4. The consequence is an unfavorable marriage market for young women. Some of these young women will never marry, while others will have to accept marriages with age gaps outside accepted social norms. On average the age gap of newly formed marriages are lower than in the past.

Second, education of both men and women has been rising. Traditional Iranian husbands were more educated than their wives by more than 2 years for those born in the early 1960s. Changes over the last decade in women’s education have had a substantial impact on the average education gap of married couples. The average years of education for women born in 1960 was less than 4 years and it has increased to 10 years for cohorts born 15 years later. Consequently the gender education gap has declined steadily, down
to less than a year for the cohorts born in the late 1970s. Together with the falling age gap of married couples, this has created families that are more balanced in terms of bargaining power of men and women. Economists believe that more balanced families invest more in their children’s education and health (Lundberg, 2005; Beck and González-Sancho, 2009; Polachek et al., 2010).

Third, the legal structure within which marriages are being formed has been changing: Starting with the Marriage Act of 1931, followed by the Family Protection Law of 1967, Iran’s family laws were moving toward women’s equal rights. However, after the Revolution of 1979 the revolutionary government struck down the Family Protection Law of 1967, and declared the Sharia as the legal basis for marriage and divorce. Even though, citing the Marriage Act of 1931 as precedent, the government reinstated parts of the Family Protection Law, after the revolution women have been subjected to unequal legal standing with respect to marriage and divorce. Mahrieh\(^1\), which is recognized as women’s rational response for protection against these unequal divorce rights, has become more popular. There have been attempt to limit the size of Mahrieh because high levels are considered as a barrier to marriage.

In addition to the above forces, the structure of the family has undergone significant changes, the most important of which is the sharp decrease in the fertility rate. Thirty years ago, there were on average 6-7 children born to the average woman; since the late 1990s, this has decreased to the replacement level of 2 children per woman. Women’s desire to have fewer children makes it possible for them to marry later and possibly continue their education. Besides, bearing fewer children guarantees better education and healthcare for them.

Iran’s marriage market is in transition if not in turmoil. This transition is characterized by increase in the age of first marriage, higher divorce rate, women’s empowerment, more balanced marriages in terms of couple’s age and education, and greater investment in children. In this dissertation, I analyze the interplay of these

\(^1\) Mahrieh is sum of money or any other valuables determined in a prenuptial agreement that the husband gives or undertakes to give to his wife upon divorce.
changes and in particular the role of social forces, such as demographic factors and changes in the legal institutions.

The most obvious part of this transition is delayed marriage, which is often viewed as an indicator of women’s social progress but it can be due to failure of the marriage market to work properly. Women’s voluntary decisions to delay marriage—such as continuing their education or as it is expressed in a desire to have fewer children—shows positive progression toward a more developed, less patriarchic society. Of course, the caveat here is that women’s choices are too often dictated by social forces beyond their control. Age imbalances in Iran’s marriage market and changes in marriage and divorce laws over the last decades have no doubt conditioned women’s behavior outside and within marriage. Delayed marriage, women’s power within family, couple’s age and education gaps as well as the social forces determining them are central influences on economic development because of the centrality of human capital in economic growth and the crucial role of the family in its accumulation (Becker, 1992; Lucas, 2002).

In this dissertation, I explain the influence of market forces (in particular, of age structure and legal structure) on marriage transitions—in age of marriage, gaps in couple’s age and education, and women’s power within the family—from an economic point of view. In chapter 2, I first look at the origins of the change in age structure that, in turn, influences the sex ratio. Then, I look at the influence of this demographic change, sex ratio, on couples’ age and education differences. Continuing the sex ratio discussion in chapter 3, I evaluate the effects of the family planning program, and in particular health clinics, on delayed marriage in rural Iran. In the last chapter, chapter 4, I first provide the legal history of Family Law regarding marriage and divorce in Iran before discussing how changes in the legal structure of marriage and divorce alter the terms of the marital bargaining and force women to circumvent inequitable Iranian laws to improve their position. Then, I present a model of how Mahrieh could improve women’s position within the household in light of the unequal divorce rights that favor men. As women cannot easily opt out of marriage, they obtain a conditional and legally enforceable bond known as Mahrieh from their husbands to protect themselves against the risks of divorce and maltreatment.
In the section to come, I briefly review the main transitions that have transformed the Iranian family in the past decades in Iran.

1.2 Age structure effects

There has been a drastic change in the age structure of the population in Iran in the last decades. Rapid population growth in the late 1970s and early 1980s resulted in an overall younger population. Since traditionally women in Iran marry men who are on average 5 years older, there are more women of marriage age than men creating what is called “marriage squeeze”. Table 1 shows the changes in a simple measure of the age imbalance in Iran’s marriage market, the ratio of men 25-29 to women 20-24 years old. The earliest national census in 1956 revealed a sex ratio of 0.92, falling sharply to 0.70 in 1976, before rising again to 0.89 in 1996. The ratio fell to 0.81 again in 2006 as a result of the 1979-1985 baby boom whose births had reached marriage age by 2006. As mentioned earlier, fertility increased from an already high level, in part because of the lower cost of childbearing during the early years of the revolution (Salehi-Isfahani and Tandon, 2002; Abbasi-Shavazi et al., 2009), while since mid 1980s fertility has been on rapid decline, which will force a reversal of the sex ratio in coming years when the smaller cohorts of women reach marriage age (Figure 1).

![Figure 1: Sex Ratio.](image)
Table 1: Sex ratios in Iran 1956-2006

<table>
<thead>
<tr>
<th>Year</th>
<th>Women 20-24</th>
<th>Men 25-29</th>
<th>Sex ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956</td>
<td>797,809</td>
<td>737,411</td>
<td>0.92</td>
</tr>
<tr>
<td>1966</td>
<td>889,265</td>
<td>801,665</td>
<td>0.90</td>
</tr>
<tr>
<td>1976</td>
<td>1,451,357</td>
<td>1,010,195</td>
<td>0.70</td>
</tr>
<tr>
<td>1986</td>
<td>2,081,741</td>
<td>1,833,079</td>
<td>0.88</td>
</tr>
<tr>
<td>1996</td>
<td>2,645,751</td>
<td>2,358,982</td>
<td>0.89</td>
</tr>
<tr>
<td>2006</td>
<td>4,499,571</td>
<td>3,660,167</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Notes: Sex ratio is the ratio of men 25-29 to women 20-24 years old
Source: Statistical Center of Iran, National Census of Population, various years

The age difference between husbands and wives equilibrates over time partly as a response to the sex ratio imbalances in the marriage market (Bergstrom and Lam, 1989). Figure 2 shows the trend in age difference. Two interesting observations emerge from this graph. First, age differences are smaller, by about a year, in the more traditional rural areas. This is a surprising finding in view of two other differences between rural and urban areas: rural women are less educated (see Figure 3), and the sex ratio is more balanced in rural areas. So, clearly other factors, such as income may affect the marriage market outcomes. Second, in both rural and urban areas there is a clear downward trend in marriage age differences. Age differences decline from about 5-6 years for cohorts of men born in the 1940s (reaching marriage age in the 1960s) to less than 4 for those born in 1970s (reaching marriage age in the 1990s). There seems to be acceleration in the rate of decline for urban cohorts who married in the 1990s when fertility had begun its precipitous decline (see Figure 5). The age difference was fairly constant for the 1960's cohorts.
Several theoretical and empirical models explain the impact of the demographic changes, sex ratios, on marriage market outcomes, such as couple’s age and education differences (Bergstrom and Lam, 1989) and marriage timing decisions of young men and women (Becker, 1981; Grossbard-Shechtman, 1984) that have been introduced in chapters 2 and 3, respectively. These chapters present empirical studies to investigate these effects in the context of Iran’s marriage market.

### 1.3 Rising education

Education level of both men and women has been rising over the last decades. Traditionally Iranian husbands have more education than their wives by more than 2 years for those born in the early 1960s. Recent educational attainments of women have narrowed the education gap between husbands and wives. Figure 3 shows the impressive gains in education of men and women, and the relative gain of women. The average years of education for women born in 1960 was less than 4 years while it has increased to 10 years for cohorts born 15 years later. The most noticeable gain is for rural women who have closed their education gap both with rural men and with other groups. Women's education, which is the key indicator of women's social and economic status, influences the outcomes in the marriage market (Behrman et al., 2006; Lefgren and McIntyre, 2006)
Figure 3: Education by birth year.
Source: (Abbasi-Shavazi et al., 2009).

Education data in Figure 4 illustrate a clear trend of a decreasing education gap for recent cohorts. Figure 4 reveals large differences between rural and urban areas. For urban couples we observe a fairly constant difference of about 1.5 years for cohorts of men born in the 1940s up until mid 1960s, after which a sharp decline sets in. These are unions that were most likely formed in the late 1980s and later when fertility had started its decline and women's education was increasing (see Figure 3). The education gap of rural couples increased from 0.5 years for cohorts of men born in the 1940 to more than 2 years for those born in the early 1960s. Subsequent rural cohorts have experienced a steady decline in the education gap, down to less than a year for the 1977 cohort.

The evidence presented in this section indicates that the Iranian marriage market has been relatively flexible in terms of age and education differences of married couples. On both accounts of age and education Iranian families have become more balanced, which bodes well for the future of the family as a unit which is more responsive to women's needs and aspirations. The education of girls depends more strongly on mother's education; these changes imply increased opportunity for girls to benefit from family resources (Thomas, 1994; Duflo, 2000a, 2000b; Qian, 2008).
1.4 Laws of marriage and divorce

Marriage is an institution where the laws governing its formation and termination directly influence the behavior of its parties. Making laws more favorable for one spouse affects decisions toward pre-marital investments, timing of marriage, and resource allocation within marriage. Consequently, they alter the terms of the marital bargain and alter the balance of each of the parties’ net gain from marriage (Manser and Brown, 1980; McElroy and Horney, 1981; Lundberg and Pollak, 1993).

The legal structure within which marriages form has changed over the past decades in Iran. Despite the subjection of marriage and divorce to Sharia or Islamic law, there have been subtle efforts to modify the laws. Starting with the Marriage Act of 1931, followed by the Family Protection Law of 1967 (amended in 1975), Iran’s family laws in subjects related to marriage and divorce was shifting toward women’s equal rights until after the Revolution of 1979 when the revolutionary government declared the Family Protection Law of 1967 to be non-Islamic. Then some years later in 1986, citing the Marriage Act of 1931 as precedent, the Post-Revolutionary Family Protection Law was reinstated. Once again, women were subject to unequal conditions with respect to divorce. Mahrieh has...
been widely recognized as a rational response of women against these unequal divorce rights.

1.5 Fertility decline

The structure of the traditional Iranian family has undergone significant change. The most important influence has been the sharp decrease in the fertility rate. The average number of births per woman dropped from more than 6 in 1970's to the replacement level of 2 births per woman in recent years (Figure 5). There was an even steeper rate of decline in rural areas where the total fertility declined from about 8 children per woman in 1980s to the replacement level in 2000. Differences in fertility disappeared by 2000 (Abbasi-Shavazi et al., 2009).

To clarify, there are two sides to the relation between fertility and the timing of marriage. Women who choose to have fewer children can benefit from delaying marriage and are therefore more likely to stay in school longer. But also bearing fewer children can mean more available resources for the children’s education and healthcare and so delaying marriage can benefit them too. The inverse is correct also: Continuing education and marrying “late” can complicate fertility insofar as it limits, physiologically speaking, the fertility window of opportunity.

Figure 5: Total Fertility Rates, 1972-2006.
Source: (Abbasi-Shavazi et al., 2009).
1.6 Family planning program

Young unmarried women’s access to family planning programs influences their marriage decisions. The role of these programs is obviously different in western countries than in Iran, where premarital sex is taboo. The effect of family planning programs on the timing of marriage are not clear cut: Goldin and Katz (2002) argue that availability of contraceptive pills to unmarried women reduces the cost of postponing marriage and the threat of unwanted pregnancy. Unmarried women therefore become more likely to postpone marriage, while Edlund and Machado (2009) believe where the social acceptance of premarital sex is relatively low, access to the pill makes early marriage more attractive since women do not have to worry about unwanted pregnancy. In chapter 3, I will discuss in greater detail the theoretical and empirical studies on this issue, where I investigate the link between the availability of family planning program and marriage decisions of young Iranian rural women using an empirical model.

The government started providing the family planning program through health clinics after 1988. Construction in rural areas of Iran started in the early 1970s. After the revolution, the geographic coverage of these clinics expanded gradually until 1985, when the ministry of health under legislative authority began a campaign to improve rural health services. Construction of clinics reached its peak in 1989. Figure 6 indicates the pace of health clinics construction in rural Iran\(^2\).

\(^2\) For more detailed information on Iran's family planning program see (Roudi-Fahimi, 2002) and (Salehi-Isfahani et al., 2010)
1.7 Rising age at marriage

Young Iranian women are waiting to get married longer than ever before. Nearly one in four women between the ages of 25 and 29 was unmarried in 2006, compared to one in ten in 1986. Figure 6 compares the percentage of married women in five different birth cohorts. Beginning with the first cohort in 1960 and then in five-year intervals thereafter the figure illustrates the percentage of married women in each cohort as a function of age. The graph shows three important trends. First, there is greater frequency in delayed marriages from each successive cohort after 1960: the percentage of women married by age 20 more than doubled in the cohorts born between 1965 and 1980. Similarly, during the same period for the same cohorts the percentage of those married in urban areas decreased by 33 percentage points. The second observable trend shows that the decline in the percentage of married women is not only related to urban areas, but also extends to younger cohorts of women in rural areas. This is an impressive change of sentiment for rural families that have always been known for having more traditional and conservative attitudes toward early marriage (Aghajanian, 1998; Tremayne, 2006). Twenty years ago, the percentage of unmarried women in urban areas was higher than the percentage of

Figure 6: Timing of health clinic establishment.
Source: (Salehi-Isfahani et al., 2010).
unmarried women (aged 25-29) in rural areas by roughly 3 percentage points. These figures have now reversed. For the same age group, the percentage of unmarried women in urban areas hangs at 21 percent, whereas the percentage of unmarried women in rural areas is 24 percent. The third trend shown in Figure 7 is that the rate of decline of the share of married women in rural areas has been faster than in urban areas. That is, the percentage of married women for recent cohorts in rural areas compared to their urban counterparts is in decline. The percentage of women married by age 20 in rural areas decreased nearly 36 percentage points for the cohorts between 1965 and 1980. Similarly, during the same period for the same cohorts the percentage of those married by age 20 in urban areas decreased by 28 percentage points. At the time of their first marriage, women’s mean age as reported in Table 2 verify that the age of marriage in both urban and rural areas is also on the rise. Over two decades, there was a sharp increase in this mean age—from 19.6 years in 1986 to 23.4 years in 2006—in rural areas. There is a diminishing gap in age at first marriage between rural and urban areas in recent years.

Figure 7: Delayed marriage (women).
Source: Author's calculations based on HEIS (1984-2009).

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3 Author's calculations based on Census 1986 and 2006.
<table>
<thead>
<tr>
<th>Year</th>
<th>All-country</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>18.4</td>
<td>19</td>
<td>17.9</td>
</tr>
<tr>
<td>1976</td>
<td>19.7</td>
<td>20.2</td>
<td>19.1</td>
</tr>
<tr>
<td>1986</td>
<td>19.8</td>
<td>20</td>
<td>19.6</td>
</tr>
<tr>
<td>1991</td>
<td>20.9</td>
<td>21</td>
<td>20.8</td>
</tr>
<tr>
<td>1996</td>
<td>22.4</td>
<td>22.5</td>
<td>22.3</td>
</tr>
<tr>
<td>2001</td>
<td>23.7</td>
<td>23.8</td>
<td>23.7</td>
</tr>
<tr>
<td>2006</td>
<td>23.2</td>
<td>23.3</td>
<td>23.4</td>
</tr>
</tbody>
</table>

Source: Statistical Center of Iran, National Census of Population

Note: Mean age at first marriage has been calculated based on Hajnal (1953) method (also known as singulate mean age at first marriage (SMAM))
Chapter 2

The Impact of Demographic Change on Marriage in Iran

2.1 Introduction

Iranian families have gone through fundamental changes in the last two decades. Men and women are more educated, marry later, have fewer children, and form more balanced families in terms of the age difference between husbands and wives. These changes are widely known as part and parcel of social and economic progress, and for development economists they are signs that Iranian families have changed their historic roles from producers of children to producers of human capital (Becker, 1992; Lucas, 2002). There is little agreement as to why families change their behavior in this way, but generally changes are associated with an exogenous technological shock that increases returns on investment in children relative to large families. But some or all of these changes can be driven by purely demographic phenomena, such as a baby boom.

The age structure of the population in Iran has gone through drastic changes over the last decade resulting in an increase in the number of women of marriage age relative to men. Traditionally Iranian women marry men who are on average 5 years older. As a consequence of a baby boom occurring in the early years of the 1979 revolution, women born in the early 1980s reached marriage age several years earlier than the corresponding

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4 Previous version of this study appeared as “Marriage Squeeze and the Changing Pattern of Marriage in Iran”, co-authored with Dr. Djavad Salehi-Isfahani submitted to the IUSSP seminar on Changing Transitions to Marriage: Gender Implications for the Next Generation, Morocco, September 27-October 2, 2009.
cohorts of men creating what is called “marriage squeeze”. Over the last decade, Iranian women of marriage age have outnumbered men at the rate of 5 to 4. The consequence is an unfavorable marriage market for young women. Some of these young women will never marry, while others will have to accept marriages with age gaps outside accepted social norms. In particular, imbalances in the sex ratio (defined as the number of men 25-29 divided by women 20-24) can lead to a concatenation of social changes starting with parents and ending with investments in children. To clarify, sex ratio imbalances are that which affect the age and education differences of married couples and, in turn, the spouses’ bargaining power within the household. Such as the case with the average Iranian family that now more than ever before is balanced in terms of age and education, oriented in favor of a greater bargaining position for women and perhaps toward investment in children.

Several theoretical and empirical models explain the impact of sex ratio on couple’s age and education differences. The findings of this study support the existing theories: a higher sex ratio reduces the bargaining power of men at the time of marriage and thereby reduces their ability to marry younger and more educated women. This means that a higher ratio of men to women of marriage age should cause the age gap to shrink and the education gap to widen. We find evidence in support of both conjectures: when there is a surplus of men, they tend to marry women with less education than themselves resulting in a wider education gap. In the section to come, I briefly review some relevant theoretical and the empirical studies on the impact of the sex ratio on age and education differences of married couples.

