Muslim family law, prenuptial agreements and the emergence of dowry in Bangladesh*

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Abstract

Empirical and theoretical research into dowries has had difficulty accounting for the large swings in dowry levels and participation that have been observed in many countries over the past few decades. To explain trends in dowry levels in Bangladesh, we draw attention to a widespread institutional feature of marriage contracts previously ignored in the literature: the *mehr* or traditional Islamic brideprice, which functions as a prenuptial agreement in Bangladesh due to the default practice in which it is only payable upon divorce. We develop a model of marriage contracts in which mehr serves as a barrier to husbands from exiting marriage, in which dowry can be divided into a standard price component and a term that ex ante compensates grooms for the cost of mehr chosen by the couple. The contracts are welfare improving because they induce husbands to internalize the social costs of divorce for women. We investigate how mehr and dowry respond to exogenous changes in the costs of polygamy and divorce, and show that both decrease when costs of divorce increase for men. This is in contrast with the predictions of models in which dowry serves only the traditionally considered roles. To test the model's predictions empirically, we use novel data collected on marriage contracts between 1956 and 2004 from a large household survey from the Northwest region of the country, and make use of key changes in Muslim Family Law between 1961 and 1999. We show that major changes in dowry levels took place precisely after the legal changes, corresponding to simultaneous changes in levels of mehr. We argue that the documented pattern of responses can only be explained if dowries include a component of compensation for mehr, hence our study provides strong evidence of the role of legal rules governing marital separation in explaining dowry trends in Bangladesh.

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1 Introduction

There is a large an growing literature in economics and other social sciences on the role of dowry (payments from a bride's family to the groom) in marriage markets. Economists typically model dowries as the outcome of female competition for grooms in settings in which it is relatively unattractive for women to stay unmarried compared to men, for instance because male individual earnings capacity exceeds that of females (Becker, 1991; Rao, 1993). In this framework, dowry acts as a price that equilibrates the marriage market by equating supply and demand for grooms.

Despite the appeal of this analytical framework, empirical and theoretical research into dowries has had difficulty accounting for the large swings in dowry levels and participation that have been observed in countries such as Bangladesh, India and Pakistan over the past few decades (Srinivas, 1983; Wilson, 1981; Molho, 1994). In particular, time trends in all three settings indicate substantial dowry inflation and rising participation despite documented increases in the relative economic value of women and little change in the relative number of brides and grooms on the marriage market (Rao, 1993; Paul, 1986; Anderson, 2007).[1]

One of the most difficult puzzles to explain is the abrupt switch in the direction of marriage payments that occurred recently in Bangladesh. In Bangladesh, the dowry system first emerged in the 1950s and has now almost fully replaced the traditional system of dower, making it the only Muslim country in which dower is rarely observed and dowry almost universally practiced. Among Muslim majority countries, marriage transfers from the bride's side are only commonly observed in Pakistan and Bangladesh (Tertilt, 2004). In both countries, dowry participation has risen dramatically since partition from India, and now characterizes the majority of marriages.

This paper attempts to reconcile economic models of dowry as prices with observed trends in dowry payments by incorporating into the analysis a thus far overlooked institutional feature, the mehr or traditional Islamic brideprice. In particular, most Muslim marriages involve the negotiation of a mehr provision as part of a marriage contract which consists of a monetary payment from husband to wife (Carroll, 1986). The key characteristic of mehr is that, while sometimes paid at marriage (prompt mehr), by law all or part of it can deferred and only paid in the case of husband-initiated divorce (deferred mehr). However, unlike other Islamic countries, in Bangladesh mehr

[1] A number of authors have attempted to explain trends in dowry as the result of a "marriage squeeze". The basic idea is that since men on average marry at older ages than women, the ratio of eligible girls or women of marriageable age to men of marriageable age falls over time due to population growth, leading to an increase in the demand for grooms on the marriage market (Rao, 1993a, 1993b; Amin and Cain, 1997). However, Anderson (2006) shows that in a dynamic model with subsequent generations of women and men, it is no longer true that population growth increases demand for grooms, invalidating it as an explanation for dowry increase. Anderson (2003) shows that marriage squeeze can arise when women but not men can inherit caste, as is the case in India. While this story might be relevant to dowry emergence in Pakistan where there is also a strong caste-like social system (biraderi), the theory has limited applicability in Bangladesh, where their is no comparable caste system. Another set of papers point to changes in the value of grooms relative to brides that resulted from changing economic roles of men and women. Kabeer (1988) argues that mechanization in rice production reduced the returns to female relative to male labor, while Oldenburg (2001) relates the emergence of dowry to increased access of men to cash wages and land under colonial rule, which increased their economic importance relative to women. A recent paper by Arunachalam and Naidu (2006) links the increase in dowry to expanding contraceptive access from the 1970s onwards, which lowered the productive value of women as child bearers.

is almost universally and automatically specified to be paid only in case of divorce, much like a standard prenuptial agreement.[2]

We explore the possibility that an important price component of dowry in this setting is compensation from brides to grooms in exchange for the amount of mehr specified in the marriage contract, which poses a credible barrier to no-fault divorce (talaq) that husbands have a default right to initiate. If divorce imposes disproportionate economic and social costs on women, then it is ex ante efficient for couples to sign such a binding contract because it induces the husband to internalize the cost of divorce for the wife. Since agreeing upon a higher mehr in expectation imposes costs on the husband - by keeping him in a less than ideal marriage with some probability, and by having to pay this increased mehr in case of an even worse match realization - grooms must receive a transfer at the time of marriage that is increasing in the amount of mehr specified in order to agree to sign the contract. Furthermore, prenuptial amounts, and hence average dowry levels, will vary over time with both changes in the relative cost to men of marital separation and with the enforceability of marriage contracts.

To explore the implications for dowry payments of contracting over mehr, we develop a model of marriage markets in which couples specify prenuptial agreements and exchange a prompt transfer before entering a marriage. We show that in this setting equilibrium dowries can be decomposed into a component that compensates the groom for the mehr specified in the marriage contract and a residual component that serves the usual price role of equilibrating the supply of brides and grooms in the market. In the model men are perfectly compensated ex ante for the amount of mehr specified in the contract, while women anticipating higher socioeconomic costs of divorce choose higher levels of mehr and pay higher dowries.

Our model is related to theories positing that any wealth brought into marriage increases a woman's bargaining power and results in preferable marriage outcomes.[3] However, while this general idea has been brought up in numerous papers on collective household models, from what we are aware no existing work identifies an explicit mechanism through which dowry - which is property of the husband - affects household bargaining.[4] Within this literature, the work most closely related

[2] This has been noted many times in cultural studies and also verified by the authors with data collected from the books of 315 marriage registrars in rural Bangladesh in 2007. In none of the marriages recorded in these registrars was more than a token amount of dowry specified to be prompt (cross-tabulations and details of data collection available upon request).

[3] See for instance Deaton (1994).