Starting with the seminal work of Becker (1973, 1974), economists have devoted considerable attention to understanding the impact of the sex ratio imbalances on marriage outcomes, such as marriage rates and fertility, but yet not on couple’s age and education differences. Becker’s marriage model (1981) pioneered a simple framework for interpreting the effects of changing sex ratios. He emphasizes the marriage market’s role as a determiner of intra-household bargaining distribution. In his model, sex ratio represents the state of the marriage market. When the sex ratio is in favor of husband, i.e. when there is relative scarcity of men, the position of men in marriage market improves (see also Casterline et al. (1986); Chiappori et al. (2002)) and consequently the
distribution of marriage gains will be shifted to the husband. Women are less likely to marry when the gains of remaining unmarried are higher than getting married. Becker’s work on marriage stands on its own; however it opened the door to a new subfield of economics now known as the economics of marriage. Other researchers have since contributed to the field.

Bergstrom and Lam (1989) were the first to explain the association between sex ratio and couple’s age differences. They found that dramatic fluctuations in fertility in Sweden for the years 1882 to 1942 created large differences between the size of male and female cohorts who would normally marry each other. They point out that there are two possibilities for resolving sex ratio imbalances\(^5\): One possibility, as mentioned in the earlier studies, is that the sex ratio variations lead to changes in the proportion of men and women marrying for each cohort. The second possibility is through changes in traditional age differences between husbands and wives. Bergstrom and Lam discuss a model of marriage market assignments to assign partners to all men and women born during the period 1895-1945, using only adjustments in the age differences between couples as a response to sex ratio fluctuations. In doing so, they assume a payoff matrix in which “ideal” marriages have wives three years younger than their husbands, and deviations from the ideal age difference penalize the partners. The model captures the rapid fluctuations in the couple’s age difference observed in Sweden for cohorts born between 1915 and 1925, while less successful at following the decline in the age differences for cohorts born in the late 1920s.

In another study, Bhrolchain (2001) suggests that age preferences are not rigid, as the “marriage squeeze” hypothesis assumes. She shows that brides and grooms appear to adapt to the imbalances in the marriage market rather than to be restricted by the age distribution of the available partners, even in extreme sex ratio imbalance conditions such as the time after the First World War.

The effect of the sex ratio fluctuations on marriage market outcomes in the U.S. over recent decades has also been studied by Lavaty (2008). He finds little evidence that this

\(^5\) Bergstrom and Lam (1989) (p.6) use a “ballroom” analogy to clarify these possibilities.
variation affects the likelihood or timing of marriage. He concludes that sex ratio variation is more likely to change the characteristics of the spouse to whom one is currently married. In other words, sex ratio fluctuations alter the pattern of marriage, age and education difference, instead of changing the timing of marriage.

In a recent study, Bradatan (2009) analyzes the baby boom phenomena too. What happened in Romania was result of a policy change aimed toward higher fertility by restricting abortion. This policy led to almost doubling the number of newborns from 1966 to 1967 and consequently increasing the number of men and women entering the marriage market years later. Considering two possible responses of the marriage market to the sex ratio imbalance, Bradatan shows that, in a country where there is a strong social pressure toward marriage, i.e. where marriage is a must, the marriage rates do not decrease as a result of a marriage market squeeze, while the patterns do change. She concludes that women adjust themselves easily to a marriage squeeze situation by changing the type of spouses they choose, i.e. by changing their marriage age, educational, racial preferences. She uses the harmonic mean function (Schoen, 1983) to decompose the changes in the marriage rate into changes due to the mates’ availability and changes due to other factors such as marriage preferences. The idea behind the harmonic mean method is that the marriage rates depend on two factors: (1) societal factors such as social pressure toward marriage and different levels of attraction between men and women, defined by age, educational background, race, ethnicity, occupation, etc. and (2) the availability of partner (marriage market composition).

Foster and Khan (2000) criticize the previously mentioned studies and they argue that the prediction of these models can be misleading, since the models are not considering the dynamic aspects of marriage market equilibration through changes in the age at marriage. In other words, unmarried women or men in an imbalanced sex ratio environment can choose to marry later and, in turn, change the age gap in next stage. Using data from a rural area of Bangladesh, they conclude that the relevant relationship is not between relative cohort size and the age gap, but between relative cohort size and the rate of change in the age gap.

In a more recent study Abramitzky et al. (2011) use an exogenous negative shock to the French male population caused by WWI mortality to analyze the effect of male
scarcity on several outcomes of the marriage market such as men’s and women’s marital status, marital assortative matching by age and social class, and out-of-wedlock births. They find that a decrease in the number of men of marriage age relative to women increases the proportion of men who marry and allows them to marry women of higher social class. They also find that in societies with lower sex ratios, women are less likely to marry, and more likely to marry at older ages resulting in a decrease in the age gap between brides and grooms.

In addition to the above studies, other studies have pointed out further adjustments in the marriage market, specifically for developing countries, induced by changes in the relative number of marriageable men or women. Rao (1993), Grossbard-Shechtman (1993), Botticini (1999), Botticini and Siow (2003), and Edlund (2000) suggest dowries (and bride prices), commonly transfers money from the family of the bride (groom) to that of the groom (bride), as a type of marriage market adjustment. The standard model of dowry (Becker, 1981) assumes that dowries (and bride prices) are used as monetary transfers to clear the marriage market. Among mentioned studies, Rao (1993) focuses on the role of dowries in Indian marriage market and explains that marriage squeeze, i.e. more marriage-age women in the marriage market than men, in societies where women have limited options outside marriage would lead to an increase in dowries.


In this chapter, we examine the relationship between the sex ratio and changes in the age and education gaps of married couples controlling for individual characteristics. We use data from multiple national surveys from 1984-2007 to show that the age and education gaps of married couples have declined over time. Based on the previously mentioned studies, we do know that age at marriage has increased over the years and need to be considered in our model as another response of marriage market to the sex ratio imbalances, but the availability of data does not allow us to study changes in age at marriage.
2.2 Data

The survey data are from 24 Household Expenditure and Income Surveys (HEIS), 1984-2007. These surveys include basic demographic information, such as age and education, but not age at first marriage. In the descriptive part of the paper, the repeated surveys allow us to follow cohorts of married couples over time. The surveys range in size from 5,000 to 36,000 households. We use appropriate survey weights to obtain our estimates. We rely on reported age of the head of the household and the spouse, as in (Casterline et al., 1986), to measure the age gap at marriage. We do the same to measure the education gap, though education differences in later ages may not be the same as those when the couples were married. We believe that later education differences are still good indicators of the relative status of the couple at the time of marriage because information about schooling potential of individuals often exists at younger ages, for example based on where they are enrolled at the time of marriage or record of school performance.

We work with two samples constructed from the repeated surveys. First, we use all adults in the household irrespective of their relation to the head. We use this sample to determine the incidence of marriage for different cohorts and over time. Second, we restrict the sample to married couples only, composed of husband and wife. We drop households that report more than one female spouse (presumably polygamous households) and those headed by a single man or woman. We use this sample to analyze the trend in differences in age and education and the effect of the sex ratio on these differences. The observations in our married sample are men, with own and their wives' characteristics.

One potentially serious problem with our data is that we have no way of determining if these are first or second marriages. When we look at the age difference of couples by age, we notice that in the data men belonging to the same cohort have younger wives as they get older. For example, men born in 1945-49, whom we observe from age 35 to 59, show up with an age difference of 6.26 years when they are 35 (in 1984-89 surveys) and with an age difference of 7.70 years when they are 59 years old. Clearly, some selection is going on so that the age difference for the same cohort increases as it ages. Either there are more second marriages in the sample as the cohort ages, or marriages with lower age
differences dissolve sooner, due to divorce or death of a spouse. To reduce selection, we further confine the sample to men aged 20-59.

Data on the sex ratio are based on the United Nations World Population Prospects, 2005 edition. These data are by five year intervals. We extrapolate the age structures of individual years and merge it into our married couples sample based on year of birth. Sex ratios measure the age imbalance (ratio of men 25-29 to women 20-24) in the national marriage market\(^6\) when men of a given birth year reach age 25. Assuming a fixed age difference of five years is arbitrary\(^7\) and ipso facto does not take into account everything unique about the actual marital situation of men and women. Neelakantan and Tertilt (2008) show that the conclusions from sex ratio study are sensitive to how sex ratios are calculated. Porter (2009) adopts a sophisticated method of measuring the sex ratio that takes into account the degree of substitutability of marrying a spouse of different age. The assumption of a five-year difference is based on the experience of married couples born before the 1980s. In reality, the age difference is endogenous, as it is likely to respond to the exogenous demographic trends. In other words, with rising sex ratio imbalance, men and women may be more likely to choose spouses outside the prevailing age range of five years. However, in order to obtain a description of the exogenous demographic trends that affect the age imbalance in the marriage market at any particular time, the age difference needs to be fixed at some level.

### 2.3 The context

In this section we briefly provide the basic information on Iran's demography and economy that is relevant to the operation of the marriage market. We use survey data to depict the trends in the age and education gaps of married couples over time. Casterline et al. (1986) analyze cross-country data on age difference of spouses and observe that both

\(^6\) See chapter 1: Iran’s marriage market in transition, section: age structure effect, for more detailed information on sex ratio.

\(^7\) Sex ratio calculation method in this study is in line with previous studies. See (Angrist, 2002), (Browning et al., 1994), (Chiappori et al., 2002), (Grossbard-Shechtman, 1993), (Rao, 1993).
demographic and social factors, such as the status of women, affect the age difference of spouses. In Iran, rapid decline in fertility and rising women's education have likely contributed to the narrowing of the age gap. The main problem we face in obtaining an accurate depiction of the age differences of Iranian couples from our sample is, as noted earlier, lack of information on remarriage. So, to reduce the bias resulting in from older men marrying for a second time much younger wives, in this section we restrict the sample to couples with age differences between minus and plus 10. The resulting trend in age difference is shown in Figure 8.

Two interesting observations emerge from age difference graph. First, age differences are smaller, by about a year, in the more traditional rural areas. This is a surprising finding in view of two other differences between rural and urban areas: rural women are less educated\(^8\), and the sex ratio is more balanced in rural areas. So, clearly other factors, such as income may affect the marriage market outcomes. Second, in both rural and urban areas there is a clear downward trend in marriage age differences. Age differences decline from about 5-6 years for cohorts of men born in the 1940s (reaching marriage age in the 1960s) to less than 4 for those born in 1970s (reaching marriage age in the 1990s). There seems to be acceleration in the rate of decline for urban cohorts who married in the 1990s when fertility\(^9\) had begun its precipitous decline. The age difference was fairly constant for the 1960's cohorts.

Education data in Figure 9 also reveal large differences between rural and urban areas. For urban couples we observe a fairly constant difference of about 1.5 years for cohorts of men born in the 1940s up until mid 1960s, after which a sharp decline sets in. These are unions that were most likely formed in the late 1980s and later when fertility

\(^8\) See chapter 1: Iran’s marriage market in transition, section: rising education, for more detailed information on education trends.

\(^9\) See chapter 1: Iran’s marriage market in transition, section: fertility decline, for more detailed information on fertility trends.
had started its decline and women’s education was increasing. The schooling gap of rural couples increased from 0.5 years for cohorts of men born in the 1940 to more than 2 years for those born in the early 1960s. Subsequent rural cohorts have experienced a steady decline in the education gap, down to less than a year for the 1977 cohort. The differences between rural and urban areas that we observe here suggest that in our multivariate regression results we should consider running separate regressions.

The evidence presented in this section indicates that the Iranian marriage market has been relatively flexible in terms of age and education differences of married couples. On both accounts of age and education Iranian families have become more balanced, which bodes well for the future of the family as a unit which is more responsive to women’s needs and aspirations. Since the education of girls depends more strongly on mother's education (Thomas, 1994; Duflo, 2000a, 2000b; Qian, 2008), these changes imply increased opportunity for girls to benefit from family resources.

Figure 8: Age differences of married couples by birth year of the husband.
Note: Sample limited to couples with age differences between minus and plus 10 years.
In addition to the demographic changes, economic conditions also affect the operation of the marriage market. Figure 10 shows the path of GDP per capita, which indicates the overall level of economic activity, and private consumption per capita, which is a better indicator of individual welfare than GDP per capita. The 1980s were poor economic years as the disruptions caused by the revolution of 1979 and the war with Iraq (1980-1988) lowered GDP and private consumption per capita substantially. Since 1990s, the economy has been on a growth path, growing on average about 5 percent.
2.4 Multivariate analysis

In this section we attempt to determine the factors that affect the age and education differences of married couples. In doing so, we hope to increase our understanding of the factors that have contributed to the greater balance in age and education composition of the Iranian household. Our main focus is on the effect of the sex ratio, which is exogenous to household decisions. We also include individual characteristics and a variable measuring the general economic conditions.

The summary statistics for the regressions are provided in Table 3 and the main regression results are in Table 4. We report province coefficients separately in Table 5. In interpreting these results it is important to bear in mind that the sample is composed of about 300,000 married men whose spouses are alive and have been observed in a survey during 1984-2007. The unit of observation is the husband and we use his own characteristics (age and education) as well as those of his wife as regressors.
Table 3: Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observation</th>
<th>Mean</th>
<th>Standard Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husband age</td>
<td>279,923</td>
<td>38.62</td>
<td>8.55</td>
<td>20</td>
<td>59</td>
</tr>
<tr>
<td>Wife age</td>
<td>279,923</td>
<td>34.24</td>
<td>4.94</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Husband birth year</td>
<td>279,923</td>
<td>1959</td>
<td>8.93</td>
<td>1940</td>
<td>1977</td>
</tr>
<tr>
<td>Husband education</td>
<td>279,923</td>
<td>6.36</td>
<td>8.69</td>
<td>14</td>
<td>68</td>
</tr>
<tr>
<td>Wife education</td>
<td>279,923</td>
<td>5.06</td>
<td>4.82</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Age difference</td>
<td>279,923</td>
<td>4.38</td>
<td>3.47</td>
<td>-10</td>
<td>10</td>
</tr>
<tr>
<td>Education difference</td>
<td>279,923</td>
<td>1.32</td>
<td>3.56</td>
<td>-20</td>
<td>21</td>
</tr>
<tr>
<td>Sex ratio</td>
<td>279,923</td>
<td>0.84</td>
<td>0.08</td>
<td>0.67</td>
<td>0.93</td>
</tr>
<tr>
<td>Proportion Urban</td>
<td>279,923</td>
<td>0.68</td>
<td>0.47</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

In addition, we control for place of residence (rural and urban as well as province). The sex ratio and the macroeconomic indicator (GDP per capita) refer to when the husband was 25 years old. The dependent variable in the first three columns of Table 4 is the age gap and in the last three columns is the education gap. We report regression for the sample as a whole with an urban dummy (columns 3 and 6) and for rural and urban samples separately (columns 1-2 and 4-5). In regressions of the age gap we note a consistent decrease in the cohort effect. Controlling for other variables, the age gap of rural cohorts born during 1975-79 is on average 3.9 years lower than the reference cohort of 1940-44, for urban cohorts 2.9 years. The youngest birth cohorts are censored because many men in these cohorts had not yet married by the year of the last survey in 2007, but could later on. If older men tend to marry women with larger age differences, then the actual age difference may be greater that differences we observe. But this bias could go either way. The urban dummy in the regression for all men (rural and urban, in column 3) is positive, indicating that on average, and controlling for individual characteristics, urban men marry younger women. This is consistent with what we observed in Figure 8. The sex ratio coefficient is negative and significant at 1%, in both rural and urban areas, indicating that when there is an excess supply of men (a higher sex ratio), the age difference is smaller. This is consistent with our earlier conjecture that men prefer younger women and when the marriage market conditions allow, as when there are more women relative to men, they marry younger women. The coefficient of the sex ratio for urban men is larger, indicating that an increase in the sex ratio from 0.5 to 1 (a huge change) reduces the age difference by about 1.12 years. We interpret this result as
evidence of limited marriage market flexibility. The coefficient of the years of schooling of the husband is positive and significant. Evidently, all else the same, more educated men marry younger women, though the effect is very small. Among rural men the mean of age difference increases by only 0.025 years for every extra year of schooling. The result is, however, consistent with our conjecture that age difference is a normal good and therefore men with greater endowment (education) are able to marry younger women.

We include a control for survey year in order to allow for variation in the age difference between men of the same cohort but observed in different years (as they age). The effect of year of observation, or age, is very small but significant. Given birth cohort, married men observed later (in more recent surveys) have a larger age difference with their wives, perhaps because older men are more likely to have remarried. This suggests that if there is any selection on this account, the effect is very small.

The regressions on education gap present a similar picture of change over time and evidence of limited marriage market flexibility. The cohort effects for rural men are negative indicating a declining education gap for men born later. The rural gap is lower by 2.5 years for cohorts born during 1975-79 compared to the reference category. This is interesting in light of the inverted U-shape of the education gap we noted in Figure 9. The difference is most likely in that in the regressions we control for individual characteristics. So, it is quite possible that once we control for education, the trend is, like the age gap, monotonic. The urban education gap does not seem much affected by the birth cohort. Recall that in Figure 9 until the 1960s cohorts the education gap had remained constant and only started declining for later cohorts. The regression results, which control for other changes, do not show any decline in the education gap for later cohorts. The urban dummy in the education regression is negative, indicating that, as we observed in Figure 9, urban men have a smaller schooling difference with their spouses, by about 1.5 years. There had no particular expectation for the coefficient of log GDP per capita, which turns out to be negative and significant, signifying that men who marry in better economic times are more likely to have a smaller age difference with their wives.

The coefficient of the sex ratio is this time positive (and significant). This means that when the sex ratio is higher (there is a surplus of men), men tend to marry less educated women. This is consistent with the conjecture about men prefer to marry more educated
women. This relationship is clearer when, instead of the education gap, we use wife's education as the dependent variable and keep the husband's education on the right hand side. This regression (not reported here) clearly shows that, all else the same, a higher sex ratio results in a less educated wife. For the age gap the two regressions are nearly equivalent because in the regression on the age the coefficient of husband’ age was nearly one. The positive coefficient of husband's education in columns 4-6 is interesting in that it indicates that more educated men have larger education differences with their spouses. This is consistent with a positive income effect in demand for a younger spouse assuming that education is standing for income. This finding is not inconsistent with assortative mating. In our data the education of spouses are highly correlated: the correlation coefficient for age is about 0.9 and for education about 0.7. Incidentally, for both rural and urban couples the correlation in age has increased, but there is no clear trend for education. Finally, as with the age difference regressions, the age at which men were observed has a very small negative effect on the education gap. There is a large and interesting variation in the province effect on age and education gaps of married couples (Table 5). In these regressions the Central province (Markazi), which is relatively developed, is the reference category. Generally speaking, the age and education gaps are larger in tribal and less developed regions (Lorestan, Sistan, Ilam, and Kohkiloyeh). The northern Caspian provinces of Gilan and Mazandaran, which are also more developed, have lower age and education gaps. These results are interesting in light of the fact that in these regressions we have already accounted for differences in education between provinces, so what remains could be related to differences in the sex ratios which we have not controlled for, as we have used a national variable. Or, this may be due to other regional characteristics, such as cultural factors, some of which are very difficult to observe.
Table 4: Regression results for age and education differences

<table>
<thead>
<tr>
<th></th>
<th>Rural</th>
<th>Urban</th>
<th>Iran</th>
<th>Rural</th>
<th>Urban</th>
<th>Iran</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohort=1945</td>
<td>-0.602</td>
<td>-0.478</td>
<td>-0.521</td>
<td>0.006</td>
<td>-0.384</td>
<td>-0.204</td>
</tr>
<tr>
<td>(6.92)**</td>
<td>(6.23)**</td>
<td>(8.87)**</td>
<td>(0.13)</td>
<td>(5.15)**</td>
<td>(3.85)**</td>
<td></td>
</tr>
<tr>
<td>Cohort=1950</td>
<td>-1.29</td>
<td>-1.066</td>
<td>-1.133</td>
<td>-0.091</td>
<td>-0.643</td>
<td>-0.377</td>
</tr>
<tr>
<td>(12.58)**</td>
<td>(11.90)**</td>
<td>(16.41)**</td>
<td>(1.44)</td>
<td>(7.20)**</td>
<td>(5.88)**</td>
<td></td>
</tr>
<tr>
<td>Cohort=1955</td>
<td>-1.874</td>
<td>-1.472</td>
<td>-1.579</td>
<td>-0.34</td>
<td>-0.988</td>
<td>-0.671</td>
</tr>
<tr>
<td>(25.18)**</td>
<td>(22.40)**</td>
<td>(31.34)**</td>
<td>(7.65)**</td>
<td>(15.30)**</td>
<td>(14.56)**</td>
<td></td>
</tr>
<tr>
<td>Cohort=1960</td>
<td>-2.194</td>
<td>-1.728</td>
<td>-1.838</td>
<td>-0.615</td>
<td>-1.279</td>
<td>-0.926</td>
</tr>
<tr>
<td>(27.65)**</td>
<td>(24.32)**</td>
<td>(33.83)**</td>
<td>(12.43)**</td>
<td>(18.17)**</td>
<td>(18.40)**</td>
<td></td>
</tr>
<tr>
<td>Cohort=1965</td>
<td>-2.668</td>
<td>-1.959</td>
<td>-2.115</td>
<td>-1.303</td>
<td>-1.905</td>
<td>-1.531</td>
</tr>
<tr>
<td>(30.00)**</td>
<td>(24.59)**</td>
<td>(34.68)**</td>
<td>(22.56)**</td>
<td>(24.08)**</td>
<td>(26.89)**</td>
<td></td>
</tr>
<tr>
<td>(42.55)**</td>
<td>(34.94)**</td>
<td>(46.55)**</td>
<td>(37.93)**</td>
<td>(34.29)**</td>
<td>(40.53)**</td>
<td></td>
</tr>
<tr>
<td>(41.82)**</td>
<td>(34.94)**</td>
<td>(47.73)**</td>
<td>(37.21)**</td>
<td>(31.27)**</td>
<td>(37.76)**</td>
<td></td>
</tr>
<tr>
<td>Sex ratio</td>
<td>-1.907</td>
<td>-2.622</td>
<td>-2.417</td>
<td>1.244</td>
<td>1.119</td>
<td>1.189</td>
</tr>
<tr>
<td>(3.72)**</td>
<td>(5.79)**</td>
<td>(6.90)**</td>
<td>(3.54)**</td>
<td>(2.43)**</td>
<td>(3.53)**</td>
<td></td>
</tr>
<tr>
<td>Husband education</td>
<td>0.026</td>
<td>0.015</td>
<td>0.016</td>
<td>0.572</td>
<td>0.347</td>
<td>0.394</td>
</tr>
<tr>
<td>Wife education</td>
<td>0.202</td>
<td>0.058</td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey year</td>
<td>0.016</td>
<td>0.026</td>
<td>0.023</td>
<td>-0.035</td>
<td>-0.03</td>
<td>-0.032</td>
</tr>
<tr>
<td>(7.41)**</td>
<td>(13.42)**</td>
<td>(15.66)**</td>
<td>(23.73)**</td>
<td>(14.64)**</td>
<td>(21.83)**</td>
<td></td>
</tr>
<tr>
<td>Log GDP per capita</td>
<td>-0.358</td>
<td>-0.557</td>
<td>-0.506</td>
<td>0.196</td>
<td>-0.015</td>
<td>0.041</td>
</tr>
<tr>
<td>Urban</td>
<td>(1.94)</td>
<td>(3.50)**</td>
<td>(4.10)**</td>
<td>(1.57)</td>
<td>(0.09)</td>
<td>(0.35)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-24.241</td>
<td>-43.598</td>
<td>-38.677</td>
<td>69.111</td>
<td>58.787</td>
<td>64.418</td>
</tr>
<tr>
<td>(5.61)**</td>
<td>(11.11)**</td>
<td>(12.81)**</td>
<td>(23.15)**</td>
<td>(14.31)**</td>
<td>(21.61)**</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>125,413</td>
<td>143,098</td>
<td>268,511</td>
<td>125,413</td>
<td>143,098</td>
<td>268,511</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.09</td>
<td>0.05</td>
<td>0.07</td>
<td>0.43</td>
<td>0.22</td>
<td>0.26</td>
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</tbody>
</table>

Note: Robust t-statistics in parentheses. * significant at 5%; ** significant at 1%

Table 5: Results for age and education differences, province coefficients

<table>
<thead>
<tr>
<th></th>
<th>Rural</th>
<th>Urban</th>
<th>Iran</th>
<th>Rural</th>
<th>Urban</th>
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<tbody>
<tr>
<td>Age difference</td>
<td></td>
<td></td>
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<tr>
<td>Gilan</td>
<td>-0.885</td>
<td>-0.777</td>
<td>-0.798</td>
<td>-0.492</td>
<td>-0.65</td>
<td>-0.534</td>
</tr>
<tr>
<td>(11.23)**</td>
<td>(9.94)**</td>
<td>(14.01)**</td>
<td>(9.09)**</td>
<td>(8.62)**</td>
<td>(10.35)**</td>
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<tr>
<td>Mazandaran</td>
<td>-1.151</td>
<td>-0.674</td>
<td>-0.874</td>
<td>-0.342</td>
<td>-0.219</td>
<td>-0.192</td>
</tr>
<tr>
<td>(15.82)**</td>
<td>(9.10)**</td>
<td>(16.38)**</td>
<td>(6.89)**</td>
<td>(2.98)**</td>
<td>(3.92)**</td>
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</tr>
<tr>
<td>E.</td>
<td>0.357</td>
<td>0.269</td>
<td>0.275</td>
<td>0.387</td>
<td>0.338</td>
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<tr>
<td>W.</td>
<td>-0.335</td>
<td>-0.366</td>
<td>-0.393</td>
<td>0.502</td>
<td>0.653</td>
<td>0.55</td>
</tr>
<tr>
<td>Azarbaijan</td>
<td>(3.90)**</td>
<td>(4.37)**</td>
<td>(6.34)**</td>
<td>(9.69)**</td>
<td>(7.93)**</td>
<td>(9.79)**</td>
</tr>
<tr>
<td>Kermanshah</td>
<td>0.512</td>
<td>0.121</td>
<td>0.233</td>
<td>0.321</td>
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<tr>
<td>(5.64)**</td>
<td>(-1.64)</td>
<td>(3.67)**</td>
<td>(5.79)**</td>
<td>(3.68)**</td>
<td>(5.47)**</td>
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<tr>
<td>Khuzestan</td>
<td>0.15</td>
<td>-0.011</td>
<td>0.019</td>
<td>0.089</td>
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28
<table>
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<tr>
<th>Province</th>
<th>Robust t-statistics (parentheses)</th>
<th>Significance</th>
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</thead>
<tbody>
<tr>
<td>Fars</td>
<td>(1.81) (0.14) (0.33) (1.64) (3.34)** (2.87)**</td>
<td>**</td>
</tr>
<tr>
<td>Kerman</td>
<td>(-1.48) (4.22)** (4.25)** (0.98)** (12.04)** (13.97)**</td>
<td>**</td>
</tr>
<tr>
<td>R. Khorasan</td>
<td>(-0.192) (-0.97) (-0.51) (0.175) (-0.153) (-0.066)</td>
<td>-</td>
</tr>
<tr>
<td>Isfahan</td>
<td>(0.379) (0.616) (0.59) (-0.587) (-0.506) (-0.468)</td>
<td>-</td>
</tr>
<tr>
<td>Sistan</td>
<td>(1.07) (2.24) (7.42)** (16.28)** (12.17)** (15.61)**</td>
<td>**</td>
</tr>
<tr>
<td>Kurdestan</td>
<td>(0.063) (-0.76) (-0.7) (1.93) (1.429) (1.173)</td>
<td>-</td>
</tr>
<tr>
<td>Hamadan</td>
<td>(0.521) (0.397) (0.411) (0.338) (0.026) (0.146)</td>
<td>-</td>
</tr>
<tr>
<td>Bakhtiaris</td>
<td>(6.82)** (5.13)** (7.35)** (7.02)** (0.33) (2.79)**</td>
<td>**</td>
</tr>
<tr>
<td>Lorestan</td>
<td>(0.717) (0.25) (0.39) (0.206) (0.13) (0.12)</td>
<td>-</td>
</tr>
<tr>
<td>Ilam</td>
<td>(8.12)** (2.80)** (6.13)** (3.61)** (1.31) (2.03)</td>
<td>-</td>
</tr>
<tr>
<td>Kohkiloeyeh</td>
<td>(6.80)** (3.56)** (6.59)** (3.16)** (6.25) (6.52)</td>
<td>-</td>
</tr>
<tr>
<td>Bushehr</td>
<td>(0.578) (-0.416) (-0.475) (0.007) (0.051) (0.089)</td>
<td>-</td>
</tr>
<tr>
<td>Zanjan</td>
<td>(4.81)** (2.43)** (3.67)** (6.70)** (0.35) (1.41)</td>
<td>**</td>
</tr>
<tr>
<td>Semnan</td>
<td>(0.029) (0.158) (0.146) (-1.06) (-0.749) (-0.812)</td>
<td>-</td>
</tr>
<tr>
<td>Yazd</td>
<td>(2.28)** (1.97) (1.40) (6.36)** (0.23) (1.00)</td>
<td>-</td>
</tr>
<tr>
<td>Hormozgan</td>
<td>(5.46)** (-1.22) (3.83)** (5.13)** (-1.44) (3.09)**</td>
<td>**</td>
</tr>
<tr>
<td>Tehran</td>
<td>(2.99) (0.207) (0.23) (-1.407) (-1.028) (-1.057)</td>
<td>**</td>
</tr>
<tr>
<td>Ardebil</td>
<td>(-0.0118) (-0.079) (-0.099) (0.913) (1.385) (1.18)</td>
<td>-</td>
</tr>
<tr>
<td>Qom</td>
<td>(0.769) (0.41) (0.478) (0.078) (0.241) (0.274)</td>
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</tr>
<tr>
<td>Qazvin</td>
<td>(-0.77) (-0.219) (-0.174) (-0.18) (-0.293) (-0.247)</td>
<td>-</td>
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<tr>
<td>Golestan</td>
<td>(-0.596) (-0.468) (-0.577) (0.623) (0.339) (0.515)</td>
<td>-</td>
</tr>
<tr>
<td>N. Khorasan</td>
<td>(0.452) (-0.081) (0.092) (0.139) (0.6) (0.309)</td>
<td>-</td>
</tr>
<tr>
<td>S. Khorasan</td>
<td>(-0.161) (-0.701) (-0.543) (0.435) (-0.009) (0.146)</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: Robust t-statistics in parentheses. * significant at 5%; ** significant at 1%
2.5 Conclusion

In this study we use survey data to show that marriage in Iran has changed in two important respects, namely that the age and education differences between spouses are now lower than ever before. These changes are important for two reasons. First, they portend well for the future of the family in Iran. With greater equality in age and education, women's bargaining power within the family increases and will help shift family resources toward investment in children’s education, especially for girls. These changes are important from a welfare point of view in and of themselves, and also for economic growth. Second, the narrowing gaps shows flexibility in the social norms governing behavior in the marriage market. Flexibility is important if age imbalances in the marriage market continuing in the future are to be self-correcting. Recent increase in Iran’s sex ratio which is in part responsible for the delay in the marriage age of women may benefit from adjustments in the age differences at marriage.

We use the survey data to estimate the relationship between age and education gaps and the sex ratio controlling for individual characteristics. The results show that, in conformity with the findings from simple tabulations, after controlling for these variables, successive cohorts of men still appear to have smaller age and education differences with their wives. The results also show that the effect of the sex ratio on these gaps is broadly consistent with the idea that men in Iran prefer younger and more educated spouses. If these effects are to be believed, the recent surplus of women may have contributed to a wider age gap but a narrower education gap, with an overall ambiguous effect on the bargaining position of women.
Chapter 3

Understanding the Rising Age of Marriage in Rural Iran

3.1 Introduction

Young Iranian women are waiting to get married longer than ever before. Nearly one in four women between the ages of 25 and 29 was unmarried in 2006, compared to one in ten in 1986. In Turkey and Egypt less than one in five are now unmarried. The impressive aspect of changing marriage patterns in Iran is that the rising age of marriage is not only related to urban areas, but also extends to younger cohorts of women in rural areas. This is an impressive change of sentiment for rural families that have always been known for having more traditional and conservative attitudes toward early marriage (Tremayne, 2006). The mean age at first marriage in rural areas increased sharply in two decades from 19.6 years in 1986 to 23.4 years in 2006. There is a diminishing gap in age at first marriage between rural and urban areas in recent years.

Delayed marriage is often viewed as an indicator of women’s social progress but it can be due to failure of the marriage market to work properly. Women’s voluntary decisions to delay marriage—such as continuing their education (Behrman et al., 2006; Tayfur et al., 2008) or as it is expressed in a desire to have fewer children—shows positive progression toward a more developed, less patriarchic society. Of course, the caveat here is that women’s choices are too often dictated by social forces beyond their control. Age imbalances in Iran’s marriage market, availability of the family planning
program, and changes in marriage and divorce laws\textsuperscript{10} over the last decades have no doubt conditioned women’s behavior outside and within marriage.

In this chapter, I evaluate the effects of demographic change, sex ratio, and policy change in provision of the family planning program, and in particular health clinics, on delayed marriage in rural Iran. Using data from Iran’s 2000 Demographic and Health Survey (IDHS), I estimate a discrete-time hazard model of timing of marriage. The model, in particular, investigates how imbalances in the number of marriage-age men and women and access to the family planning affect the timing of marriage of rural women.

Several theoretical and empirical models explain the impact of sex ratio and access to family planning programs on marriage decisions of young women. The findings of this study support the existing theories: a decrease in sex ratio, i.e. shortage of men, contributes to the delay in marriage in rural Iran and easier access to family planning delays marriage through its effect on women’s fertility decisions. In the section to come, I briefly review the theoretical and empirical studies on the impact of sex ratio and availability of family planning program, respectively on marriage decisions of young women.

How do women’s marriage decisions depend on the conditions of the marriage market? During the last decades, this question has attracted renewed attention from both empirical and theoretical analysts. On the theoretical side, several studies have analyzed the behavioral impact of variables that may influence the composition of the marriage market. Sex ratio, defining as the relative supply of men and women in the marriage market, has long been recognized as one of the key factors determining the state of the marriage market (Becker, 1973). Women typically marry men who are on average 3 to 5 years older. As a consequence of rapid population growth, the baby boom women would reach marriage age several years earlier than corresponding cohorts of men creating what is called “marriage squeeze” (Bergstrom and Lam, 1989).

The pioneering marriage model of Becker (1981) provides a simple framework for interpreting the effects of changing sex ratios. He gives emphasis to the marriage market

\textsuperscript{10} Refer to chapter 4 for detailed discussions on marriage and divorce laws.
as an important determinant of intra-household bargaining distribution. In his model, sex ratio represents the state of the marriage market. When the sex ratio is in favor of the husband, i.e. there is relative scarcity of men, the distribution of marriage gains will be shifted to the husband. This can make unmarried women more likely to feel concern about getting married since the gains of remaining unmarried may be higher than getting married. Grossbard-Shechtman (1984) explains the effect of sex ratio on women’s marriage decision by creating a link between marriage and labor market. In her model, she views spouses as providers of a type of home production for which there are market substitutes. She considers husbands as employers and only owners of the property who are compensating employees, wives, “quasi-wages” in return of their spousal labor. A decrease in sex ratio decreases the demand for wives’ spousal labor and decreases the shadow wage for home production. Unmarried women in a low-sex-ratio environment will respond to the decreased demand for spousal labor by marrying later and investing more in skills valued outside the home and increasing their labor force participation\textsuperscript{11}.

Until the early 1980s, all the studies on this literature were based on demand and supply models of marriage. Manser and Brown (1980) and McElroy and Horney (1981) for the first time introduce alternative framework of bargaining models, in particular, cooperative bargaining model to investigate the intra-household decisions. Cooperative bargaining models give an important role to the “threat point” in determining one’s bargaining power. Threat point, also known as “reservation point”, for each spouse is a function of exogenous nonmarket incomes of husband and wife, price of the public good, and a vector of shift parameters that reflect opportunities outside the marriage\textsuperscript{12} such as marriage and remarriage market conditions\textsuperscript{13}. McElroy and Horney (1981) and McElroy (1990) point to the sex ratio in marriage and remarriage market as one member of a class of shifters (EEP’s) for the bargaining powers of spouses and thereby intra-household

\textsuperscript{11} See also (Heer and Grossbard-Shechtman, 1981).