[4] Some qualitative studies suggest a psychological pathway through which dowry increases a bride's well-being and respect from her husband and in-laws (BLAST, 2004). According to the BLAST study (2004), which carried out in-depth interviews with women in 12 districts of Bangladesh, "'Shukhe thakbe' or 'she will live happily' is the most common reason for agreeing to give dowry, other than stating that one has to marry a daughter off and for that one will have to give dowry ... Many of the women... stated that dowry had increased their status among the in–laws, even if they did not have complete control over the items given as dowry.." One BLAST respondent claimed that dowry "... proves that my family is well off and that they are able to bear my burden if the need arises," and one woman reported that her daughter-in-law argued that his parents "have no claim" over their son after "selling" him to her family by accepting dowry.Nunn (2006) proposes a theoretical explanation for the frequently observed system in which both dowry and bride price are exchanged simultaneously. In his model, dowry is brought into marriage in the form of productive assets and the bride's family receives cash as a partial compensation. As in previous work on pre-marriage wealth, this transfer serves as a barrier to divorce since it is assumed that the woman can withdraw these resources in case of divorce. Furthermore, Nunn's model has little relevance in Bangladesh where there is currently

to ours is an empirical study by Esteve-Volart (2003), which examines whether increases in dowry post-1974 (when penalties on unregistered marriage rose) are associated with a reduction in the probability of divorce in Matlab, Bangladesh. As in the previous papers on bargaining power, the empirical strategy rests on the assumption that women who register marriages will be refunded their dowry in the event of divorce without identifying a mechanism by which dowry can be recovered, a key focus of our paper. As a result, the paper cannot empirically disentangle dowry as divorce prevention from an increase in women's eagerness to marry in response that corresponds to legal changes in 1974.[5]

To lend empirical evidence to the role of mehr in explaining marriage payments, we exploit variation in mehr levels based on changes in men's incentives to divorce that occurred with four key changes in Muslim Family Law governing divorce and polygamy. These included legislative amendments in 1961 and 1974 and two case law developments in 1990 and 1999, each of which introduced procedural norms that either imposed additional costs on men or relaxed existing costs of polygamy or divorce. The model gives clear predictions regarding the directions of change in mehr and consequently dowry levels after each legal change. Then using novel data on marriage contract elements collected as part of a large household survey in rural Bangladesh for the purposes of this study, we test the following predictions: (i) By imposing financial barriers on polygamy and hence increasing men's costs of abandonment without formal divorce, the 1961 amendment implies an *increase* in equilibrium levels of both dowry and mehr. (ii) By strengthening the enforcement of alimony payments and therefore the contract-independent costs of divorce, the 1974 legal change implies a *decrease* in equilibrium levels of both dowry and mehr. (iii) By having the opposite effect on enforced alimony payments of the 1974 change, the 1990 and 1999 case law developments imply an *increase* in equilibrium levels of both dowry and mehr.

The above predictions differ from predictions obtained from a model in which dowry does not depend on negotiated terms of the marriage contract. In a model without mehr, the 1974 legal change would be expected to increase the equilibrium level of dowry by increasing the exogenous cost of divorce and therefore making marriage less attractive for men.[6] In contrast, in our model, increasing the exogenous cost of divorce decreases mehr, which under reasonable assumptions decreases the net amount of dowry a woman has to pay. The general lesson from this is that if, in addition to exogenous factors, the price of a transaction also depends on factors that are endogenously chosen by the transacting parties (through either a binding contract or some other joint action that credibly affects future actions of the parties), then a naive analysis that only considers the direct effect of exogenous factors on the price can lead to misleading qualitative conclusions.

no significant transfer given to brides at marriage and dowry is almost always paid in the form of cash or consumer goods as opposed to productive assets.

[5] The author suggests that the institution of marriage registration made dowry more likely to stay with the woman upon divorce, however this is unlikely to be the case since dowry property is not registered on a Bangladeshi marriage contract (whereas it frequently is in Pakistan), and divorce settlements are strictly regulated in family courts by interpretation of Q'aranic law which makes no reference to dowry.

[6] This is exactly the prediction of Esteve-Volart (2003), who investigates the change in dowries post 1974 without considering mehr.

Taking into account how the same changes affect the endogenously chosen factors (in our case, the contracted mehr amounts) and the relationship between the latter and the price can reverse the predicted direction of price change.

Our empirical findings support the hypothesis that trends in dowry in Bangladesh over the past 40 years are in large part the product of shifting use of deferred divorce clauses in Muslim marriage contracts that arose in response to changes in the legal environment that affected the cost of divorce for men. As predicted, levels of both dowry and prenuptial agreements increased sharply when legal barriers to polygamy were enacted, and decreased after imposing extra costs of divorce on men. Because both mehr and dowry respond to the legal changes as predicted by our model, the observed patterns cannot be explained by a standard price theory of dowries that excludes contracted mehr. This finding also contradicts previous claims in the literature that dowry has increased monotonically since its emergence. The empirical estimates of dowry responses associated with changes in mehr allow us to, with some assumptions, back out a lower-bound on the "price of mehr" in terms of increased dowry payment at the time of marriage. Extrapolating over time, we estimate that at least 30% of the increase in dowry from 1960 to 2000 is a result of increasing expenditures on divorce prevention over the period.

As a robustness check, we use political boundaries to isolate villages in our sample that had limited access to official marriage registrars or union councils who officiate divorce proceedings. For households in these villages, the legal change of 1961 is likely to have had little impact on marriage contracts, while the legal ruling of 1974 is likely to have had the opposite effect as it had in less remote areas by increasing the enforceability of marriage contracts without altering the threat of divorce. We test these hypotheses in a difference-in-difference estimate that compares the differential impact of the laws in these two areas. The results support both predictions.

An alternative role of dowry that has been explored by a number of social scientists and historians is that gifts from a bride's parents to the couple at marriage often acts as a pre-mortem bequest to daughters.[7] While historic evidence indicates that this was the traditional role of dowry in most societies, there is little empirical evidence on the destination of marriage transfers in contemporary settings since it is generally impossible to distinguish the two types of dowry in survey data.[8] Our analysis also sheds light on the role of bequest dowry in explaining trends in Bangladesh with novel data on ownership rights over dowry. This allows us to separate more precisely bequest dowry (transfers from bride's parents to bride) from gift dowry (transfer from bride's parents to groom) than has previously been possible. According to our estimates, bequest dowry is low and constant throughout the period, and, as predicted, independent of legal changes. This stands in contrast to past analyses of the trend in bequest dowry in Bangladesh based on less precise information, which estimate a decrease in the level of bequest dowry over time (Arunachalam and Logan, 2006).

[7] Technically, the term "dowry" encompasses all marriage payments transferred from the bride's family to the bride or groom, whereas "groomprice" is a payment from the bride's family to the groom's parents.

[8] Boticinni (1999,2003) argues that it is both a historical norm in many societies, and a potentially more efficient form of providing inheritance to girls.