\textsuperscript{12} Also known as “extrahousehold environmental parameters”, or EEP’s, in McElroy (1990) terminology.

\textsuperscript{13} Refer to chapter 4 for detailed discussions of marital bargaining models.
allocations. The higher one’s utility at the threat point, the higher one’s utility within the household and the higher expected gains from the marriage. Chiappori et al. (2002) extend the existing bargaining models by introducing sex ratio as an exogenous “distribution factor” into a collective labor supply model, affecting spouse's bargaining position within households through changing the opportunities of spouses outside marriage. In a theoretical framework, they show whenever the distribution factor, sex ratio, is favorable to one spouse—say, men are scarcer, which presumably increases the husband's bargaining position within the household—then the respective weights in the decision process will be shifted in his favor.

Together, these theoretical studies suggest that sex ratio has a significant effect on women's marriage decisions through changing the bargaining power within the household in favor of the scarcer spouse. Women, from the position of disadvantage, enter into marriage, or not at all: Expecting lower bargaining power within marriage may discourage unmarried women from entering into marriage.

On the empirical side, various studies have analyzed the relationship between the sex ratio and unmarried women's decisions toward marriage. Easterlin (1961) notes a decline in proportion of married women and the sex ratio, defined as number of men 25-34 to women 20-29, among foreign-born population in 1920s and suggests that these two phenomena are linked. Using the U.S. 1960 census data at states and counties levels, Freiden (1974) concludes that the proportion of women married is positively related to the sex ratios, defined as the number of men in each age group to the number of women. Guttentag and Secord (1983) emphasize the rising age of first marriage and the rising proportion of unmarried women as the direct consequences of men scarcity. They examine these hypotheses among white women in 1970s and confirm that the changes in the marriage pattern have been associated with the low sex ratios of the 1970s. South and Trent (1988) evaluate the effect of the sex ratios, defined as the number of men per 100

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14 Browning and Chiappori (1998) define “distribution factors” as variables that can affect the intra-household decision process without influencing individual preferences or the joint consumption set.
women age 15 to 49, on the rates of marriage and age of marriage, among other outcomes. They use a large sample including 117 countries to ensure that the results are not limited to a certain group of countries. Grossbard-Shectman (1993) studies the relation between sex ratios, defined as the number of men 27-30 to women 25-28, and marriage rates using census data for cities in 1930 and 1980. The results confirm that the larger numbers of men in a society are expected to be associated with a higher incidence of marriage among women. In another study South and Lloyd (1992) examine the impact of different measures of the quantity and quality of potential men and women's marriage opportunities on marriage rates. They conclude that greater marriage opportunities increase marriage rates. Angrist (2002) argues that the observed association between the sex ratios and marital status may be confounded by omitted variables and reverse causality resulting from the sex-biased migration. He uses variation in immigrant flows as a natural experiment to study the effects of endogenous sex ratios. The empirical results suggest that high sex ratios, number of men age 20-35 to women age 18-33, had a large positive effect on the likelihood of women’s marriage. In a more recent study Mincy et al. (2005), using United States data from the Fragile Families and Child-Wellbeing Survey, find that the higher the sex ratio in the city of residence, the more it is likely that women are married. The consequences of marriage squeeze have also received attention in developing countries. Rao (1993) documents that an adverse marriage market for women can increase the dowry, the amount transferred from the bride's family to the groom's. To sum up, these empirical investigations very strongly suggest a positive relation between sex ratios and marriage rates.

To our knowledge, Salehi-Isfahani and Taghvatalab (2009) were the first to empirically study women's transition to first marriage for Iran. We investigate the link between the imbalance in the number of marriage age men and women and recent changes in the couple’s age and education differences. We conclude that a higher sex ratio, i.e. the greater supply of marriage-age men, reduces the bargaining power of men at the time of marriage and thereby reduces their ability to marry younger and more
In another empirical study, Torabi and Baschieri (2010) look at the effect of sex ratio, among other factors, on women's timing of marriage. They note that an increase in sex ratio, i.e. shortage of women, does not increase the probability of marriage, suggesting the flexibility of marriage market.

It has been widely discussed in literature that young unmarried women’s access to family planning influences their marriage decisions. Goldin and Katz (2002) suggest a nice application of this reasoning. They argue that when contraceptive pills became widely available to unmarried women in the late 1960s, unmarried women could be sexually active and not have to worry about unwanted pregnancy. A cost of postponing marriage, either sexual abstinence or sexual activity and the threat of unwanted pregnancy, was removed. Unmarried women therefore became more likely to postpone marriage and accumulate more human capital. Attempting to integrate the theories linking the family planning program to marriage, Siow (2002) tries to bring together the two different views regarding the effects of family planning on women's welfare. The standard view, as mentioned by Goldin and Katz (2002) is that contraceptive innovations increase opportunities for women and therefore increase their welfare. An alternative view is that having access to the contraceptive tools cause more unmarried women to participate in sexual activities, reducing the bargaining power of women within marriage. Siow shows how the predictions of his model on the average age of first marriage depend on the state of birth control, racial group, and the relative supply of marriage-age men and women. For instance, when women are relatively scarce in the marriage market, the impact of contraceptive innovations is consistent with the standard view. While when marriage-age men are scarce, an alternative view applies.

In addition to the above theoretical studies, there are numerous empirical studies concentrating on the role of contraceptive tools on women’s welfare. In their influential study, Goldin and Katz (2002) use a formal econometrics analysis to explore the causal relationship between the access to the contraceptive pills and young women's career plans and marriage. Their empirical analysis concentrate on the so called “mature minor”

\[ \text{15 See chapter 2 for more detailed discussion on couple’s age and education differences.} \]
policy which gave young, unmarried women the right to have access to the pill without parental consent in the late 1960s and early 1970s. They use cross-cohort variation in the pill usage among college-age youth and cross-state variation in state laws affecting the pill access for young, unmarried women as an instrument to identify the relationship. The results show that “early legal access” to the pill lowers the cost of long-duration professional education for young unmarried women and raises the age at first marriage. However, it is not clear why only unmarried women (as noted by Bailey (2006), Chiappori and Oreffice (2008)) or college-educated women would benefit from the pill. Edlund and Machado (2009) revisit the relationship between the pill access and women's educational and occupational outcomes by including all women and exploring marriage as an alternative emancipation route for women. Using cross-state variation in the legal age of marriage\textsuperscript{16}, they find evidence that the pill access makes early marriage more attractive and facilitates women's educational and occupational attainments. Married but childless, gives women the means and time to follow higher education. Finally, they add the statement that their finding of the pill access raising marriage rates is likely limited to the study period of the late 1960s and early 1970s when the social acceptance of premarital sex was relatively low.

To sum up, the effect of family planning programs on the timing of marriage are not clear cut: Goldin and Katz (2002) argue that availability of contraceptive pills to unmarried women reduces the cost of postponing marriage and the threat of unwanted pregnancy. Unmarried women therefore become more likely to postpone marriage, while Edlund and Machado (2009) believe where the social acceptance of premarital sex is relatively low, access to the pill makes early marriage more attractive since women do not have to worry about unwanted pregnancy.

\textsuperscript{16} For more information on the minimum age of marriage, without parental consent, across the States see (Blank et al., 2007).
The data for this study comes from four separate data sets: (1) Iran's 2000 Demographic and Health Survey (IDHS)\textsuperscript{17}; (2) Health clinic construction database; (3) Censuses 1986 and 1996; and (4) Household Expenditure and Income Surveys (HEIS).

Iran Demographic and Health Survey of 2000 (IDHS) provides information on \textit{demographic characteristics} of individuals. The overall sample for IDHS survey consists of 113,913 households in 28 provinces and a total of 90,924 ever married women age 10-49. The survey designed so that in each of 28 provinces, 4,000 households (2,000 households equally in each rural and urban area) were interviewed with exception that in Tehran province, 2,000 households exclusively in Tehran city were interviewed. For this study, the sample is further limited to the rural areas\textsuperscript{18}. IDHS provides detailed information on marital status, age of marriage, district of residence, and socioeconomic characteristics of women. Since district is the smallest unit of location in IDHS, community characteristics have been measured at the district levels. In order to study the transition to marriage, it would be advantageous to have accurate marriage registration data for at least two points in time for each woman — such as the year of entering into the marriage market or search for a spouse, and the year of marriage. This information has not been directly asked in IDHS survey questionnaires. Based on information recorded in the sample about women’s age at first marriage, I set a minimum age of 10 for being at the risk of marriage, and I define risk as starting the search for a spouse\textsuperscript{19}. I generate marriage year for each woman based on her birth year and age at first marriage. For those women who have not yet been married at the time of survey (year 2000),

\textsuperscript{17} Data set is available from the Ministry of Health and Medical Education, Department of Health and Statistical Center of Iran (SCI).

\textsuperscript{18} The sample includes 53,059 rural women age 10-39 where 64 percent are never-married and 35 percent are ever-married. I also limited the sample to women whose age is less than 39 (or born after 1960), since only less than 4 percent of women above 40 in the sample have still remained unmarried.

\textsuperscript{19} In Iran the minimum ages of marriage for women and men are now 13 and 15, respectively. While marriage for women age 9 to 12 is possible subject to their physical ability, medical approval, and permission of father or paternal grandfather; Special Civil Court may grant permission if guardian refuses without valid reason.
“right-censored”20 women, I replace the survey year as their marriage year. This default characterization will help include the information of unmarried women as well. To analyze the transition to marriage, I set up a retrospective marriage history for each woman based on the time that she has been at the risk of marriage (i.e. age 10) and on the year she married. I restructure the database into a woman-year format wheretofore each woman’s information from the year of being at the risk of marriage until marriage year or survey year (i.e. for right-censored observations) has been compiled and taxonomized. The dependent variable, “marital status” as illustrated in Figure 11, is a dummy variable denoting whether a woman was married in a particular year. There are 272,542 women-years in retrospective dataset, with 19,119 marriages. I use the retrospective information on the timing of marriage in a discrete hazard model to estimate the hazard rate of getting married for each year of being at the risk of marriage. Figure 12 shows the hazard rate of marriage. It illustrates the number of women at risk of marriage and number of marriages happened at each spell year. The hazard rate is the ratio of these two numbers at each spell year.

![Figure 11: Women's life path.](image)

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The second source of data provides information on *community characteristics*, such as the presence of schools and the year of health clinic construction. As noted earlier, since the district is the smallest location unit of observation in IDHS, I upscale village level information to district level by defining the proportion of villages in each district with the primary, secondary, and high schools. Data availability allows me to create school facilities at the district levels only for 1986. Health clinic coverage measures the number of health clinics per 1000 rural women age 10-39 in their district of residence. Matching this information with marriage histories recorded from the 2000 IDHS, I trace the changes in health houses coverage as a function of time relative to the district of residence and the risk of marriage.

Censuses 1986, 1996 and 2006 are the third sources of data used to provide more information on *community characteristics* such as sex ratios, and employment and education. I measure the sex ratio as the number of men 25 to 29 divided by the number of women 20 to 24 in each province (see Table 6). I prefer to include the province level sex ratios instead of country level or district levels in the model for two reasons. First, by including province level instead of country level sex ratios, I can take advantage of the regional variations in the sex ratio. Second, calculating the sex ratios in province level instead of district level allows for the possible marriage-driven migrations of men and women within the province. Sex-biased migrations of marriage-age men and women between districts obviously change the pool of marriageable people and therefore, could result in endogenous sex ratios\(^\text{21}\). Fortunately, based on immigration information included in IDHS\(^\text{22}\), only about 4 percent of unmarried women in the sample have moved between the provinces in the last five years. Therefore, sex ratios are less likely to be determined

\(^{21}\) A potential way to mitigate this identification problem is to focus on events, such as wars or immigration episodes that lead to exogenous sex ratio changes. See (Acemoglu et al., 2002) and (Angrist, 2002).

\(^{22}\) IDHS only contains immigration information for those women who have moved in the last five years. For those women, the survey reports the number of years of residence in the same village, and also their previous place of residence.
endogenously in case of Iran. Moreover, I use the compound annual growth rate to project the sex ratios for years between census years. Assuming a fixed age difference of five years is arbitrary and ipso facto does not take into account everything unique about the actual marital situation of men and women. Neelakantan and Tertilt (2008) show that the conclusions from the sex ratio study are sensitive to how sex ratios are calculated. Porter (2009) adopts a sophisticated method of measuring the sex ratio that takes into account the degree of substitutability of marrying a spouse of different age. The assumption of a five-year difference is based on the experience of married couples born before the 1980s. In reality, the age difference is endogenous, as it is likely to respond to the exogenous demographic trends. In other words, with rising sex ratio imbalance, men and women may be more likely to choose spouses outside the prevailing age range of five years. However, in order to obtain a description of the exogenous demographic trends that affect the age imbalance in the marriage market at any particular time, the age difference needs to be fixed at some level. To test the robustness of the results to changes in the definition of sex ratio, I evaluate the model with two other sex ratio definitions. First, I define sex ratio as the number of men age 20 to 29 divided by the number of women age 20 to 24 in each province. This definition let us consider the degree of substitutability between marrying a spouse with different age gap of five years. Besides, I repeat the analysis using country level sex ratios. The results of the model are robust to both definitions.

\footnote{Sex ratio calculation method in this study is in line with previous studies. See (Angrist, 2002), (Browning et al., 1994), (Chiappori et al., 2002), (Grossbard-Shechtman, 1993), and (Rao, 1993).}
Table 6: Sex ratio (number of men 25-29 divided by women 20-24) by province, selected years

<table>
<thead>
<tr>
<th>Province</th>
<th>1980</th>
<th>1990</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Markazi</td>
<td>0.74</td>
<td>0.88</td>
<td>0.71</td>
</tr>
<tr>
<td>Gilan</td>
<td>0.71</td>
<td>0.85</td>
<td>0.65</td>
</tr>
<tr>
<td>Mazandaran</td>
<td>0.72</td>
<td>0.86</td>
<td>0.69</td>
</tr>
<tr>
<td>E.Azarbaijan</td>
<td>0.85</td>
<td>0.83</td>
<td>0.73</td>
</tr>
<tr>
<td>W.Azarbaijan</td>
<td>0.79</td>
<td>0.84</td>
<td>0.80</td>
</tr>
<tr>
<td>Kermanshah</td>
<td>0.93</td>
<td>0.83</td>
<td>0.85</td>
</tr>
<tr>
<td>Khuzestan</td>
<td>1.00</td>
<td>0.84</td>
<td>0.76</td>
</tr>
<tr>
<td>Fars</td>
<td>1.01</td>
<td>0.87</td>
<td>0.72</td>
</tr>
<tr>
<td>Kerman</td>
<td>0.89</td>
<td>0.85</td>
<td>0.74</td>
</tr>
<tr>
<td>R.Khorasan</td>
<td>0.92</td>
<td>0.84</td>
<td>0.65</td>
</tr>
<tr>
<td>Isfahan</td>
<td>0.87</td>
<td>0.92</td>
<td>0.81</td>
</tr>
<tr>
<td>Sistan</td>
<td>0.89</td>
<td>0.74</td>
<td>0.71</td>
</tr>
<tr>
<td>Kurdestan</td>
<td>1.01</td>
<td>0.76</td>
<td>0.81</td>
</tr>
<tr>
<td>Hamadan</td>
<td>0.95</td>
<td>0.88</td>
<td>0.72</td>
</tr>
<tr>
<td>Bakhtiar</td>
<td>0.86</td>
<td>0.84</td>
<td>0.68</td>
</tr>
<tr>
<td>Lorestan</td>
<td>1.15</td>
<td>0.78</td>
<td>0.71</td>
</tr>
<tr>
<td>Ilam</td>
<td>1.43</td>
<td>0.71</td>
<td>0.73</td>
</tr>
<tr>
<td>Kohkiloyeh</td>
<td>1.32</td>
<td>0.74</td>
<td>0.65</td>
</tr>
<tr>
<td>Bushehr</td>
<td>1.14</td>
<td>0.79</td>
<td>0.77</td>
</tr>
<tr>
<td>Zanjan</td>
<td>1.03</td>
<td>0.81</td>
<td>0.72</td>
</tr>
<tr>
<td>Semnan</td>
<td>0.95</td>
<td>0.88</td>
<td>0.93</td>
</tr>
<tr>
<td>Yazd</td>
<td>1.01</td>
<td>0.95</td>
<td>0.77</td>
</tr>
<tr>
<td>Hormozgan</td>
<td>1.07</td>
<td>0.88</td>
<td>0.79</td>
</tr>
<tr>
<td>Tehran</td>
<td>0.93</td>
<td>0.94</td>
<td>0.87</td>
</tr>
<tr>
<td>Ardebil</td>
<td>0.83</td>
<td>0.78</td>
<td>0.68</td>
</tr>
<tr>
<td>Qom</td>
<td>1.00</td>
<td>0.91</td>
<td>0.79</td>
</tr>
</tbody>
</table>
Average education levels and employment rates of the districts are the other two variables driven from the 1996 census. As noted earlier, delay in marriage could be partly explained as a result of women's educational attainment and employment. However, there is still little research to substantiate the claim that rise in education and female labor force participation are indeed driving this delay in marriage. As education and employment decisions are likely endogenously determined, the causality of these variables on the timing of marriage is far from clear. As a result of possible endogeneity problem arising from the interrelations between individuals' education and employment decisions with marriage decisions, I include the average education and employment rates of the district of residence in 1996 for each woman. The reason for including these variables is that the education and employment decisions of women are highly influenced by the level of education and employment of their place of residence. Moreover, including the average level of education of the district help us control for possible observable factor that is

---

24 For more detailed information on this literature see (Tayfur et al., 2008), (Breierova and Duflo, 2004), (Lefgren and McIntyre, 2006), (Behrman et al., 2006), and (Osili and Long, 2008).
important in health clinic placement decisions (i.e. availability of qualified health workers) and also more likely to be correlated with marriage decisions. I measure the districts’ average education by first calculating the proportions of women age 15-49 with primary, secondary, high school, and college education in each district. Then I calculate the average years of education in each district using these proportions and their corresponding years\(^{25}\). In addition to district level education, labor force participation rates of men and women and female public to private employment, i.e. the ratio of employed women in total population in public sector to the private sector, have also been calculated for each district based on census 1996.

The last source of data comes from Household Expenditure and Income Surveys (HEIS) conducted by Statistical Center of Iran (SCI) during 1984-2009. Considering the availability of data at the district level only for years after 1996, I include per capita total expenditure of 2004 in the model. It would be more plausible to include an indicator showing the economic status of women's families (i.e. women's economic status before marriage), but IDHS does not contain any family background information. Therefore, I use district level average per capita total expenditure as a proxy indicator for the economic status of the place of residence.