2 Institutional Background

2.1 Islamic law and marriages

A key feature of all Muslim marriage contracts that differs from a standard Western civil marriage license is a provision regarding mehr, or dower, a sum of money or any other valuables that the husband gives or undertakes to give to the bride upon marriage.[9] Muslim scripture specifies that all marriages involve a transfer from groom to bride, and the majority of classical Muslim clerics hold dower to be an automatic effect of the marriage contract such that even if no dower is stipulated or it is stated that there will be no dower, the wife is entitled to claim a "fair" dower based on that received by others of her social standing (Esposito 1982; Welchman 2000; Ali 1996).[10] Customarily, dower is divided into prompt dower, which is payable immediately at the marriage, and deferred dower, which is payable on the termination of the marriage by death or divorce initiated by the husband (Rapoport 2000; Welchman 2000; Moors 1995).[11]

Muslim marriage contracts across countries routinely include written documentation of both types of dower arrangements. In Bangladesh, after the announcement of the engagement of a Muslim couple and before the wedding takes place, a formal contract (kabin) is drawn up and signed in the presence of a licensed marriage registrar (kazi) at a ceremony attended by both sides of the family. The contract notes the consent of the couple to marry and specifies the amounts of prompt and deferred mehr, which cannot be renegotiated after the marriage has become legal (Geirbo and Imam, 2006). These arrangements cannot by law be renegotiated once registered. While in most settings, the majority of dower is specified to be prompt or conditional, the default practice in Bangladesh is to specify all dower as deferred and conditional on divorce (Kamal, 2004; Huda, 2006).

Islamic family law under any interpretation affords far greater rights in marriage and divorce to men than women. Most notably, 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 only men have unilateral and unconditional divorce rights (talaq). When talaq rights are not curtailed through legal amendments, husbands can divorce their wives without cause, attempt at mediation, judicial oversight or even informing their wife, and as a result a married Muslim woman in many traditional settings lived under the ever-present threat of being divorced without having the right to initiate divorce themselves.

[9] In Islamic law, marriage is defined as a civil contract whose essential components are the offer (ijab), the acceptance (qabul), and the payment of mehr. Rules regarding each of these were outlined in the Quran. For instance, [4:4] You shall give the women their due dowers, equitably. (See also 244:24-25, 5:5, 33:50, 60:10).

[10] Interpretations of the correct amount of implied dower in cases where it is not specified vary widely across time and space. The Quran gives only vague guidance in this: [2:236] You commit no error by divorcing the women before touching them, or before setting the dowry for them. In this case, you shall compensate them - the rich as he can afford and the poor as he can afford - an equitable compensation. This is a duty upon the righteous.

[11] When the divorce occurs through judicial dissolution, deferred dower payment does not follow an absolute rule. In these cases, the courts have the latitude to assess blame and harm caused by the spouses and allocates cost accordingly. If the husband is found to be at fault, the wife is generally granted the dower (El-Arousi 1977: 14; Quick 1998: 36-39; Ali 1996, 125).

Although women have little ability to influence marriage outcomes directly, throughout history scholars have regarded deferred dower as an effective deterrence against husband-initiated divorce since traditional law dictates that in such cases the husband is automatically forced to pay the full dower. This view can be observed in legal discourse of the last century, as is illustrated by the following quote:[12]

> "This one-sided liberty of divorce, as well as the one-sided permission of polygamy, .. are the natural results of complete freedom of contract, and the rigid enforcement of contracts between parties so unequally matched, as were men and women... But where the woman is by any chance in a position to make a better bargain for herself, the same principle of free contract tells in her favour. ... [T]hough an absolute stipulation that she shall never be divorced will be void in law, she can make herself practically secure by stipulating for a dower so large, that it will be inconvenient or impossible for him to pay it, on the understanding that it will not be exacted unless he divorces her ...." - Roland Knyvet Wilson, An Introduction to the Study of Anglo-Muhammadan Law (London: W. Thacker, 1894), pp. 138-139.

In the next sections we formalize this notion in a model of marriage contracts involving mehr.

As opposed to mehr, dowry does not originate from Islamic law and is neither registered nor recorded on the marriage contract. While it is a now a common practice, it is supported neither by state law nor personal laws. In fact, dowry was declared illegal in Bangladesh in 1980 with the Dowry Prohibition Act, though this appears to have had no impact on the institution (Huda, 2006). There is no consensus in the literature on why dowry emerged among Muslim households in Bangladesh and Pakistan, when the system is nonexistent and even shunned by religious leaders in the rest of the Muslim world. On account of evidence that dowry practices began to spread in both countries at the point of partition from India, dowry is often perceived to be a cultural practice inherited from upper-caste Hindus (Rozario, 2004).[13] However, this does not explain why dowries only became common practice in Bangladesh post-partition (see Section 4.4).

2.2 Legal Changes

Religious leaders and legal activists have long recognized Muslim women's vulnerability to both polygamy and indiscriminate divorce. Hence, the key emphasis of legal reform of family law in many Muslim countries including Bangladesh during the last century has been imposing restrictions on

[12] Other scholars have a maintained a slightly different view of deferred dower as serving primarily as the bride's financial protection in case of talaq, or a substitute for alimony, as illustrated below.

> "Mehr (Dower) is one of the fundamental conditions of every marriage contract. It is a capital sum provided by the husband and placed at the disposal of the wife which constitutes for her benefit a guarantee of independence during marriage and a security for the future in case of divorce or widowhood." - Clavel "Droit Musulman" (Paris) 1895 Volume I p. 49.

[13] A related anthropological theory posits that the transformation from bride price to dowry was driven by a post-Partition increase in conspicuous consumption of all types, including lavish expenditures at weddings due to the new rural cash economy that arose under capitalism (Ahmed and Nahar, 1987).

the rights of men to contract polygamous marriages and divorce their wives through talaq. The introduction of such legal reforms serves as the basis of our empirical strategy for isolating changes in dowry that correspond to changes in demand for divorce prevention. Two such amendments to and two High Court rulings over laws governing marriage and divorce in Bangladesh between 1960 and 1999 have particular relevance for our analysis.

2.2.1 Muslim Family Law Ordinance of 1961

The Muslim Family Law Ordinance (MFLO) of 1961 imposed, above all, significant restrictions on polygamy. Under the MFLO, a man was given permission to marry a second wife only under specific circumstances and after following specific procedures. These included the requirement that a husband obtains the written permission of the local government authorities of the existing wife's residence and satisfy the local government body, or Union Council, that he had obtained the prior wife's consent. In addition, the proposed new marriage had to be "just and necessary", determined on the basis of the current wife's physical or mental condition and the husband's ability to support multiple families.

To enforce these rules, the MFLO empowered Union Councils to arbitrate on all disputes related to divorce and polygamy, and imposed automatic jail sentences for men found to be in violation of these rules The MFLO also rendered registration of all Muslim marriages compulsory, including detailed rules regarding the manner in which registration was to take place, and pronounced that registers be preserved permanently. However, the MFLO made no provision for the establishment of sufficient registrars to accommodate this new requirement, and as a result penalties were not imposed on couples that failed to register and marriage registration rates remained low throughout the 1960s and 1970s.

In addition to changes in laws governing polygamy, the MFLO made an attempt at divorce reform by requiring that a husband notify the local official of his pronouncement of talaq, intended to empower local councils to impose barriers on arbitrary divorce. However, in the absence of a system requiring notification of talaq *revocation*, this requirement had little effect on divorce proceedings. As a result of this oversight, in effect the MFLO provided no restrictions on divorce nor increased the likelihood of a woman receiving provisions for maintenance following divorce. Hence, in practice, while the institution of marriage became formalized under this law, the institution of divorce was relatively untouched and the husband maintained complete rights to unconditional divorce.[14]

To summarize, the main effect of the MFLO was to place firm restrictions on polygamy, hence increasing husbands' incentives to officially divorce in the event that they desire to separate.