Table 7 provides summary statistics of the variables included in the empirical model. This table consists of two sections: left section of the table provides information on women's characteristics at the survey year (2000). From the total number of 53,059 rural women age 10-39 in the sample, 64 percent are unmarried and 35 percent are ever-married at survey year. Nearly one in five of women are illiterate. The proportion of females with primary education (about 34 percent) is the highest compare to the other levels of education. The average age of marriage is 17 years old. The right section of the table provides summary statistics of community characteristics that is based on the restructured sample of women-year. Nearly nine in ten (about 94 percent) of the villages in each district have primary school facilities and 32 percent of them have secondary

\(^{25}\) 16 years of education for college graduates, 12 years for high school, 8 years for secondary school, and 5 years for primary school.
school. The average years of education is 2.6 years, less than completed primary education, at the district level. As mentioned earlier, health clinic coverage measures the number of health clinics per 1000 rural women age 10-39 in their district of residence. The average of coverage is about 2 health clinic per 1000 rural women. Table 7 also reports districts’ employment opportunities. On average one in ten women age 10-39 is employed. The shares of women in public and private sectors reflect higher participation of women in private sectors. As noted earlier, sex ratio measures the imbalances in the marriage market by calculating the number of men age 25-29 to the number of women age 20-24 in each province. The average of sex ratio is 0.85 which shows an unbalanced marriage market in favor of men. I include the district level per capita total expenditure as an indicator for the economic status of the place of residence. The average per capita total expenditure is 22,026 Rial per day (almost 1.5$ per day) in 2004.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Variable</th>
<th>Mean</th>
<th>St. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Women characteristics</strong></td>
<td></td>
<td></td>
<td><strong>Community characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cohort</strong></td>
<td></td>
<td></td>
<td><strong>Schooling facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1961-1965</td>
<td>3,830</td>
<td></td>
<td>Primary school</td>
<td>0.94</td>
<td>0.94</td>
</tr>
<tr>
<td>1966-1970</td>
<td>4,888</td>
<td></td>
<td>Secondary school</td>
<td>0.32</td>
<td>0.16</td>
</tr>
<tr>
<td>1971-1975</td>
<td>6,576</td>
<td></td>
<td>Average years of schooling</td>
<td>2.64</td>
<td>1.19</td>
</tr>
<tr>
<td>1976-1980</td>
<td>9,272</td>
<td></td>
<td>Coverage</td>
<td>1.92</td>
<td>1.38</td>
</tr>
<tr>
<td>1981-1985</td>
<td>13,317</td>
<td></td>
<td>(# health clinics per 1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1986-1990</td>
<td>15,051</td>
<td></td>
<td>women)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td><strong>Employment opportunities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>0.19</td>
<td></td>
<td>Labor force participation rate-fem</td>
<td>0.09</td>
<td>0.09</td>
</tr>
<tr>
<td>Primary</td>
<td>0.34</td>
<td></td>
<td>share of private sector-male</td>
<td>0.47</td>
<td>0.11</td>
</tr>
<tr>
<td>Secondary</td>
<td>0.13</td>
<td></td>
<td>share of public sector-male</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Marriage status</strong></td>
<td></td>
<td></td>
<td>share of public sector-female</td>
<td>0.08</td>
<td>0.08</td>
</tr>
<tr>
<td>Married</td>
<td>0.35</td>
<td></td>
<td>share of public sector-female</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>Divorced/Widowed</td>
<td>0.01</td>
<td></td>
<td>Sex ratio</td>
<td>0.85</td>
<td>0.11</td>
</tr>
<tr>
<td>Never married</td>
<td>0.64</td>
<td></td>
<td>(Province-level)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>20.4</td>
<td>7.93</td>
<td>Per capita total expenditure</td>
<td>22,026</td>
<td>12,874</td>
</tr>
<tr>
<td>Age at first marriage</td>
<td>17.5</td>
<td>3.61</td>
<td>(Rial/day)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>number of women</td>
<td>53,059</td>
<td></td>
<td>Number of women-year spells</td>
<td>272,542</td>
<td></td>
</tr>
<tr>
<td>number of districts</td>
<td>196</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.2 Empirical model

I use a discrete-time hazard model, also known as duration model, to estimate the effect of imbalances in the marriage market (sex ratio) and the effect of access to family planning program on marriage\(^{26}\). The outcome of interest is the probability of marriage in each year after being at the risk of marriage (i.e. age 10). To estimate the marriage probability, I construct marriage histories for each woman using IDHS dataset. The unit of observation in this study is woman-year, so that for each woman we know whether or not marriage occurred in each year. As mentioned earlier in the data section, 63 percent of the sample consists of women 10-39 who have not yet married at the time of 2000 survey and who are also known as “right-censored” observations. The hazard model is advantageous because it includes right censored observations in the regression simply by approximating the true value for duration of being at the risk of marriage. Ignoring large numbers of right censored observations increases the estimation bias. I model the probability of marriage as a function of women’s birth cohort and the characteristics of the place of residence, such as family planning facilities, sex ratio, educational employment opportunities, and economic status. The basic logistics equation I estimate has the form:

\[
\ln \left[ \frac{P(M_{jt} = 1 \mid X_{jt}, \text{COV}_{jt}; SR_{jt}, Z_j, \mu_j)}{P(M_{jt} = 0 \mid X_{jt}, \text{COV}_{jt}; SR_{jt}, Z_j, \mu_j)} \right] = \sum_{k=1}^{29} \tau_i T_k + \partial \text{COV}_{jt} + \beta \left[ \sum_{k=1}^{2} T_k \right] + \gamma \text{SR}_{jt} + X_{jt} \alpha + Z_j \phi + \mu_j + \sum_{p=1}^{29} \eta_p S_p + \varepsilon_{jt}
\]

Where \(i\) indexes individuals; \(j\) indexes district of residence; \(t\) indexes year, i.e. from the year of being at the risk of marriage (age 10) until the year of marriage; the

\(^{26}\)The hazard model applied in this study is in line with other studies, such as (Anderson et al., 1987), (Santow and Bracher, 1994), and (Manda and Meyer, 2005).
dependent variable \( M_{ijt} \) is a binary variable equal to 1 if woman \( i \) in district \( j \) marries at year \( t \), and 0 otherwise; \( X_{ij} \) contains observed time-invariant women's characteristics such as birth year; \( COV_{jt} \) is the coverage of health clinics in district \( j \) at year \( t \) which presents the number of health clinics per 1000 rural women in each district at each year; \( T_k \) contains two dummy variables indicating the period during which the marriage occurs. The first dummy variable represents the pro-natal period after the revolution, 1979-1988 when health clinics were only providing health care services and the second dummy variable represents the period of 1989-2000 when health clinics started providing family planning as well as health care services. The pre-revolution period 1970-1979 is the reference period. To estimate the change in the effect of health clinics' coverage over time, I include the interaction of \( COV_{jt} \) with the period dummies, \( T_k \) in the regression. The difference between the coefficients of the interaction terms before and after the family planning program shows the program impact. \( SR_{jt} \) is the sex ratio in district \( j \) at year \( t \) which defines as the number of men 25-29 divided by women 20-24; \( Z_j \) are time-invariant district characteristics, such as number of primary and middle schools, female and male labor force participation rates, ratio of female employees in public sector to private sector, and per capita total expenditures (in logged form); \( \mu_j \) includes unobservable factors, such as social norms which affect both marriage and placement decisions. Since the program placement has not been completely random, therefore \( \mu_j \) will be correlated with the error term and will result in biased estimators. As mentioned earlier, to deal with such problem I use fixed-effect method by including a dummy variable for each of \( j \) districts. The hazard of marriage at each point of time depends on the previous periods or “spells”\(^{27}\). To correct for the inefficiency of estimators resulting from the duration time dependency (“serial correlation”), I use a set of temporal dummy

\(^{27}\) Also known as “time-variant hazard rate"
variables for each spell\textsuperscript{28} (Jenkins, 2005). $S_p$'s denote spell dummies in the model which are acting as a time counter for each spell. The coefficient of these spell dummies can be interpreted as the baseline hazard function \textsuperscript{29} \textsuperscript{30} (see Figure 12). In order to identify the coefficients of the model, I include all the spell dummies and exclude the intercept term\textsuperscript{31}. I set the year of entering into the risk of marriage (age 10) as the first spell dummy and then counter the hazard for twenty nine years after. Moreover, in case of duration time dependency, the standard errors of the logit model would be wrong (Poirier and Ruud, 1988). I simply correct the standard errors by using robust standard errors clustered on the unit of analysis (women)\textsuperscript{32}.

### 3.3 Estimation results

Table 8 shows the estimation results from the discrete-time hazard model for rural women. The first column of this table provides results on the estimation of a simple logit model. As noted earlier, omitting the unobservable factors, such as social norms from the regression could result in inconsistent estimators. To deal with this problem I use the fixed-effect logit model by introducing 196 district dummies in the regression. The result of the fixed-effects model has been reported in the second column of Table 8. The coefficients of the fixed-effects logit model are more likely to be consistent compare to the simple logit coefficients. In the following section, I will interpret the fixed-effects logit coefficients. The cohort dummies’ coefficients confirm delayed marriage among recent cohorts. The hazard of marriage has decreased for younger generations. In other

\textsuperscript{28} Also refers as “non-parametric” estimation of the hazard function.

\textsuperscript{29} Baseline hazard is the probability of marriage in each time interval when all the explanatory variables are zero.

\textsuperscript{30} See (Han and Hausman, 1990) for more detailed information on non-parametric baseline hazard.

\textsuperscript{31} Another way is to include all but one dummy and include the intercept as well (Jenkins, 2005).

\textsuperscript{32} Another way to deal with temporal dependence is to estimate a Generalized Estimation Equation (GEE) model. To read more about GEE models, see (Zorn, 2001).
words, recent cohorts of rural women are waiting longer to get married compare to their previous generations. The positive coefficient of the sex ratio is consistent with the theories mentioned earlier. The higher the sex ratio (i.e. the greater the supply of marriage-age men), the higher is the chances for a woman to find a man five years older. The second set of covariates included in the model measuring the impact of the health clinics on the timing of marriage, distinguishing between their effect when they delivered only health services (pro-natal period 1979-1989) and when they also provided family planning programs (1989-2000). To understand the impact of exposure to the family planning program on marriage timing, I estimate the coefficients of health clinic coverage and its interactions with period dummies. The effect of health clinic coverage is the sum of coverage coefficient in the reference year and the coefficient of relevant interaction term. The positive coefficient for coverage in the base year demonstrates an increase in the probability of marriage. Surprisingly, the coefficients on the pro-natal period and family planning period interactions are nearly identical. Adding the coefficients of either one to the baseline coverage coefficients gives a slightly positive number close to zero, 0.04 and 0.02 respectively. Therefore, the results show that the type of health clinic function does not matter in affecting rural women’s marriage decisions. The third set of covariates in this model captures the effects of district-level characteristics on the hazard of marriage. Living in districts with different rates of female participation in labor market and female employment in public sector relative to private sector do not affect the probability of marriage. Interestingly, among factors influencing development level of regions, the income level of the district has a negative effect on the hazard of marriage indicating that better economic status of the place of residence delays marriage. Infrastructure improvements, such as school facilities are decreasing the hazard of marriage.
Table 8: Estimated coefficients from a discrete-hazard model

<table>
<thead>
<tr>
<th>Variables</th>
<th>Probability of marriage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Simple logit</td>
</tr>
<tr>
<td><strong>Cohort effects</strong></td>
<td></td>
</tr>
<tr>
<td>(reference: 1961-1965)</td>
<td></td>
</tr>
<tr>
<td>Cohort 1966-1970</td>
<td>-0.20***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
</tr>
<tr>
<td>Cohort 1971-1975</td>
<td>-0.51***</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
</tr>
<tr>
<td>Cohort 1976-1980</td>
<td>-0.86***</td>
</tr>
<tr>
<td></td>
<td>(0.15)</td>
</tr>
<tr>
<td>Cohort 1981-1985</td>
<td>-1.36***</td>
</tr>
<tr>
<td></td>
<td>(0.20)</td>
</tr>
<tr>
<td>Cohort 1986-1989</td>
<td>-2.19***</td>
</tr>
<tr>
<td></td>
<td>(0.31)</td>
</tr>
<tr>
<td>Sex ratio</td>
<td>0.64***</td>
</tr>
<tr>
<td></td>
<td>(0.15)</td>
</tr>
<tr>
<td><strong>Time period effect</strong></td>
<td></td>
</tr>
<tr>
<td>(reference: Pre-revolution1970-1978)</td>
<td></td>
</tr>
<tr>
<td>Pro-natal (1979-1988)</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td>(0.21)</td>
</tr>
<tr>
<td>Family planning (1989-2000)</td>
<td>-0.23</td>
</tr>
<tr>
<td></td>
<td>(0.53)</td>
</tr>
<tr>
<td>Coverage</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
</tr>
<tr>
<td>(Pro-natal period)*Coverage</td>
<td>-0.02</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
</tr>
<tr>
<td>(Family planning period)*Coverage</td>
<td>-0.03</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
</tr>
<tr>
<td><strong>District level characteristics:</strong></td>
<td></td>
</tr>
<tr>
<td>Public/Private labor participation</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
</tr>
</tbody>
</table>
Finally, the last sets of estimates are the temporal dummy variables (Table 9). The coefficients of these dummy variables illustrate the baseline hazard. The hazard of marriage is increasing as the number of years being at the risk of marriage increase and reach its highest point in the ninth, tenth and eleventh years, corresponding to ages 19, 20, and 21 years old.

Table 9: Estimated coefficients from a discrete-hazard model (continued)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Probability of marriage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Simple logit</td>
</tr>
<tr>
<td>Spell duration dummies</td>
<td></td>
</tr>
<tr>
<td>1 year</td>
<td>-8.87***</td>
</tr>
<tr>
<td></td>
<td>(0.63)</td>
</tr>
<tr>
<td>2 years</td>
<td>-9.04***</td>
</tr>
<tr>
<td></td>
<td>(0.56)</td>
</tr>
<tr>
<td>3 years</td>
<td>-7.74***</td>
</tr>
<tr>
<td></td>
<td>(0.60)</td>
</tr>
<tr>
<td>4 years</td>
<td>-7.25***</td>
</tr>
<tr>
<td></td>
<td>(0.64)</td>
</tr>
<tr>
<td>5 years</td>
<td>-6.53***</td>
</tr>
<tr>
<td></td>
<td>(0.63)</td>
</tr>
<tr>
<td>6 years</td>
<td>-6.04***</td>
</tr>
<tr>
<td></td>
<td>(0.64)</td>
</tr>
<tr>
<td>7 years</td>
<td>-5.97***</td>
</tr>
<tr>
<td></td>
<td>(0.65)</td>
</tr>
<tr>
<td>8 years</td>
<td>-5.79***</td>
</tr>
<tr>
<td></td>
<td>(0.67)</td>
</tr>
<tr>
<td>9 years</td>
<td>-5.55***</td>
</tr>
<tr>
<td></td>
<td>(0.66)</td>
</tr>
<tr>
<td>Year</td>
<td>Coefficient</td>
</tr>
<tr>
<td>-------</td>
<td>--------------</td>
</tr>
<tr>
<td>10 years</td>
<td>-5.71***</td>
</tr>
<tr>
<td></td>
<td>(0.68)</td>
</tr>
<tr>
<td>11 years</td>
<td>-5.64***</td>
</tr>
<tr>
<td></td>
<td>(0.64)</td>
</tr>
<tr>
<td>12 years</td>
<td>-5.92***</td>
</tr>
<tr>
<td></td>
<td>(0.66)</td>
</tr>
<tr>
<td>13 years</td>
<td>-5.92***</td>
</tr>
<tr>
<td></td>
<td>(0.63)</td>
</tr>
<tr>
<td>14 years</td>
<td>-6.18***</td>
</tr>
<tr>
<td></td>
<td>(0.64)</td>
</tr>
<tr>
<td>15 years</td>
<td>-6.17***</td>
</tr>
<tr>
<td></td>
<td>(0.61)</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-45,827.622</td>
</tr>
<tr>
<td>Number of observations</td>
<td>272,542</td>
</tr>
</tbody>
</table>

Note: Standard errors in parentheses (account for clustering at the individual level)
Note: * significant at 10%; ** significant at 5%; *** significant at 1%

Figures 13, 14, and 15 provide some intuition on the magnitude of the estimated coefficients. The figures show that being born into a different cohort, a district with unbalanced sex ratio or a district with high coverage of health clinics affects the probability of marriage. I use the estimation results of the logit model to create synthetic individuals with selected individual characteristics set at the mean sample and allow for only the changes in characteristics, such as birth cohort, sex ratio, and health clinic coverage as the bases for the visual composition of the figures pictured below. This approach will provide a clear explanation of the marginal impact of each of these variables on the probability of marriage. As the following figures show, the changes in each of these variables are correspondent to shifts in the baseline hazard. Figure 13 illustrates the impact of birth cohort on the hazard of marriage. This figure clearly shows members of more recent birth cohorts have, all other characteristics being equal or held constant, a negative impact on the probability of marriage. For instance, a woman who

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33 I follow the approach introduced by Jenkins (2005).
has been born between 1976 and 1980 has about three percentage points less probability of getting married at age 20 than a woman born between 1966 and 1970.

Figure 13: Birth cohort and the timing of marriage among rural women (with secondary school education) - Note: Author's calculations based on the estimated coefficients of the logit model.

Figure 14 demonstrates the effect of the sex ratio variations on women's transition to marriage. The impact of the sex ratio on the probability of marriage is shown by the gap in the probability of getting married for each of these synthetic women in different ages. A woman who is living in areas with relatively low sex ratios, i.e. shortage of men, has about one percentage point less probability of getting married at age 20 than a woman living in areas with greater supply of marriage-age men.

Finally, Figure 15 illustrates the impact of exposure to health clinics on the probability of marriage. This figure shows how an increase in the coverage of health clinics raises the probability of marriage.
Figure 14: Sex ratio and the timing of marriage among rural (birth cohort 1971-1975, with secondary school education) - Note: Author’s calculations based on the estimated coefficients of the logit model.