[14] Because of exactly such concerns, in 1956 the Pakistan Commission on Marriage and Family Laws recommended that the Court be authorized to order a husband to maintain his divorced wife until death or remarriage, citing the "large number of middle-aged women who are being divorced without rhyme or reason should not be thrown out on the street without a roof over their heads and without any means of sustaining themselves." (Report, in The Gazette of Pakistan [Extraordinary], June 20, 1956, p. 1215).

2.2.2 Registration of Muslim Marriages and Divorces Act of 1974

The only amendment and only major post-Independence reform to the MFLO was the Registration of Muslim Marriages and Divorces Act (MMDA) of 1974. Unlike the MFLO, the MMDA increased the effective costs of divorce (rather than polygamy). Essentially, the MMDA re-enacted the provisions of the 1876 Act for registration of divorces, in addition to establishing other legal rights that better protected a woman against arbitrary divorce. Most importantly, by establishing a universal system of divorce registration and physical registries, the Act made notification requirements of talaq effective, such that men were under threat of penalty for committing talaq without going before the courts, thereby curtailing men's privilege to verbally divorce their wives. By requiring that divorce be granted only in court, these stipulations increased a man's expected costs of divorcing his wife (for any fixed level of mehr specified in the marriage contract) since there was a greater chance that he would be required to pay maintenance, while placing no further restrictions on polygamy.[15] The requirement that local (UP) courts be involved in all divorce proceedings strengthened a divorced woman's right to mata'a (the "maintenance" paid to a divorced woman), and possibly also her right to mehr.[16] Before 1960, a divorced woman could sue for mehr, but was unlikely to receive maintenance since there were no official divorce proceedings.

To summarize, the 1960 amendment enacted procedural restrictions to block polygamy, and the 1974 amendment enacted procedural restrictions to reduce arbitrary divorce.

2.2.3 Other legal changes

While these two enactments were the only legislative amendments to family law that took place, a number of important developments in case law are worth noting.[17] In the early 1980s, two court rulings changed conditions under which women could seek divorce. In 1980: In Hasina Ahmed v. Syed Abul Fazal (32 DLR (1980) 294), Court ruled that a woman may be granted a khul (divorce) by a judicial decision without the husband's consent. In 1982: Nelly Zaman v. Giasuddin Khan (34 DLR (1982) 221), the Court ruled that, with the passage of time, the husband's suing for forcible restitution of conjugal rights against an unwilling wife is both outmoded and untenable if considered with relation to the principle of equality of men and women enshrined in Articles 27 and 31 of the Constitution. Discussion of these two rulings by legal scholars suggests that they had symbolic value rather than real consequences since both events are extremely rare. In 1984, the Minimum Marriage Age Ordinance went into effect, making minimum ages of marriage 21 for men and 18 for women. However, without birth certificates, this law has been impossible to enforce and reportedly had little impact on marriage patterns.

[15] The three-month notification period and administrative procedures associated with talaq registration also presumably inhibited divorces that occurred out of emotional impulse, as was the intention of the law.

[16] Muslim laws require that a divorced woman receive maintanence from her husband following talaq, talaq tafwid or ta'liq, divorce, or following faskh or tafriq, a legal or conditional divorce, under certain circumstances. The woman's right to mehr depends on the interpretation of and legal norms governing the circumstances of the divorce.

[17] In particular, the issues of maintenance and obedience within marriage, as well as grounds on which women may seek divorce, continue to be governed by classical (hanafi) law for the most part. Much legal development has occurred through case law. In contrast, marraige registration, polygamy, and talaq are governed by common law.

While legal reforms to family law in the 1980s appear to have had little immediate impact on the institution of marriage, in the 1990s, there were two rulings over the amount men had to pay wives for maintenance in cases of divorce. In the first, in 1991, (Rustom Ali v. Jamila Khatun, 43 DLR (1991) 301), the Court ruled (in accordance with classical Hanafi law) that a wife is not automatically entitled to arrears of maintenance. In particular, the former wife or the child may not claim past maintenance unless the parties have a previously established agreement, which clearly highlighted the importance of specifying mehr in marriage contracts. In 1995, after much pressure from women's organizations, the High Court temporarily reversed this decision, and the case immediately went to the Supreme Court.[18] However, after a long waiting period, in 1999 the Supreme Court overruled the 1995 decision and reinstated the 1991 ruling on maintenance.

To summarize, the 1991 and 1999 rulings reduced the expected financial cost of divorce by decreasing the amount of maintenance a man should expect to pay in the event of divorce. While both rulings received widespread attention in the Bangladeshi and international Islamic media, it is worth noting that alimony levels are low relative to mehr, limiting the effects of these rulings on marriage contracts. Nonetheless, the Court rulings received much attention in the press (which was far more wide-reaching by the 1990s), so could have plausibly have influenced expectations of enforcement of marriage contracts more generally.

2.3 Complimentary Legal Institutions

The potential influence of dower arrangements depends on critical features of the legal environment in which they are made. Here we discuss two institutional features of marriage in Bangladesh that are relevant for interpretations of marriage contracts and payments.

2.3.1 Record Keeping

First, such complex and potentially long-standing contractual arrangements are only enforceable, and therefore meaningful instruments to prevent divorce in a setting with a sufficiently strong institution of record keeping. In Pakistan and Bangladesh registration of Muslim marriages has been compulsory since the passage of the MFLO. The MFLO required that all marriages be registered and that the following information to be entered in the register (a sample form is provided in Appendix A): amount of dower; how much of the dower is prompt and how much deferred; special conditions or stipulations for dower payment; whether and conditions under which husband has delegated power of divorce to wife; whether the husband's right of divorce is in any way curtailed; and whether any document drawn up at marriage relating to dower or maintenance

[18] In 1995, (Muhammad Hefzur Rahman v. Shamsun Nahar Begum,15 BLD (1995) 34) relating to the maintenance of divorces, the Court ruled that a Muslim husband's responsibility to maintain his divorced wife does not cease with the expiry of the idda. The Court ruled that the former husband is bound to provide his divorced wife with maintenance on a reasonable scale for an indefinite period, until her status as a divorce changes, that is, if she remarries. The ruling was based on an interpretation of a Quranic verse relating to provisions for divorced wives (2:241).

Although the MFLO made registration compulsory, the laws were not universally applied until post-independence since the government failed to provide sufficient facilities for recording and preserving registration documents in all places. In practice, the MMDA further promoted and facilitated a truly universal system of marriage registration by establishing national registrars throughout the country with strict rules relating to registration fees and higher penalties imposed on registrars and couples that did not comply. By 2000, an estimated 90% of all marriages contracts were recorded in the national registry.

While registration is relatively new in Bangladesh, the practice of mehr and referral to marriage contracts in divorce settlements (presided over by appointed local judges) has been universal throughout the last century (Kumari, 1998). Since marriage in Islam is always interpreted as a contractual arrangement, marriage registration is not a necessary institution in order to legitimize the use of marriage contracts for divorce prevention. While registration facilitates the process of divorce, local councils will still consider a marriage contract that was not registered but can be produced by one of the divorcing parties. Prior to registration, Muslim marriages in Bangladesh were presided over by the kazi, as they are today, and the signing of the contract was a fundamental part of the traditional marriage ceremony.[19] Consistent with this, in almost all households interviewed in 2003, married women had a copy of the marriage contract in the home, even when the marriage took place before registration became compulsory or registrars were available.