Figure 15: Health clinic and the timing of marriage among rural women (birth cohort 1971-1975, with secondary school education) - Note: Author's calculations based on the estimated coefficients of the logit model.
3.4 Conclusion

The dramatic rise in the proportions of unmarried women in recent years, especially in more traditional and conservative rural areas, has led to wide interests in understanding delayed marriage as a social phenomenon. Delayed marriage is often viewed as an indicator of women’s social progress but it can be due to failure of the marriage market to work properly. Women’s voluntary decisions to delay marriage—such as continuing their education or as it is expressed in a desire to have fewer children—shows positive progression toward a more developed, less patriarchic society. Of course, the caveat here is that women’s choices are too often dictated by social exogenous forces beyond their control. Age imbalances in Iran’s marriage market and changes in marriage and divorce laws over the last decades have no doubt conditioned women’s behavior outside and within marriage.

In this chapter, I use data from Iran’s 2000 Demographic and Health Survey (IDHS) to assess the impact of sex ratios and access to family planning programs on rural women’s marriage decisions. I analyze the effect of the sex ratio (defined as the number of men age 25 to 29 divided by the number of women age 20 to 24) on the timing of marriage assuming a five-year age difference among married couples. I admit a possible endogeneity of the age difference. That with rising sex ratio imbalance, men and women may be more likely to choose spouses outside the prevailing age range of five years. However, in order to obtain a description of the exogenous demographic trends that affect the age imbalance in the marriage market at any particular time, I fix the age difference at five years. To identify the effect of family planning program, I take advantage of the geographic distribution of health clinics across rural areas. Concern for endogenous placement arises from the fact that the spread of health clinics has not been completely random across the country. Local infrastructure and the level of education have influenced when a health clinic was established in a rural area. I control for these factors and possible unobservable factors that affect both program placement and marriage decision using fixed effects at the district level. A discrete-time hazard model has been employed to estimate the effect of sex ratio imbalances and exposure to family planning on the probability of marriage. Then, I analyze the effect of health clinics during their different stages of operation. The estimation results show that the higher the sex ratio, i.e.
the greater supply of marriage-age men, the higher is the chances for a woman to find a man five years older. Also, in the periods before 1989 when rural health clinics were not offering family planning program, exposure to the health clinic had a positive effect on the probability of marriage. However, during the periods of providing family planning program, exposure to the health clinics does not affect the probability of marriage. In other words, the type of health clinic function does not matter in rural women’s marriage decisions.

In a country like Iran marriage and forming a family are considered a rite of passage. Marriage marks the initiation into adulthood; having children however is the next step. It signals the parents’ initiations into society as producers of human capital. Distinguishing between voluntary and involuntary delay is, then, important for social and economic policies directed toward the welfare of Iranian youth. This study has two important implications. First, we find that sex ratio is one of the most important factors affecting the timing of marriage. Although the marriage market is now characterized by a shortage of men, in a decade or so it will be the reverse. Policy should aim to reduce the social and psychological consequences of these fluctuations on the welfare of youth. One way to do this is to increase public awareness on how rigid social norms in marriage (fixed and wide age gap of married couples) can exacerbate rather than accommodate fluctuations in the sex ratio. For example, one implication of this understanding is that the current attempt in Iran to change family laws to make it easier for men to marry more than one wife, if it indeed intends to deal with the current “shortage of men”, is shortsighted. Besides, large age differences are not only unfavorable from the point of view of low bargaining power of women within household and possibly resulting in a higher divorce rate; but also they can contribute to involuntary delay in marriage. The second implication is that having access to family planning programs can affect the timing of marriage through its effect on fertility. Salehi-Isfahani et al. (2010) and Hashemi and Salehi-Isfahani (2011) show that the family planning program had a limited impact on the

34 Article 23 of the proposed Family Protection Bill of 2007 authorizes “polygamous marriages contingent upon the financial capacity of the man”, without the need for consent from the first wife.
timing of the first birth, but it delayed the occurrence of the second and third births. Women who choose to have fewer children can benefit from delaying marriage and are therefore more likely to stay in school longer (Salehi-Isfahani, 2011). Salehi-Isfahani (2011) demonstrates that the impact of the rural family planning program in Iran appears to have gone beyond fertility reduction, and helped increase rural women's literacy rates. Thus, delayed marriage clearly has positive effects such as increased opportunity for accumulation of human capital among women. Policy should ensure above all else that all rural areas have equal access to family planning programs and educational facilities.
Chapter 4

The Institutions of Marriage and Divorce in Iran

4.1 Introduction

Marriage is an institution where the laws governing its formation and termination directly influence the behavior of its parties. Making laws more favorable for one spouse affects decision-making behaviors on pre-marital investments, the timing of marriage, and resource allocations within marriage. Consequently, they alter the terms of marital bargaining and alter the balance of each of the parties’ net gain from marriage.

Specifically for women, Iran’s family laws are unfavorable and they have created a different environment under which Iranian women make decisions on family formation and intra-household marital investments. Within the marriage dyad, husbands are empowered to end their marriages without stating any reason, while women must evidence grounds for divorce in a process that can take several years; otherwise, they need to have their husband’s consent in order to get divorce.

Asymmetric divorce rights threaten the appreciation of women’s value in marriage as they must be careful to consider investing in children’s quality (health and education). As to the value of marriage, wives are always at the risk of losing their half of the joint

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35 Also see “Encyclopedia of Women & Islamic Cultures: Family, law, and politics”, by Joseph and Najmabadi (2003) in particular the parts on Iran’s family law by Mehrangiz Kar (pages 467-469) and Homa Hoodfar (Pages 105-106).

36 Bahramitash and Kazemipour (2006) particularly, look at the relationship between Islam (Islamic family law) and the changing marital status of women in Iran.
marital investment in the children: their husband at their caprice can initiate divorce and take by default the custody of the children\textsuperscript{37}. Why invest in the children if there is a chance of having your investment taken?

Under such uneven playing condition women often seek to secure themselves in case of divorce by signing prenuptial agreements at the time of marriage. Mahrieh is one such agreement that manifest as women’s rational response to the distinct lack of protection and the risks of divorce and maltreatment. Mahrieh also increases the cost of divorce for husband and make it less likely that he will initiate divorce and could, perhaps, if he is not satisfied curtail his behavior toward a renewed future commitment to the marriage. Mahrieh parlays women’s advantage at the time of marriage; however, while this may be part of the solution, it does not solve the inherent inequality of the broader social conditions in which marriages form. In a word, asymmetric marriage and divorce laws and women’s rising expectations could clash.

Women are expecting their educations to yield greater benefits in terms of marital bargaining power within marriage, but, after marrying, unfavorable laws dictate different conditions to them. The laws of antiquity are incommensurable with women’s rising expectations. The laws have tried to undermine women’s newfound status by imposing caps on Mahrieh and by imposing a quota on the number of women that can matriculate into the universities. But women have outnumbered men in the entering classes of universities two to one for the last several years (Salehi-Isfahani, 2008). They are now scoring higher in Mathematics and Science\textsuperscript{38} when compared to boys (Salehi-Isfahani et al., 2011). The clash has more to do with religious laws entrenchment in Iran’s secular society than it does the emergence of women’s social mobility.

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{37} Based on Islamic Family law, a mother has custody of her daughter until the age of seven and of her son until the age of two; after that age, the right of custody passes to the father (Article 1170 of Civil Code).
\item \textsuperscript{38} Students scores from tests administered by the international consortium Trends in Mathematics and Science Study (TIMSS).
\end{itemize}
\end{footnotesize}
Despite the subjection of marriage and divorce to Sharia or Islamic law, there have been subtle efforts to adjust the legal structure within which marriages form over the past decades in Iran. Starting with the Marriage Act of 1931, followed by the Family Protection Law of 1967 (amended in 1975), Iran’s family law in subjects related to marriage and divorce was shifting toward women’s equal rights until after the Revolution of 1979 when the revolutionary government declared the Family Protection Law of 1967 to be non-Islamic. Then, some years later in 1986, citing the Marriage Act of 1931 as precedent, the Post-Revolutionary Family Protection Law was reinstated. Once again, women were subject to unequal conditions with respect to divorce. Mahrieh has been widely recognized as a rational response of women against these unequal divorce rights since the reinstatement happened.

Sharia has been the dominant guideline for all branches of law including marriage and divorce laws in Iran for the past decades in spite of attempts to amend it in favor of women. The failures come from the desire to keep the religion core values intact and this includes pre-determined social roles for women. Unlike civil law, Sharia is not a formally codified and written law. Sharia laws come from two sacred manuscripts: Quran and Sunnah (Hadith). For those unfamiliar with Sunnah, it is a manuscript containing the sayings of Prophet Mohammed. Instead of precedents and coded rules, Sharia relies on Islamic religious scholars for “interpretation”; the subsequent drift in ambiguity opens space of play where the laws can be used in whatever manner is politically expedient.

Of course for its usefulness it is a bureaucratic mess. The Iranian government has in the past tried to clarify the ambiguity of Sharia by passing a law—vahdat-i-raviye—to unify the different interpretations.

Besides, even if the rules of Sharia were all properly codified and written, there is still room for vagueness arising from the informalities, i.e. inconsistent enforcement of the laws. An example we will discuss in more details later relates to the subjective and undefined enforcement of “adam-e-tamkin,” wifely insubordination, that when invoked nullifies the legal credibility of the prenuptial agreement that would otherwise have granted the right of initiating divorce to wife. These rules act as a de facto trap for women, many of whom are unaware of its existence.
Sharia is open to interpretation however, it follows very ideologically consistent hermeneutic. The laws fail to adapt to modernity. Women’s role in society is not fixed, but yet these laws insist they are. These laws should consider the needs of highly educated Iranian women that now have many other opportunities outside the marriage insofar as they should be written to compensate and support them in their decisions.

That the laws in Western countries change with the changing roles of the family members is an enviable trait of Western society and one not found in Iran. Divorce laws define what rights and obligations each spouse owes the other and are contingent on the investments made during the marriage. Meanwhile in Muslim marriage contracts, all the spousal rights and obligations are determined by law at the time of marriage. Such predetermined responsibilities may disincentivize marriage\(^\text{39}\). The strange paradox is the marriage laws are an anathema to marriage.

Developments in Western societies’ divorce laws aver the fact that the laws should change alongside society. In most western countries, the fault-base divorce laws were modified in favor of unilateral divorce right, known as “no-fault” divorce law, where wife and husband have equal grounds for initiating divorce procedures. Many studies examine these divorce law reforms and found their impact on the following societal factors to be beneficent: divorce rates\(^\text{40}\) (Friedberg, 1998; Allen, 2002; Fella et al., 2004; Wolfers, 2005), family formation (Rasul, 2006; Alesina and Giuliano, 2007; Drewianka, 2008), child welfare (Johnson and Mazingo, 2000; Gruber, 2004; Brown et al., 2011), violence (Brinig and Crafton, 1994; Stevenson and Wolfers, 2003), and women’s participation in the labor force (Gray, 1998; Grossbard-Shechtman and Neuman, 1998; Chiappori et al., 2002; Stevenson, 2007; Sebastian, 2011), where (Sebastian, 2011) is a case study of Egyptian women and (Grossbard-Shechtman and Neuman, 1998), a case study of Muslim women.

\(^\text{39}\) This may be in opposition to the channeling function of the family law (Schneider).

\(^\text{40}\) Application of the Coase theorem to marital relations forms the foundations of these discussions. Based on Coase theorem, regardless of law, when parties are free to bargain, only efficient divorces occur. So, the theorem predicts that changes in law should have no effect on divorce rate.
Particularly interesting to the discussion is the notion of alimony\(^4\) and post-divorce property divisions in western countries. Even though the days of long-term alimony are slowly disappearing in the Western world as a result of newly introduced “no-fault” divorce laws (Davis et al., 1985; Mechoulan, 2005), the laws dictate a 50-50 division of properties accumulated during the marriage between couples. Whereas, according to the Islamic laws, there is no provision regarding property division between couples. Couples are only allowed to negotiate on this matter at the time of marriage by adding a stipulation in the prenuptial agreement. And divorced women are only entitled to receive alimony for a limited time, what is called the “idda” or “waiting time,” only if they have not initiated the divorce or found to be at fault. As we can see the role of Mahrieh becomes all the more crucial.

We have permanent and temporary marriage to also consider, that is, in Islamic family law; only a man can contract more than one marriage at a time. Up to four permanent wives are allowed in all schools of Islamic law and as many temporary wives as he wants\(^4\) are allowed in ‘Ithna Ashari” Islamic school, which is the dominate school in Iran. Even though the surveys observe that there are very few households with two or more wives, this option in favor of men opens a new dimension to their bargaining power within the household.

In this chapter, I first provide the legal history of Family law regarding marriage and divorce in Iran before discussing how changes in the legal structure of marriage and divorce alter the terms of the marital bargaining and force women to circumvent inequitable Iranian laws to improve their position. Then, I present a model of how Mahrieh could improve a woman’s position within the household in light of the unequal divorce rights favoring men. As women can not easily opt out of marriage, they obtain a conditional and legally enforceable bond known as Mahrieh from their husbands to secure themselves against the risks of divorce and maltreatment.


4.2 Marriage and divorce laws: a legal history

In past decades, there have been significant changes in the Islamic family law in Iran in subjects related to marriage and divorce. The reforms are a result of ongoing debates between two parties: on one side, religious leaders tried to confine these reforms to Sharia (Islamic laws); and on the other side, legal activists push for progressive changes to empower women against the rhetoric of polygamy and unilateral divorce rights of men. Hence, the emphasis over the last decades has been on, as present in this chapter, imposing restrictions on the rights of men to unconditionally divorce their wives and on contract polygamous marriages.

In the section to come, I briefly review remarks on the evolution of marriage and divorce laws in matters relating to polygamy and unilateral divorce right of men. Despite the subjection of marriage and divorce to Sharia, there have been three subtle efforts to adjust the legal structure within which marriages form over the past decades in Iran: Marriage Act of 1931, followed by the 1967 Family Protection law (amended in 1975), and last of all post-revolutionary Family Protection law of 1986.

4.2.1 Marriage and divorce laws before the Marriage Act of 1931

Until the early decades of this century, unwritten rules of Sharia were dominant in all branches of law including marriage and divorce laws. Sharia solely relied on Islamic religious scholars for “interpretation”. Despite different interpretations of Sharia, the message of all in matters relating to polygamy and divorce rights were the same: men have the right to unconditionally divorce their wives and contract polygamous marriages.

Under Sharia men have unilateral and unconditional divorce rights. That is, a husband may divorce his wife at any time he wishes without cause, judicial oversight or even informing his wife. Women could only initiate divorce on limited grounds such as husband’s impotence or insanity. Although no pre-nuptial conditions (aqd-khareje-lazem⁴³) were being printed in the marriage contracts in the time before 1931, there was a section titled “aqd-khareje-lazem” where women could include their pre-nuptial

⁴³Any additional contract outside the original marriage contract
conditions. This confirms that women were allowed to stipulate conditions at the time of marriage upon their husband’s agreement. The matter of including stipulations into the marriage contracts was one of the controversial issues between different Islamic schools at the time. The Jafari School of Sharia (referred to as “Ithna ashari” in Arabic), which is the predominant school in Iran, is among those permitting women to stipulate conditions. Therefore, it was completely women’s choice to ask for the conditions at the time of marriage. It is not clear why only few women were adding the conditions into their marriage contracts. It could be the fear of losing their marriage opportunity relative to the majority of women out there who were willing to make contract without mentioning any conditions or it could simply be result of their unawareness of such opportunity.

Polygamy, the other central issue in the debates, is directly addressed in the Quran. There were no restrictions on men regarding polygamous marriages under Sharia. Men can contract more than one marriage at a time. Up to four permanent wives are allowed in all schools of Islamic law and as many temporary wives as he wants are allowed in “Ithna Ashari” school of Sharia, which is the dominate school in Iran.

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44 See the section titled “aqd- khareje- lazem” in a sample of 1924 marriage contract in the appendix.

45 The discussion on this issue comes from the different understandings of two seemingly contradictory hadith:

- "Kullu shartin laisa fiy kitaabi Allahi fahuwa baatil wa in kaana mi'atu shartin."
  “Any condition which is not in Allah's Laws is invalid even if there were a hundred such conditions.” Sahih Al Bukhari, Vol 3, BK 50. Hadith 889

- "Al-Muslimoon 'alaa shuroothim
  "Muslims are bound by their stipulations " Abu Da’ud, No: 3120
  They also cite the following extension to this hadith:

- “illa shartin ahalla haraaman au harrama halaalan."
  “except for a stipulation which makes the unlawful lawful or makes the lawful unlawful”

46 Quran, 4:3 and 4:129.
In brief, until 1927 uncodified Sharia was governing the judicial system. In 1927, as a result of Reza Shah’s attempt to modernize Iran and to create a totally secular judiciary system, Sharia law was codified and the initial draft of the Civil Code was introduced. Whereas, in most areas of law the Civil Code shows the influence of European legal codes, in matters related to marriage and divorce is only an overview of Sharia. Indeed, the reforms in marriage and divorce laws were introduced in 1931 under a separate legislation known as the “Marriage Act.”

4.2.2 The Marriage Act of 1931

The Marriage Act of 1931 attempted to temper the unilateral divorce right of men by making women aware of their legal right to stipulate conditions to initiate divorce (article 1119 of the Civil Code). For this matter, possible examples of grounds for divorce—such as husband’s second marriage, husband’s desertion of marital life, husband’s failure to pay her the maintenance (nafaqhe), husband’s ill-treatment, or affliction by a disease that could endanger her health—were printed in the marriage contracts and it was a woman’s decision to add her preferred conditions and to ask for her husband’s agreement. Mir-Hosseini (1993) believes that this attempt has extended the grounds on which women could initiate divorce proceedings; this argument is true in a

47 Article 1133 of Civil Code

48 Insertion of stipulations at the time of marriage is permissible under Sharia.

Article 1119: men and women can add any condition to marriage contract unless it is not violating the essence of the law

49 See the section titled “aqd-khareje-lazem” in a sample of 1932 marriage contract in the appendix.

50 There is no direct reference to polygamy in Civil Code.

51 Article 1111 of Civil Code

52 Article 1130, note 4 of Civil Code

53 Article 1130, note 5 of Civil Code
sense that the grounds are now explicitly addressed in the marriage contracts and more women would become aware of them. We should admit, however, that the right of inserting conditions into the contracts is not something new, and before women were always able to add conditions under Sharia. In my opinion, the more fundamental reform in this period was to print the pre-nuptial conditions in the marriage contracts. The impact of such reform in awakening women to their rights could be far more significant than adding to the grounds in a way that no one becomes aware of it.