2.3.2 Contract Enforcement

Second, the meaning of dower arrangements depends fundamentally on the degree of contract enforcement, which amounts to the scope of the local councils in interpreting the conditions under which a woman can claim either deferred or prompt dowry and awareness among women of their rights to mehr. Although the Q'aran is fairly specific about certain circumstances of marriage and payment obligations, there is clearly a great deal of discretion on the part of courts to decide whether a divorced woman has a right to claim mehr.[20] The legal and social science literature is very scant on the actual power and variance across time of space of Union Parishad (UP) Arbitration Councils (which deal with disputes arising about divorce, maintenance and polygamy).[21] Internal project documents prepared by Madaripur Legal Aid Association (MLAA, 2000) point out that UP Councils often exist only on paper and that local people are frequently unaware of their existence.

[19] The qazi (qadi, kadi, kazi) is a traditional Muslim judge whose advice is also traditionally sought on other matters of personal law, such as inheritance, divorce, and the administration of religious endowments (waqfs).

[20] For instance: [2:237] If you divorce them before touching them, but after you had set the dower for them, the compensation shall be half the dower, unless they voluntarily forfeit their rights, or the party responsible for causing the divorce chooses to forfeit the dower. To forfeit is closer to righteousness.

[21] Nazneen (2004) summarizes the role of Salish Councils in present-day law:

"Salish is now administered in three overlapping forms in Bangladesh. The Union Parishad Arbitration Council is empowered to arbitrate on family disputes, and its decisions are recognised in the Family Court. Traditional salish is a gathering of village elders and concerned parties, exclusively male, for resolving local disputes, and has no legal authority. NGO-modified salish is a new form which aims to modify salish panels and the way in which their sessions are conducted and administered. Salish cannot legally adjudicate on criminal cases, issue fatwas or impose cruel or inhumane punishments. Family disputes have to be settled based on religious personal laws."

The only published literature has been produced by the Asia Foundation (2002), which concludes that the UP councils tend to be biased and ineffective in providing justice to women and the poor, and in some cases even decline to convene sessions. The report further points out that the members are frequently ill-informed about family laws.

Nonetheless, although many women are uninformed about their legal rights or reluctant to take their husband to court, Rozario (2004) claims that women do seek legal aid when thrown out or threatened with second marriage or divorce, and there are countless examples of legal cases involving divorce negotiations and payment that appear in the local press. Finally, anthropological research into informal in rural Bangladesh provides evidence that, while amounts of mehr are not strictly enforced in divorce proceedings, there remains a strong relationship between mehr and actual divorce settlements determined by the courts. Hasle reviews 27 divorce cases in a rural village in 2000, and observes that settlements are roughly 20% of specified mehr, and in no case is no settlement offered to the woman (Hasle, 2003) Hence, while enforcement varies greatly over time and space, it is important to keep in mind that the legal system currently provides a broader range of possible outcomes and more contract enforcement than is commonly assumed.

Furthermore, in practice, uncertainty in legal outcomes does not invalidate the central function of marriage contracts in posing barriers to divorce as long as there remains sufficient expected enforcement of such contracts.

3 Theoretical Model

In this section we propose a model of marriage markets that involves both dowry and prenuptial agreements. For tractability, we abstract away from the possibility of bequest motive behind dowries. In this framework, we investigate the implications of important legal changes - the MFLO, the MMDA, and supreme court decisions in the 1990s - on dowry and mehr levels.

3.1 The model framework

We consider an overlapping generation model of endowment economy with marriage markets, with time periods $t = ..., -2, -1, 0, 1, 2, ...$[22] In every period a new cohort of young women and men are born. For tractability, we assume that each cohort consists of a continuum of women and men, of the same size.[23] All individuals live for an infinite number of periods, and they discount future payoffs using the same constant discount factor δ.[24]

Entering a marriage involves the two parties signing a contract, among the set of contracts available in the marriage market. Men can marry any number of times during their lives. A married

[22] This formulation (no initial period) makes the definition of stationary equilibrium simple, in that it is a set of contracts such that exactly the same number of women and men choose to sign these contracts in each period. If there is an initial time period 0, then such a state can only be approximated, as $t \to \infty$.

[23] Allowing for the population to grow at a constant rate would not change the qualitative conclusions of the model.

[24] As usual, the discount factor can incorporate the probability that an individual survives until the next period, and this way the expected lifetime of an individual can be finite.

man can remarry in two different ways: either by divorcing his previous wife and remarrying or by abandoning his previous wife and entering a polygamous relationship. Both choices potentially incur costs imposed on the man by local religious authorities (that handle cases of marriage, divorce and abandonment) at the time of seeking permission to remarry. These expected costs depend on the legal regime. Divorce is a unilateral decision by men, although the marriage contract that parties sign jointly increases the expected cost of divorce for men (see below). Women can remarry if they are divorced, but not if they are abandoned (since on paper they are still married, and polygamy is not an option for them legally).

In each period, all men receive endowment e, and all women receive endowment e'.

Within periods, the sequencing of events is the following: (1) endowments realize; (2) individuals eligible for marriage decide whether to marry and choose a marriage contract; (3) those who sign a marriage contract possibly exchange a transfer (dowry or bride price, depending on the receiver); (4) the ex ante unknown match qualities of couples realize; (5) married men decide whether to divorce or abandon their wives; (6) men who abandon or divorce their wives possibly pay an exogenous cost imposed by the religious court, and women who are divorced or abandoned incur an exogenous social and economic cost of separation; (7) divorcing couples also possibly exchange a transfer mandated by law or by contractual obligations; (8) individuals consume.

All individuals have the same utility function, which is additively separable in time. Utilities in each period depend on consumption and marital status in an additively separable manner: $U(c, x) = u(c)+x$, where c is consumption in the given period, and x is the utility from current marital status. The utility from marriage stems from a variety of sources, including the possibility of having children, the efficiency of combining the couple's resources, the monetarized value of the difference between how members of the society interact with married versus single individuals (for example, unmarried women might be socially stigmatized and excluded from certain transactions), and simply the direct utility one obtains from being married. From now on, we focus on the case when $u(c) = c$, because in this case individuals are risk-neutral, and all cross-insurance considerations are missing from marriage contracts. Therefore mehr serves purely as an exit barrier for men from the existing marriage, which makes it much simpler to derive. Because of the linear utility setup, we also assume that the rate of interest is $r = \frac{1}{\delta} - 1$, otherwise individuals would like to either consume all their lifetime income in period 1, or postpone consumption indefinitely.[25] On how the results extend to concave utility functions $u(c)$, see subsection 4.4.