4.2.3 The Family Protection Law (FPL) of 1967

In 1967, Parliament reformed the family law and the Family Protection Law (FPL) was introduced. The new law imposed three major restrictions on the unilateral divorce right of men. I elaborate on each in the following paragraphs.

First, the new law ended men’s veto power in divorce. Under the Family Protection Law, all divorces were decided by Family Protection Courts which issued the permits for divorce registration known as “Certificate of Impossible Reconciliation.” In contrast to the previous marriage contracts, no divorce could be registered without the consent of both parties or, in the absence of the court certificate.

Second, under this law all the grounds for which women could initiate divorce\(^{54}\) such as husband’s failure to support her, second marriage, or failure to treat co-wives equally\(^{55}\) were automatically printed as stipulations in all marriage contracts and were effective regardless of whether a man agreed to them or not. Including the conditions in the marriage contracts can be considered as a quiet movement to empower women of all social classes. Previously, women were allowed to add pre-nuptial agreements; however, a very small minority of upper and educated classes had stipulations added to their marriage contracts.

\(^{54}\) See the section titled “aqd-khareje-lazem” in a sample of 1977 marriage contract in the appendix.

\(^{55}\) Article 8 of FPL; refer to the sample of 1977 marriage contract in the appendix for more detailed list of conditions.
Finally, for the first time the 1967 law abolished men’s unilateral divorce right by limiting the grounds on which men could divorce their wives. In other words, like women, men were also required to provide evidence that their wives have committed an act incompatible to the marriage (i.e., fault). Many scholars see this as a fundamental reform which put women on equal footing with their husbands (Mir-Hosseini, 1993). However, a closer look at the contents of these conditions complicates this argument. Under the third stipulation, a man could obtain court’s divorce certificate simply by showing his wife’s insubordination (i.e., Nushuz). Nushuz, or adam-i-tamkin, basically means curtailing or refusing one's marital obligation, and can be on the part of the wife, the husband or both. A woman's refusal to oblige her husband's wishes (primarily sexual), and a man's denial of paying maintenance (nafaqeh) are both considered as Nushuz. Traditionally, Nushuz has come to be associated with a woman disobeying her husband which could include whatever he wishes. Nushuz is an extremely subjective matter and is totally dependent on a man's caprice and the interpretation of what Nushuz can be and the burden of proof is on women (Haeri, 1990). Indeed, men would be able to maneuver in making the judge believe that their wives do not obey them and use this as an excuse to divorce their wives. It was far beyond my expectation to see such a subjective issue in a so-called “reformed” family law which has long been recognized as a supportive law for women.

Most importantly, Nushuz condition affects post marriage negotiations between couples and shifts the bargaining power to husbands. Domestic violence could be a possible consequence of this condition. A discontented husband may start to make life miserable for his wife. Such circumstances help him bring up the issue of “adam-e-

56 The 1967 law in this respect is comparable with “fault-based” divorce law in Western societies.

57 Article 8 of FPL; refer to the appendix for a more detailed list of conditions.

58 Nushuz is also mentioned in the Quran 4:34 and 2:223.

59 See the last section of this chapter for more detail on this topic.

60 I could not find any specific penalty by law for domestic violence.
tamkin” to have enough grounds for initiating divorce or make his wife file for a divorce process (Article 1130, note 4), in which case he not only does not pay Mahrieh, but also receives some amount as the separation occurs under “khul” divorce⁶¹.

Besides modifications to the unilateral divorce right of men, the Family Protection Law of 1967 attempted to impose more restrictions upon polygamous marriages. As mentioned earlier, “husband’s second marriage” condition is among the grounds printed in the marriage contracts after 1967 under which a woman can initiate divorce. The right of initiating divorce upon husband’s second marriage was given to all women. Surprisingly, the condition was written as a general statement titled “husband’s second marriage” and not only limited to a specific case of husband’s second marriage without his wife’s consent.

The final reform of the Family Protection Law happened in 1975. This law brought further modifications in three areas. First, it introduced alimony, the amount of maintenance a man needs to pay monthly to his wife after divorce. Establishing alimony was a further step toward limiting the unilateral divorce right of men by increasing the financial cost of divorce for them. Under the 1975 law, it was the court’s responsibility to assign alimony payment to divorced wife as long as she remains unmarried. The amount was determined based on the husband’s earnings and the wife’s needs⁶². After the 1979 revolution, the reform was abandoned and a divorced woman is only entitled to alimony for a limited period, referred to as “idda”⁶³, only if her divorce is revocable (article 1148)⁶⁴. Second, the 1975 law raised the legal age of marriage from fifteen to eighteen

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⁶¹ For more information on “khul” divorce see “Divorce in Contemporary Iran: A Male Prerogative in Self-Will” by Haeri (1990), (p.61).

⁶² Article 11 of the 1975 FPL

⁶³ “idda’ is the waiting time for divorced women before being able to remarry. For non-pregnant woman is three menstrual cycles (article 1151) and for pregnant one is until delivery of the child (article 1153) and for the temporary wife is two menstrual cycles (article 1152).

⁶⁴ For more information on settings of alimony for different types of divorce see “Divorce in Contemporary Iran: A Male Prerogative in Self-Will” by Haeri (1990), (p.64).
for women\textsuperscript{65}, and from eighteen to twenty for men. Before, the marriage Act of 1931 made some modifications in Sharia on this matter. According to Sharia, the legal age of marriage is nine for women and thirteen for men\textsuperscript{66}. The 1931 law raised the legal ages to fifteen and eighteen for women and men and prohibited the marriage of women under thirteen while requiring court permission for the marriage of those under fifteen. The last modification of the 1975 law happened in the area of child custody. Based on the Marriage Act of 1931, a mother has custody of her daughter until the age of seven and of her son until the age of two; after that age, the right of custody passes to father (article 1170). In the case of the death of either parent, the right passes to the one who is still alive (article 1171). Under the new law, if couples failed to reach an agreement regarding the custody and maintenance of their children, the court will assign the custody to whom it considered most suitable.

4.2.4 The Post-Revolutionary Family Protection Law

Soon after the Revolution of 1979, the revolutionary government declared the Family Protection Law of 1967 (amended in 1975) to be non-Islamic and announced its suspension and the reinstitution of Sharia. However, it took a couple of years before a new Family Protection law passed in 1986. The new law follows the same set up as the 1927 Civil Code with a short addendum known as “Special Civil Court Legislation (SCCL)” which consists of 19 articles (12 articles on marriage and divorce) and 2 notes.

Once again, under the new Family Protection law the husband has the unilateral right to divorce his wife (article 1133). The new law made a number of changes to the modifications of the 1967 Family Protection law. As will be explained further below, the changes appeared to be in both directions of limiting and improving the unilateral divorce right of men. First, unlike the 1967 FPL, there is no veto power for men in divorce under

\textsuperscript{65} I was not able to find further information about the marriage requirements for the underage girls in the 1975 law. It has been appeared in the post-revolutionary Family Protection Law that underage girls could marry with the permission of the court.

\textsuperscript{66} Quran 4:6.
the 1986 law. The husband requires obtaining the court order to register divorce in the absence of his wife’s consent. In such a case, the court is referring the case for arbitration\textsuperscript{67}, which can only delay the divorce, but \textit{not prevent} it. Second, unlike the Family Protection law of 1967, the 1986 law returned to the unilateral (i.e. no-fault based) divorce right for men by dropping the printed grounds for men to initiate divorce. The grounds on which women can initiate divorce\textsuperscript{68} are quite similar to the ones of the 1967 FPL with three major differences. First, new marriage contracts give men the option of choosing the pre-nuptial conditions by signing under each preferred ones. Conditions with the signature of both husband and wife are legally binding. Second, the two conditions of divorce under the mutual consent and divorce in case of wife’s insubordination was being removed from the pre-nuptial conditions of the post-revolutionary marriage contracts. Finally, for the first time, a stipulation regarding the property divisions after the divorce inserted into the marriage contracts that it becomes effective upon signature by the husband. This condition requires husband to pay his wife, upon divorce, up to half of the wealth he has acquired during that marriage, provided that divorce has not been initiated or caused by wife’s fault. Including the property division stipulation is a move toward restricting the unilateral divorce right of men by making divorce more costly for them.

Despite the changes that occurred in the unilateral divorce rights of men, the post-revolutionary Family Protection law was following Sharia in areas related to polygamous marriages until 1999 (Osanloo, 2009), when once again the stipulate under which women can initiate in cases of “husband’s second marriage without their consent” or “his failure to treat co-wives equally” added into the marriage contracts. This condition has now been printed in all marriage contracts, however it becomes legally binding only if husband

\textsuperscript{67} Article 3 of Civil Code and note 2 of SCCL. I was not able to find further information about the exact date this law was passed. Osanloo (2009) in “The Politics of Women’s rights in Iran,” p.219, note11 mentions 1992 as the date of passing this law.

\textsuperscript{68} See the section titled “aqd-khareje-lazem” in a sample of 2002 marriage contract in the appendix.
signs the condition at the time of marriage. Recently, parliament took an unexpected action and repealed the article 23 of the proposed Family Protection Bill of 2007 which allowed men to marry without the consent of their first wife. Under this act all women have now equal chance to initiate divorce in case of husband’s second marriage without their consent and this right does not only include those negotiating with their husbands about it at the time of marriage.

The changes in divorce and marriage laws over time impact the household resource allocation decisions. In the next section, I will demonstrate how the shifts from unilateral divorce rights in favor of both men and women to the rights only in favor of men influence the bargaining powers of each spouse and consequently the gains each receives within marriage.

4.3 Divorce laws, bargaining power, and distribution of marital gains

To open the discussion we need to distinguish between two different economic approaches to the family: (1) Unitary model vs. (2) marital bargaining model\textsuperscript{69}. The former of the two models can only provide a limited picture of the effect of divorce laws on the marital bargaining powers and distributions within household and for this reason the analyses in the chapter are based on the latter models. Below is the explanation of the Unitary model and its limitations followed shortly thereafter by the bargaining models.

Family provides the environment in which non-market transactions between wife and husband takes place. Parents spend time within their household. They invest in children, which is investment often referred to as the household’s “public good,” and other household production goods and services that contribute to the wellbeing of all household members. The relative bargaining power and contributions that husband and wife make to a joint family production, to a large extent, influence the wellbeing of parents and children. The traditional unitary models of household (e.g. Becker’s altruist model (1974, 69 For more details see “A Survey of Theories of the Family” by Bergstrom (1997) and “Family Economics” by Browning et al. (2011).
and Samuelson’s Consensus model (1956)) ignore distributions within the household and treat a married couple with children as a single decision-making unit with a single family preference that includes consumption and leisure time of every family member.

Bargaining (non-unitary) models investigate resource distributions within the household, and track the wellbeing of individual family members. The bargaining approach, pioneered by Manser and Brown (1980) and McElroy and Horney (1981), was to model family behavior through a cooperative bargaining game. Lundberg and Pollak (1994) extend previously described cooperative bargaining models to a noncooperative bargaining model. Chiappori (1988, 1992) introduces a collective approach of household decision making.

What these three approaches have in common is that they assign preferences to individual family members, rather than a single utility function to the family as a whole. The models will be discussed in some detail in the following section.

The bargaining approaches to the family focus the analysis on the incentives informing individual decision-making. It traces the formation and dissolution of intra-household relationships and investments within marriage by giving identity to individual decision makers within families.

Opportunities outside the marriage can antagonize the relationships within the marriage by adding a narrative component to the incentives governing marital decisions; couples either decide to remain married and invest in their marriage or they get divorced in response to outside options as they arise. Whether individuals’ values rise or fall depend on their future gains from past investments within the marriage and on the gains potentiated by the conditions outside of the marriage whose value, in turn, is determined by the current status of the (re)marriage market—a mosaic of divorce laws and social norms. In other words, the outside options play an important role in bargaining models and open the discussion to the impact of the "external" factors such as (re)marriage market conditions in creating unequal outcomes for women and men. One of the main contentions in this section is that the bargaining models ignores the role of internal expectations placed on marriage by each spouse and solely explains the distribution of marital gains through the outside options available to the couples.
Societies are different in terms of the institutions governing their marriage market. Marriage and divorce laws along with social norms of the society affect outside opportunities of each spouse and consequently influence their bargaining powers in distributing the resources within marriage.

In this section, I define societies in terms of the divorce laws governing their marriage market and then assign a relevant bargaining model best suited to each society to examine how divorce laws and (re)marriage market conditions influence the resource allocations within the household.

Societies are categorized into the following four cases. I start with an examination of household decisions in an “ideal” society where equal divorce rights—unilateral “no-fault” divorce rights in favor of both men and women—and perfectly equal conditions for divorced men and women in remarriage market describe the market. I will relax these ideals one by one and move toward a society with unequal divorce rights and unequal remarriage market opportunities, in favor of men, which is more comparable to Iran. The models present in the following section give insights on how women make formation and dissolution decisions under different (re)marriage markets conditions.

### 4.3.1 Cooperative bargaining model: equal divorce rights and equal remarriage market conditions

I introduce a cooperative bargaining model of marriage initially developed by Manser and Brown (1980) and McElroy and Horney (1981) to model household decisions. I apply this model to understand household decisions in an ideal society with equal divorce rights and perfectly equal conditions for divorced men and women in remarriage market. A typical cooperative bargaining model of marriage begins with a family of two: a husband, $h$, and a wife, $w$\(^{70}\). Each partner has a marital utility function that depends on his or her consumption of private goods and household public goods jointly consumed by the husband and wife: $U^h(q^h, Q)$ for the husband and $U^w(q^w, Q)$ for the wife. Where $q^h$ and $q^w$ are private goods consumed by the husband and wife, and $Q$ is the household public good

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\(^{70}\) For simplicity we assume individuals are homogenous in their characteristics.
(i.e. a public good is of the type whereby one partner’s consumption does not reduce the amount available to the other [children]). Therefore, the model assumes that the interdependence within the marriage acts only through consumption of the public goods. The couple plays a cooperative bargaining game with a Nash bargaining solution\textsuperscript{71}, the equilibrium values of $q^h$, $q^w$ and $Q$ are those that maximize a “social welfare function”\textsuperscript{72} of the form:

$$N = [U^h(q^h, Q) - TP^h(I^h, I^w, P^1; \alpha^h)][U^w(q^w, Q) - TP^w(I^h, I^w, P^1; \alpha^w)]$$ \textsuperscript{3}

Each partner’s gain from cooperation is defined by the difference between his/her utility at the chosen cooperative outcome and his/her utility at divorce-threat point\textsuperscript{73}, representing the maximum level of utility each spouse would attain outside the relationship. In other words, the solution of this maximization must provide each spouse with a level of utility at least as great as the one attainable outside of the marriage. Therefore, to specify the marital outcome we need to understand how the total gains will be distributed between spouses. In particular, what determines spouses’ bargaining positions within household? Cooperative bargaining models give an important role to the “threat point” in determining one’s bargaining power.

The threat point (indirect utility), $TP$, for each spouse is a function of the exogenous nonmarket incomes of husband and wife ($I^h, I^w$), price of the public good (I assume that the prices of private goods are equal and normalize them to one), and a vector of shift

\textsuperscript{71} McElroy and Horney consider only the Nash bargaining solution; Manser and Brown (1980) investigate the Nash solution along with two other solutions: the Kalai-Smorodinsky solution and a "dictatorial" outcome.

\textsuperscript{72} Also known as “utility-gain product function”

\textsuperscript{73} Also known as “reservation point” and “fallback position”
parameters that reflect opportunities outside the marriage\textsuperscript{74} ($\alpha$) such as remarriage market conditions (e.g. symmetric/asymmetric virginity premiums, sex ratio, divorce laws), income available to divorced women and men (transfers between divorced couple such as Mahrieh, alimony). The shift parameters assume to be alike for men and women in this section. The role of the shift parameters will be discussed in more details in the following section under a society with unequal remarriage market.

Figure 16 depicts the threat points ($TP^h, TP^w$), the Nash bargaining solution ($E$), the utility-possibility frontier ($AB$), and a “social welfare function” in the utility space\textsuperscript{75}. The utility received by husband or wife in the Nash bargaining solution depends on the threat points; that is the higher one’s utility at the threat point, the higher one’s utility in the Nash bargaining solution. As a result, household demands not only depend on prices of private and public goods and total family income but also on determinants of the threat points.

To derive the demand functions for the public and private goods, we maximize the Nash social welfare function (Equation 3); subject to the utility-possibility frontier\textsuperscript{76},

$$F(U^w, U^h) \leq 0$$ \hfill (4)

This yields the demand functions

$$q^i = g^q(P^i, I^i, I^w; \alpha^{i}), \quad i = h, w$$ \hfill (5)

\textsuperscript{74} Also known as “extrahousehold environmental parameters”, or EEP’s, in McElroy’s (1990) terminology.

\textsuperscript{75} Nash (1950) shows that a set of four axioms, including Pareto Optimality, ensures that the solution lies on the utility-possibility frontier. Therefore, Nash shows that there exists a unique bargaining solution.

\textsuperscript{76} Changes in prices or in family income (i.e. budget constraint) can cause the utility possibility frontier to shift. For more details see “A Survey of theories of the Family” by Bergstrom (1997).
The household demands that result from divorce-threat marital bargaining will depend on incomes received by husband and wife separately because incomes affect not only the feasible set but also the threat point. The threat points depend on other parameters representing opportunities outside marriage; so these parameters will also enter the demand functions of husband and wife. Equal opportunities outside marriage for men and women resulting in identical $\alpha_i$'s entering into partners’ demand functions.

Figure 16: Pareto frontier in marriage (CD) and divorce threat points (case 1).

4.3.2 **Cooperative bargaining model: equal divorce rights and unequal conditions in remarriage market**

The above argument pictured an “ideal” society where equal divorce rights—unilateral “no-fault” divorce rights in favor of both men and women—and perfectly equal conditions for divorced men and women in remarriage market describe the market. In this section, I relax the unrealistic assumption that men and women have equal remarriage market opportunities. In particular, the asymmetric virginity premium is one of the main reasons causing inequality in remarriage market. This asymmetry lowers marriage market opportunities upon divorce for women. Evidence suggest that asymmetric virginity
premiums are not only observed in less developed, traditional societies, but also the asymmetry still exists in developed societies such as the U.S. and China (Chen 2004).