We normalize x, the utility term from marital status, to be 0 for unmarried individuals. For man i, the utility of being married in period t is $X_i + \varepsilon_i^t$. The term X_i is individual-specific and known by the man ex ante, while ε_i^t is a match-specific random component that is unknown to him before entering the marriage. The latter represents the couple's (or the wife's and in-laws') unobservable level of compatibility. The distribution of X_i in each cohort is assumed to be continuous and have strictly positive density over R. The random term ε_i^t is conditionally independent of X_i, and for any potential bride it is distributed $N(0, \sigma)$. Intuitively, a higher X_i implies that man i is more

[25] Alternatively, we could simply assume no intertemporal substitution, which is arguably realistic in this setting.

eager to be married, while a higher ε_i^t means that man i has less incentive to separate from his current wife. Once ε_i is realized for a given wife, it remains the same for all subsequent periods if the man stays with the same woman. However, if the man separates and remarries, a new ε_i is drawn, which is independent of the previous realization.

In case of abandoning his wife, a man incurs an exogenous cost q.[26] In case of divorce, the man incurs an exogenous cost q', and has to pay an amount of money m_0, specified by the law, to his wife, plus whatever additional amount m the couple agreed upon in their marriage contract (see below).

To woman j, getting married provides individual-specific utility Y_j in each period of her life, which is known by her ex ante.[27] However, being divorced or abandoned imposes socioeconomic costs.[28] The total monetary costs that divorce imposes on the woman is $D_j > 0$, an individual-specific amount that is known ex ante. The monetary value of these costs in case of abandonment is kD_j, where $k \geq 0$. This specification allows for both the possibility that women prefer abandonment to divorce or the other way around. Note, however, that in any case remarrying is only a possibility for women in case she is officially divorced. The distribution of (Y_j, D_j) in each cohort is assumed to be continuous and to have a strictly positive density over $R \times R_+$.

Individuals enter marriages by signing a marriage contract. The contract specifies two parameters: (i) the dowry d, that is an amount of money that the bride has to pay to the groom at the time of marriage (allowed to be negative, in which case we call it bride price); and (ii) the mehr m, that is an amount of money that the husband has to pay to the wife in case of divorce. An important feature of the model, reflecting the institutional features of marriages in Bangladesh, is that parties cannot write enforceable contracts that specify transfers between the husband and the first wife in case the latter enters a polygamous relationship. That is, transfers conditional on divorce are contractible, but conditional on abandonment are not.[29] We also impose that, in accordance with Islamic religious tradition, the mehr specified in the contract has to be nonnegative.

Individuals' preferences over marriage contracts stem from the expected utility levels they imply, given rational expectations on divorce and separation probabilities. Furthermore, as a technical assumption, we impose that if two contracts (m', d') and (m'', d'') yield the same expected utility level for an individual, and $(m', d') \leq (m'', d'')$, then the individual prefers to sign the former one. That is, individuals have lexicographic preferences: primarily they care about the expected utility that the contract gives, but if two contracts yield exactly the same utility, then they prefer the contract with lower dowry and mehr. In the absence of this assumption there is a multiplicity of

[26] Part of this cost might be some maintenance to his previous wife, another part might stem from the social costs of abandoning the wife.

[27] Allowing for a random component, as in the case of the utility term for men, would not make any difference, since it is men and not women who decide whether to separate.

[28] Divorce also imposes a burden on a woman's family, as she will typically return to live with her parents or brothers. In this manner, threat of divorce creates incentives for women to maintain amicable ties with blood relatives to ensure support in case their marriage breaks down, which increases pressure to voluntarily give up inheritance claims to brothers or hand over prompt mehr to fathers (Asma, 1997).

[29] In some settings, though not Bangladesh, contracting over polygamy is possible. This is determined by the available specifications on the marriage contract.

equilibrium contracts if individuals are risk neutral, since women and men are indifferent between adding actuarially fair insurance contracts that pay off in case of divorce.

3.2 Stationary equilibrium

The most important features of the above model are the following: (i) Women and men are both heterogenous in how eager they are to get married, and their willingness to marry depends on the marriage contracts that are feasible to them in the market; (ii) Once married, all men are potentially tempted to marry another wife if the first match did not prove to be good enough. Women on the other hand would like to stay in the marriage because socioeconomic costs are imposed on them in case they get divorced or being abandoned. The financial cost to men of divorce and polygamy (the exogenously specified q, q' and m_0, and the endogenously selected m) serve as exit barriers for the man from the current marriage, therefore they affect the expected utility of women from being married.

Within this setup we investigate sets of contracts that can be part of a stationary equilibrium in the following sense.

Definition: A stationary equilibrium configuration consists of a set of contracts $\mathcal{C}$ and for each contract and each time period a set of marriages (that is, pairs of women and men who are available to marry that period) such that:

(i) for any $C \subset \mathcal{C}$, the same equal mass of women and men find it optimal to marry and sign some contract in C, as opposed to not marrying or choosing a contract from $\mathcal{C}/C$, in every time period;

(ii) no woman and man eligible to marry could simultaneously do strictly better by getting married to each other and signing a contract outside $\mathcal{C}$, relative to choosing some contract from $\mathcal{C}$, or not getting married.

Condition (i) captures two requirements: that the same number of women as men choose any equilibrium contract (demand is equal to supply), and that the number of couples choosing the contract stays constant over time. Condition (ii) imposes that no pair of woman and man could do better by getting together and negotiating a contract outside the equilibrium list.

Below we show that a stationary equilibrium contract configuration always exists in our model, and that the contracts offered in this equilibrium, as well as the fraction of people signing different contracts, are unique. Moreover, equilibrium contracts have a particularly simple structure.

Proposition 1: *(existence and uniqueness)* For any q, q', and m_0, there exists a unique stationary equilibrium. In equilibrium men are indifferent among feasible marriage contracts, while women with higher divorce costs choose contracts with higher mehr and pay higher amounts of dowry.

For the proof of all propositions, see the Appendix. Here, we summarize the steps of the proof, and describe some important features of the stationary equilibrium.

First, we can show that for any mehr level m, there is a unique equilibrium dowry level d, which is increasing in m. In particular, for any equilibrium contract (d, m), $d = d_0 + \pi(m)$, where $\pi(m)$ is the expected cost that specifying mehr m imposes on a man. That is, dowries in equilibrium can be decomposed into two parts: a base level dowry d_0, which is the same for all contracts, and the price of the mehr specified in the contract, which exactly compensates the man for promising this amount of mehr.

The cost that mehr m imposes on a man depends on the match quality realization, and the relative cost of abandonment and divorce. The latter difference imposes an upper bound on equilibrium mehr, since above a certain mehr level abandonment becomes less costly for men than divorce, so men choose the former.[30] For mehr levels below this threshold, the following holds. For high enough match quality, the mehr does not impose any cost, since the man prefers to stay in the marriage anyway. If the match quality is low enough, then it is optimal for the man to divorce despite the promised mehr, in which case the cost imposed on him by the mehr is exactly m. For in between match quality realizations, when the relative cost of staying in the marriage (net of the mehr) is $x \in (0, m)$, then it is better to stay in the marriage than paying off the mehr (and all other costs involved in divorce), which implies a cost of exactly x, that is the opportunity cost of being in this less than ideal marriage.

The above implies that an amount of mehr m creates an exit barrier for the man, and decreases the probability of divorce by a factor that is increasing in m.[31] Men face an optimal stopping problem: if the current match quality realization is high enough, then they stay in the marriage, otherwise they pay the exit costs and obtain a new draw. The mehr increases the exit cost, decreasing the threshold level for stopping. Hence, $\pi(m)$, which is part of the dowry in a contract with mehr m, can be thought of as the price of the corresponding exit barrier from divorce. Besides the mehr, the probability of divorce (and in general, separation), depends on d_0, too: everything else equal, a higher d_0 induces men to divorce more often (the threshold for stopping increases), since in case of remarrying they collect the higher dowry level again.

Given a set of potential marriage contracts as above, any woman j has a unique optimal available marriage contract, which only depends on D_j. The amount of mehr specified in the contract is increasing in D_j, that is women with higher cost of divorce acquire a higher level of exit barrier.

3.3 Regime changes and theoretical predictions

3.3.1 Regime I: Low Costs of Abandonment

In this regime we assume that the costs of abandonment and divorce are low. We think about the time period before 1961 in Bangladesh as described by this case.

Since men are otherwise indifferent between divorce and abandonment, they choose the one

[30] In particular, if $q < q' + m_0$, then the highest mehr level in equilibrium is 0, since then for any feasible mehr level abandonment is the cheaper option for men.

[31] This factor is equal to the probability that the match quality realization falls in the range $(\varepsilon^c - (1-\delta)m, \varepsilon^c)$, where ε^c is equal to the critical realization that induces a man to divorce in a marriage with mehr 0.

with the lower cost. Hence, if $q \leq q' + m_0$ then mehr is irrelevant: independently of the latter men never divorce, instead enter polygamy, and no contract can credibly constrain them in this decision. Hence, $m = 0$ in all marriage contracts.[32] If $q > q' + m_0$ then mehr might be positive for some marriages, but it can never exceed $q - q' - m_0 \leq q$, which we assumed to be small.

Corollary 1: *(mehr is small if cost of abandonment small)* The maximum mehr in equilibrium contracts is $\max(0, q - q' - m_0)$. For any finite q a positive fraction of men live in polygamy, and for low enough q every separation results in abandonment and polygamy.

The proposition implies that if the exogenous cost of abandonment for men is low, then mehr plays a limited role, and a relatively large number of men live in polygamy. Since at most a small fraction of dowries can be associated with the mehr, the bulk of dowry reflects "base level" dowry, which equates supply women and men in the marriage market.

3.3.2 Regime II: Infinite Costs of Abandonment

In regime II we assume that q is prohibitively high, therefore men cannot enter polygamous relationships. This assumption corresponds to the time period in Bangladesh after 1961.

In this regime, every unsuccessful marriage ends with divorce. Since prenuptial contracts over divorce are possible, but not prenuptial contracts over polygamy, this shift in the form of marital dissolution increases the role of mehr in the marriage contracts. The next theorem shows that in equilibrium couples set a mehr which, subject to the nonnegativity constraint, maximizes the joint surplus of the couple. This is a direct consequence of (stationary) equilibrium, as we defined above, since an inefficient contract could be renegotiated by the couple such that both of them are better off. If $m_0 = 0$, then the implication of this principle is particularly simple: couples set a mehr which induces the husband to stay in the marriage if and only if his net cost of staying in the marriage is smaller than the net costs to the wife of divorce (not including divorce transfers from husband to wife). In case $m_0 > 0$, couples set a mehr such that $m_0 + m$, the total transfer from husband to wife keeps the husband in the marriage if and only if this maximizes the joint surplus of the couple, subject to $m \geq 0$. The latter means that if $m_0 > 0$, then some women receive "too much" protection from divorce, because of the mandatory divorce transfer.

Corollary 2: *(efficiency of contracts if abandonment not possible)* If abandonment is infinitely costly, then the mehr that woman j chooses in equilibrium satisfies $m = \max(0, D_j + \delta[d_0 + \pi(m)] - m_0)$. This level of mehr maximizes the joint surplus of the couple, subject to $m \geq 0$.

Note that unless the $m \geq 0$ constraint binds, woman j is perfectly compensated for the costs divorce imposes on her: the sum of the social cost D_j and the cost of extra dowry needs to be paid in case of remarrying ($d_0 + \pi(m)$ one period later). The smallest mehr in the market, chosen by women with cost of divorce 0, is equal to the discounted value of the smallest dowry: $\underline{m} = \delta[d_0 + \pi(\underline{m})]$. If

[32] In practice, this translates into a token level of mehr since it is proscribed by religious tradition.

the $m \geq 0$ constraint binds (which can only happen if $m_0 > 0$), woman j is "overcompensated" in case of divorce.

The above result applies to both regimes II and III. The way we think about the 1974 legal change that separates these regimes is that it increased m_0, the amount of transfer a divorcing husband has to pay to his wife independently of the marriage contract. It can be shown that if alternatively we assumed that the legal change increased q', the administrative costs of divorce, the qualitative conclusions of the model would be the same as below.

3.3.3 The shift from polygamy to monogamy

Here we investigate the consequences of a shift from regime I (polygamy) to regime II (monogamy), corresponding to the 1961 legal change.

First, we point out that the welfare implications of this change are ambiguous, in the absence of restrictions on the parameters of the model. On the one hand, because divorce is a contractible event, while abandonment is not, the legal change improves welfare by bringing all separation into the contractible realm. On the other hand, the direct effect of the legal change on welfare depends on the relative cost of divorce versus abandonment for women. If k is small, that is women mostly care about being married "on paper", hence the cost that abandonment imposes on them is low, then making polygamy prohibitively costly might be welfare decreasing. On the other hand, if $k \geq 1$, that is the social costs of abandonment for women are at least as high as the social costs of divorce, then abandoning polygamy is unambiguously welfare improving.

The next result shows that if the relative cost of abandonment is high enough for women ($k \geq 1$), then the regime change unambiguously increases both mehr and dowry for every (marrying) woman in our model. The intuition for this is the following. Suppose first that the regime change does not change the level of base dowry. Then, since there is no upper bound anymore on the amount of credibly contractible mehr, women in general specify higher mehr levels. Next, observe that for the same level of base dowry both the probability of separation and the implied cost on the husband remains the same for any mehr level that was contracted on before the regime change. Hence, women still have the option to sign the same contracts as before, and since abandonment is at least as costly as divorce, obtain at least the same utility level as before. Therefore, the regime change makes all women better off. In particular, those women who can specify higher levels of mehr are strictly better off. This establishes that more women decide to get married, from every cohort. Furthermore, since in regime II every separation is a divorce, more women return to the market after failed marriages. All in all, the supply of women in the marriage market increases. At the same time, the unchanged level of base dowry implies that the supply of men in the market does not change. This argument establishes that the base dowry has to increase after the regime change in order to restore equilibrium in the market. This further increases the amount of mehr specified by every woman since it increases the cost of remarrying. Finally, an increase in base level dowry increases the cost that a fixed amount of mehr imposes on men, since it increases their incentives to divorce. Therefore the mehr-dependent parts of dowries increase too, implying an increase in

the total dowry a woman has to pay in equilibrium.

Proposition 2: *(change from polygamy to monogamy increases mehr and dowry)* If $k \geq 1$ then the change from regime I to regime II increases the chosen mehr and the dowry payment for every marrying woman.