I apply the cooperative bargaining model introduced earlier to understand the household’s decisions regarding resource allocations within marriage in a society facing equal divorce rights but unequal conditions for divorced men and women in remarriage market. As mentioned in the previous section, in a cooperative bargaining model bargaining outcomes and relative well-being of men and women within marriage depend on the threat points, i.e. available market or social alternatives outside marriage. Unequal conditions for divorced men and women in remarriage market shift the threat points. For instance, asymmetric remarriage opportunities in favor of men deteriorate the wife’s threat point (Figure 17). As a result, the demand functions of private and public goods for husband and wife that are function of the threat point, i.e. shift parameter, will be affected. Replacing the demand functions into the marital utility functions will result in a higher utility (gain) from marriage for the husband and a lower utility for the wife. Therefore, a divorce-threat bargaining model predicts that policies seeking to improve the condition of divorced women will shift resources within marriage toward wives (Pollak, 2003). In other words, improving wives’ outside options reduces the cost of ending marriage for them and, in turn, increases the scope for receiving a more favorable “deal” within the relationship.

Figure 17: Pareto frontier in marriage (CD) and divorce threat points (case 2).
4.3.3 Noncooperative bargaining model: impossibility of divorce for both men and women

The noncooperative bargaining model introduced by Lundberg and Pollak (1993), as an alternative to the cooperative bargaining model, is a relevant bargaining model for the cases that divorce is impossible or prohibitively expensive.

In Lundberg and Pollak model noncooperative, voluntary contribution equilibrium will become the alternative to divorce as a specification of the threat point. In other words, they replace an “external” threat point (i.e. divorce) with an “internal” one, as divorce may not be a credible threat for partners in some cases. In contrast to the cooperative models, Lundberg and Pollak (1994) model opens the discussion to the possibility of inefficient intra-household behavior. The absence of a pooled budget constraint in noncooperative models sets them apart from cooperative models. Each individual in the household maximizes his/her own utility subject to his/her budget constraint, taking as given the decisions of other individuals within the household.

Cooperative and noncooperative models will result in the same outcomes if all goods are private goods and there are no externalities (Chiappori and Donni, 2009). However, if there are public goods and/or externalities, noncooperative models will result in outcomes that may not be Pareto efficient. Noncooperative models can have multiple equilibria, while only some of the equilibriums may be Pareto efficient. In particular, Lundberg and Pollak (1994) discuss a basic noncooperative model of distribution within marriage, known as the “separate spheres” bargaining model, in which traditional gender specializations can play a role in which equilibrium is realized.

Specifically, Lundberg and Pollak explain that in cases where divorce (exit) option is considerably costly or can be dominated by sharing public goods within an intact but noncooperative marriage, the voluntary contribution equilibrium in the family, gender specialization, offers a more credible alternative to divorce as the threat point. The voluntary contribution equilibrium generates corner solutions for the noncooperative bargaining model, and therefore the equilibrium distribution may depend not only on total family resources, but it may also be affected by who controls those resources.

Lundberg and Pollak (1993, 1996) establish a simple Cournot equilibrium in the provision of public goods by husband and wife as a solution to the separate spheres
bargaining model. The model assumes that the responsibility of the husband and wife in certain activities, i.e. the husband’s and wife’s traditional spheres, is determined by socially accepted gender roles and is completely independent of preference or productivity differences between husband and wife. Household separate spheres generate corner solutions in the provision of public goods. To illustrate corner solutions, they assume that the public good, $Q^h$, falls within the husband's traditional sphere so that, in the case of no cooperative agreement, the husband decides unilaterally on the level of $Q^h$ consumed by household. In the same way, $Q^w$ falls within the wife's sphere. In a noncooperative marriage, husband and wife simultaneously choose the levels of their contributions: $Q^h$ and $Q^w$. The husband chooses $q^h$ and to maximize his utility, $U(q^h, Q^h, Q^w)$, subject to his budget constraint $q^h + P^h Q^h = I^h$, where $Q^w$ is the level of public good chosen by the wife. The decision-making process directs us to a set of “reaction functions” or demand functions:

$$q^h = f^{qh}(P^h, I^h, Q^w),$$
$$Q^h = f^{Qh}(P^h, I^h, Q^w).$$

Correspondingly, the demand functions of the wife for private and public goods $(q^w, Q^w)$ will depend on $Q^h$. The Cournot equilibrium occurs at the intersection of the two reaction functions, i.e. public good demand functions, of the husband and wife. At the end of the argument, Lunberg and Pollak show how the results of this model could be modified when cash transfers and binding pre-nuptial agreements between husband and wife at the time of marriage are allowed\textsuperscript{77}.

\textsuperscript{77} See section IV of (Lundberg and Pollak, 1993) for more details on marriage markets with binding agreements. Also see (Lundberg and Pollak, 2003) for an implication of the model in location decisions of two-earner couples.
4.3.4 Quasi-dictatorial model: unequal divorce rights and unequal remarriage market conditions in favor of men

Iran’s family laws are unfavorable to women’s right and they have created a different environment under which Iranian women make decisions on family formation and intra-household marital investments. In particular, two facts make Iran’s marriage market different than the mentioned societies.

First, based on Iran’s family law husbands are empowered to end their marriages without stating any reason (i.e. “no-fault” divorce right), while women must evidence grounds for divorce in a process that can take several years; otherwise, they need to have their husband’s consent in order to get the divorce.

Second, traditional premium placed on female virginity at marriage still has high values to Iranian people and makes it more complicated for a divorced woman to remarry. Particularly, the asymmetric virginity premium is one of the main reasons causing inequality in remarriage market. This asymmetry lowers marriage market opportunities upon divorce for women and lowers the maximum level of utility (i.e. the threat point) a woman expects to receive upon divorce.

Asymmetric divorce rights threaten the credibility of the wife’s threat point, as she can only initiate divorce on limited grounds. The limited power of wife to exit may influence husband’s behavior and encourage him to show dictatorial behavior within marriage. In such case the utility of the husband, identifies as the “dictator”, becomes the family’s social welfare.

Manser and Brown (1980) introduce a dictatorial marriage in which one partner, more often husband, has dictatorial power to determine the gains each partner obtains from the marriage, and the dictator’s strategy is to offer the other partner just sufficient gain to induce her to stay in marriage. Therefore, the problem for dictator is to maximize:

\[ U^h(q^h, Q) \]

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78 Pollak (1988) identifies altruist in Becker’s model as the “husband-father-dictator-patriarch”.
Subject to
\[ q^h + P^iQ \leq I^h \]
\[ U^W(q^W, Q^W) - TP^w(I^h, I^w, P^1, \alpha^w) \geq 0 \]

Dictator is maximizing his own utility function subject to his budget constraint and also to a constraint that guarantees a minimally acceptance level of satisfaction to the other partner. For given values of the exogenous variables (and shift parameter), \( TP^w \) is determined and therefore there exist unique \( q^h \) and \( Q \) which maximize dictator’s utility.

Dictator could extract all of the gains from marriage by offering his wife a utility that is just equal to her utility from being divorced. Less outside options and low threat point, i.e. low expected utility from outside options, for wife make the last constraints less binding for the husband.

A wife’s expected utility from outside marriage options influences the husband’s behavior and what he offers to her within marriage. Such connection opens the discussion to the role and importance of Mahrieh in Iran’s marriage market. In what follows, I first provide an introduction on the institution of Mahrieh. Then, I present the role of Mahrieh and how it improves women’s position within the household in light of the unequal divorce rights and unequal remarriage market conditions favoring men under the mentioned quasi-dictatorial model.

4.4 The role of Mahrieh in Iran’s marriage market

Specifically for women, Iran’s family laws are unfavorable and they have created a different environment under which Iranian women make decisions on family formation and intra-household marital investments. While husbands are empowered to end their marriages without stating any reason, women need to have their husband’s consent in order to get divorce or provide evidence on grounds for divorce in a process that can be extremely time-consuming.
Iranian family laws should be set in a way such that the values of marriage appreciate. Asymmetric divorce rights threaten women who consider investing in children’s quality as to the value of marriage. Wives are always at the risk of losing their joint marital investment: children, their husband at their caprice can initiate divorce, giving husband the custody of the children. Under such uneven playing condition women often seek to secure themselves in case of divorce by signing prenuptial agreements at the time of marriage.

Enter the Mahrieh. Mahrieh is sum of money or any other valuables determined in a prenuptial agreement that the husband gives or undertakes to give to his wife upon divorce. Long claimed as an obstacle to marriage, Mahrieh is a rational response and protection for women against Iran’s unequal divorce rights. There have been discussions in recent years on restricting and putting a ceiling on the amount of Mahrieh. Instead of even playing around with Mahrieh and seeking solutions to issues facing marriage through that, maybe it’s time to change the unilateral divorce right of men.

Mahrieh is not a dowry or bride price. Dowry (bride price) commonly transfers money from the family of the bride (groom) to that of the groom (bride). Payments take place at the time of marriage not upon divorce. Whereas Mahrieh is a conditional bond that husband promises to pay wife if he fails to fulfill the terms of the marriage contract.

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79 Based on Islamic Family law, a mother has custody of her daughter until the age of seven and of her son until the age of two; after that age, the right of custody passes to the father (Article 1170 of Civil Code).

80 The Iranian parliament recently eliminated the Article 25 of the proposed Family Protection Bill of 2007 which imposed a tax on the Mahrieh paid to the wife. Despite the rejection of this article, there were attempts to replace it with a new article to put a ceiling on Mahrieh. This article recently got approved and a ceiling equal to 110 gold coins (equal to 55,000US$, based on recent exchange rate; it takes a teacher 5 years and a minimum wage earner 10 years to accumulate this amount) has been assigned to Mahrieh.

81 Comparable to the “severance payment” in labor contracts
There is a large and growing literature in economics on the role of dowry (and bride price) in marriage market\textsuperscript{82}. The standard model of dowry (Becker, 1981) assumes that dowries (and bride prices) are used as monetary transfers to clear the marriage market. Rao (1993) explains that marriage squeeze, i.e. more marriage-age women in the marriage market than men, in societies where women have limited options outside marriage would lead to an increase in dowries (known as “dowry inflation”). Despite the vast literature on dowry transfers, there have been relatively few studies on the role of Mahrieh in marriage market, except a recent study on Bangeladesh’s marriage market by Ambrus et al. (2010). They develop a model of marriage contracts in which Mahrieh (Mehr) serves two functions: it acts as a barrier to husbands exiting marriage and also as a part of dowry\textsuperscript{83} that ex ante compensates the groom for the cost of Mahrieh that he needs to pay upon divorce. They show how dowry and, in turn, Mahrieh are changing as a response to the changes in the costs of polygamy and divorce. The practice of both dowry and Mahrieh in Bangladesh makes its case different from Iran where only Mahrieh is being practiced. There have been very few studies on the institution of Mahrieh in Iran. Most scholars working on this issue have focused on the determinants of Mahrieh. Habibi (1997) shows that higher incidence of divorce and higher social status of women\textsuperscript{84} increase the amount of Mahrieh. In this section, I specifically focus on the role of Mahrieh in Iran’s marriage market.

\textsuperscript{82} For more details see “The Economics of Dowry and Bride price”, by Anderson (2007). Also See “Why dowries?” by Botticini and Siow (2003) for a theoretical model of dowries.

\textsuperscript{83} Dowry and Mahrieh are both being practiced in Bangladesh, in contrast to Iran where only Mahrieh observes.

\textsuperscript{84} The association between the social status of women and marital transfers opens the discussion to another difference between dowry and Mahrieh. In contrast to dowry that may increase as a result of poverty, Mahrieh is higher among rich people from a high social class.
Therefore, besides the similar role of Mahrieh to that of dowry and bride price to clear the marriage market\textsuperscript{85}, Mahrieh plays two other roles in the context of Iran’s discriminatory marriage market\textsuperscript{86}. First, Mahrieh secures women financially at the time of divorce (Mir-Hosseini, 1993; Rezai-Rashti and Moghadam, 2011). In this matter, Mahrieh could act either as a barrier preventing the husband from divorcing his wife or help the wife to initiate divorce by forgiving Mahrieh (known as “Khul” divorce). Second, and the focus of this chapter, Mahrieh improves women’s bargaining position within marriage. In particular, I explain the role of Mahrieh in changing the bargaining positions of partners following the Quasi-dictatorial model.

The Quasi-dictatorial model introduced earlier can be a relevant bargaining model best suited to Iran’s society where women face with unequal divorce rights and unequal remarriage market conditions in favor of men. The model helps us understand the role of Mahrieh in influencing the bargaining positions of partners within the household. Based on quasi-dictatorial model, the dictator is maximizing his own utility function subject to his budget constraint and also to a constraint that guarantees a minimally acceptance level of satisfaction to the other partner. Outside marriage alternatives to a wife and the utility that she receives in case of divorce determine the minimal acceptance level of satisfaction to the wife. In addition, her utility gains from the outside marriage options directly depend on the channel through which marriage has been ended.

There are three ways to end a marriage, each providing different conditions for the wife after divorce, i.e. the gains they receive outside marriage. First and worst case to end a marriage is simply leaving a marriage without asking for divorce. Based on Iran’s Family law, women who opt to leave the marriage without divorce will not be entitled to

\textsuperscript{85} Marital transfers, such as dowry and Mahrieh may affect the matching equilibrium in the marriage market. For more discussions on this issue see (Anderson, 1999)

\textsuperscript{86} As Mahrieh is a rational response to the divorce laws, therefore the equilibrium amount of Mahrieh in marriage market will never reach zero, whereas this could happen in case of dowry and bride price when marriage market is balanced in the number of marriage-age men and women.
their Mahrieh and most importantly they lose their remarriage option, as they need to have their husband’s consent in order to get divorce. Second, the wife can initiate divorce without having grounds for divorce, which would require her to forgive Mahrieh, and in some cases even compensate him more to be able to get his consent, which as mentioned earlier is known as “Khul” divorce. Under such circumstances, wives outside options, i.e. the threat point, may improve than just leaving marriage as now she has the option of remarrying. The third, and comparably, the best option for the wife would be the case where she can evidence grounds for divorce. In this case not only would she be entitled to her Mahrieh, but also she would have the option to remarry, even though asymmetric virginity premiums still dictate a different condition for her.

Improvements in the status of the divorced women as a result of Mahrieh make the (third) constraint more binding to husbands. Mahrieh may oblige husband to be more generous in allocating resources to the wife to induce her stay married.

Even though Mahrieh could increase the relative utilities of women within marriage, the converse is that Mahrieh may in some cases result in domestic violence which can alter the distribution of welfare within the household unfavorable to wife. The threat of violence is often used by husband as a tool to redistribute the resources (Bloch and Rao 2002). In Iran, as mentioned earlier, Domestic violence could be a possible consequence resulting from the combination of Nushuz (i.e. wife’s insubordination, also known as “adam-e-tamkin”) condition and Mahrieh. Nushuz condition affects post marriage negotiations between couples and shifts the bargaining power to husbands. A discontented husband may start to make life miserable for his wife. Such circumstances help him bring up the issue of “adam-e-tamkin” to have enough grounds for divorce or make his wife file for a divorce process, in which case he not only does not pay Mahrieh, but also he may receives some amount, in latter one, as the separation occurs under “khul” divorce. Although the pervasiveness of domestic violence against women in Iran is well documented—for example, Ghazi-Tabatabaie (2004) shows that 66% married women in Iran are subjected to some kind of domestic violence in the first year of their marriage—the reasons behind this violence are not well understood.

In this study, we have focused only on the positive aspects of families without considering the negative interactions between family members. Violence is the extreme
form of the negative interactions. We gain valuable insights by extending noncooperative bargaining models of the family to include the domestic violence (Tauchen et al., 1991; Farmer and Tiefenthaler, 1997). Future research may contribute insight into the relation between Mahrieh and domestic violence building on the vast existing literature on the “dowry death”\(^{87}\) phenomena which is observed in south Asian countries such as India, Bangladesh, and Pakistan (Bloch and Rao, 2002).

### 4.5 Conclusion

Marriage is an institution where the laws governing its formation and termination, divorce, directly influence the behavior of its parties. Making laws more favorable for one spouse affects decisions toward pre-marital investments, timing of marriage, and allocations within marriage. Consequently, they alter the terms of the marital bargain and alter the balance of each of the parties’ net gain from marriage.

The legal structure within which marriages form has been changing over the past decades in Iran. Despite the subjection of marriage and divorce to Sharia or Islamic law, there have been subtle efforts to adjust. Starting with the Marriage Act of 1931, followed by the Family Protection Law of 1967 (amended in 1975), Iran’s family law in subjects related to marriage and divorce was shifting toward women’s equal rights until after the Revolution of 1979 when the revolutionary government declared the Family Protection Law of 1967 to be non-Islamic. Then some years later in 1986, citing the Marriage Act of 1931 as precedent, the Post- Revolutionary Family Protection Law was reinstated. Once again, women were subject to unequal conditions with respect to divorce.

In this chapter, I first briefly review remarks on the evolution of marriage and divorce laws in matters relating to polygamy and unilateral divorce right of men. Then, applying the bargaining approach to the family I analyze how changes in the legal structure of marriage and divorce alter the terms of the marital bargaining and force women to circumvent inequitable Iranian laws to improve their position. Opportunities outside the

\(^{87}\) The Indian National Crime Records Bureau (NCRB) reports about 8,172 dowry death cases in India in 2008.
marriage play an important role in the marital bargaining models and they can antagonize the relationships within the marriage by adding a narrative component to the incentives governing marital decisions; couples either decide to remain married and invest in their marriage or they get divorced in response to outside options as they arise.

Finally, I present a model of how Mahrieh could improve women’s position within the household in light of the unequal divorce rights and remarriage market conditions favoring men. As women can not easily opt out of marriage, they obtain a conditional and legally enforceable bond known as Mahrieh from their husbands to secure themselves against the risks of divorce and maltreatment. Understanding the origins and functions of social institutions such as Mahrieh helps policy makers to prepare for the changes in the family law in line with society’s needs.
Bibliography


Samples of Marriage Contracts

Figure 18: Sample of 1924 marriage contract.
Figure 19: Sample of 1932 marriage contract.
Figure 20: Sample of 1977 marriage contract (part I).
Figure 21: Sample of 1977 marriage contract (part II).
Figure 22: Sample of 2002 marriage contract (part I)
Figure 23: Sample of 2002 marriage contract (part II).
Figure 24: Sample of 2002 marriage contract (part III).
Figure 25: Sample of 2002 marriage contract (part IV).