In the opposite case, when $k < 1$, that is women, everything else being equal, prefer to be abandoned than to be divorced, the effect of the legal change on total dowry levels are ambiguous. On the one hand, base level dowries might decrease, since the higher probability of being divorced decreases the supply of women in the market if divorce is sufficiently worse than abandonment. On the other hand, the part of dowry associated with mehr is likely to increase, since in the new regime women tend to choose higher amounts of mehr. The over all effect on dowry depends on the relative magnitudes of these effects.

A somewhat surprising observation is that banning polygamy is unambiguously good for men.[33] The main factor behind this observation is that through the marriage contracts, men end up receiving some of the welfare benefits of the legal change.

3.3.4 Changing the minimal amount of divorce transfer in the monogamous regime:

The next theorem shows that the 1974 legal change, which translates into an increase in m_0 in our model, unambiguously decreases the mehr of every woman, and decreases the dowry of all women who specify nonzero mehr in equilibrium.

Proposition 3: *(an increase in the mandatory divorce transfer decreases both dowry and mehr)* The change from Regime II to Regime III decreases the mehr of any woman who decides to marry in equilibrium, and it decreases the dowry payment of all women who specify positive mehr after the increase.

The intuition behind this result is that a higher m_0 implies that there are more women who are forced to acquire inefficiently high exit barriers for their marriages, because of the nonnegativity constraint on m. This decreases social welfare, and the number of potential marriages with positive joint surplus. Therefore the number of men marrying from each cohort decreases in equilibrium, which implies that the base dowry increases by less than $\pi(m_0^{III} - m_0^{II})$, where m_0^{II} and m_0^{III} denote mehr levels in regimes II and III.[34] This implies that all women decrease the amount of mehr they choose in their marriage contracts, and the decrease is at least $m_0^{III} - m_0^{II}$, subject to the nonnegativity constraint on mehr. This implies that if a woman specifies a nonzero mehr after

[33] At the same time, although the change is good for most women, it is not good for all of them because of the increase in base level dowry. In particular, women with very low cost of separation become worse off since they mainly care about base level dowry.

[34] Note that $\pi(m_0^{III} - m_0^{II})$ would be exactly the amount of increase keeping men indifferent between the two regimes, given that after the regime change they have to pay $m_0^{III} - m_0^{II}$ higher transfers when divorcing, for any level of contracted mehr.

the regime change (the nonnegativity constraint does not bind), then the regime change decreases the price of her dowry by more than the increase in base level dowry. That is, her total dowry decreases.

The 1991, 1995, and 1999 supreme court rulings can also be associated with changes in the minimal amount of divorce payment: the 1991 and 1999 rulings reduced m_0, while the 1995 ruling increased it. Hence, Proposition 3 implies that our model predicts increases in dowry and mehr after the 1991 and 1999 rulings, and it predicts decreases in dowry and mehr after the 1995 ruling.

3.4 Risk aversion

If individuals have concave utility functions in consumption, then the mehr specified in marriage contracts serves not only as an exit barrier, but also as cross-insurance, which pays off in case of divorce. Because of this double role, characterizing the optimal contract for a couple is more complicated. In general, risk-averse individuals specify smaller mehr levels than risk-neutral ones. To see this, recall that with linear utility functions the mehr a woman specifies exactly compensates her for the costs divorce imposes on her, subject to the nonnegativity constraint. Hence, in equilibrium women are fully insured once married, while men take all the risks arising from the uncertain match quality. If men are risk-averse, then mehr in the optimal contract for the couple is in between the above amount and zero, implying that the couple shares the risks from uncertain match quality. Nevertheless, it can be shown that the qualitative results from the previous section extend to this setting: in equilibrium dowries can be decomposed into a base level dowry and a part that fully compensates men for the cost of mehr. Similarly, the directions of changes in equilibrium dowry and mehr levels after legal changes affecting the costs of polygamy and divorce are analogous to the risk-neutral framework.

3.5 Comparison with predictions from alternative models

In this subsection we argue that the predictions of our model with respect to the direction of changes in mehr and dowry levels after the main legal changes are distinct from predictions of traditional models in which dowry serves either a bequest role or a price role equating supply and demand in the marriage market, but without the possibility of marriage contracts specifying prenuptial agreements. We also show that the qualitative predictions of the model are different if we assume that the main impact of the 1961 and 1974 legal changes was not increasing the cost of abandonment and divorce as we assumed above, but increasing the probabilities of marriage contracts being enforced. Hence, our model generates a set of testable predictions that are unique and cannot be generated by alternative models considered in the literature, or by alternative interpretations of the legal changes considered.

3.5.1 Effect of the law changes in traditional models of dowry

Consider first any model in which dowry plays the traditional price role of equating demand and supply in the marriage market, but there is no possibility of signing a binding agreement that would affect later marriage outcomes and which could effect the dowry payment.[35] Since the 1961 legal change makes abandonment more costly, it simultaneously decreases the supply of grooms in the market and reduces the risk of marital separation. If women strictly prefer official divorce to abandonment or the added utility from marriage of reductions in likelihood of separation outweigh the disutility from the increase in probability of divorce, then the legal change would increase the supply of women in the market. Otherwise the change in the supply of women is ambiguous: on the one hand fewer women may want to marry from each cohort because of the increased likelihood of divorce, on the other hand divorced women, as opposed to abandoned ones, return to the marriage market, increasing the supply of women. All in all, without making more concrete modeling assumptions, we cannot distinguish the predictions with respect to the 1961 legal change from a pure price model relative to a model of dowry as compensation for mehr: if women prefer divorce to abandonment then dowry increases, while in the opposite case the direction of change is ambiguous. In contrast, the 1974 legal change unambiguously makes divorce more costly for men under a pure price model of dowry, which, in the absence of prenuptial agreements decreases the supply of men and increases the supply of women in the marriage market . Hence, after the 1974 change, a model in which dowry plays only a traditional price role has the opposite prediction than that of our model: an *increase* in dowries after 1974.

Consider next model in which the only motive behind dowries is leaving bequest to daughters. Dowries in principle are payments from the bride's families to the groom, but it is reasonable to assume that wives benefit from increases in the resources of husbands. However, this is only true as long as the couple stays together, since after separation it is reasonable to assume that the woman no longer benefits from the husband's resources (or at least she benefits less). Hence, the amount of dowry governed by bequest motives should decrease in the probability of separation. Since the 1961 legal change, by imposing restrictions on abandonment, decreased the probability of separation, the prediction of this model is an increase in dowries. The predicted effects of the 1974 law are the same since this amendment increased the cost of divorce for men. As a result, the predictions of this model are once again consistent with ours with respect to the 1961 but not the 1974 impact on dowry levels. The same conclusions would hold for models in which prenuptial agreements are absent but dowries serve both the price role and the bequest role as in Arunachalam and Logan (2006).

To conclude the above discussion, while the predictions of our model coincide with predictions from alternative models of dowry with respect to the 1961 legal change, our model's prediction concerning the change in dowry levels after 1974 is distinct from those of traditional models of

[35] A simplified version of the model presented in this section, with no marriage contracts specifying mehr, would be an example, but our analysis extends to a general class of models in which dowry is just a price that depends only on exogenous variables.

dowries without prenuptial agreements.

3.5.2 Effect of the laws on the enforcement of prenuptial agreements

Aside from alternative theories of dowry in which prenuptial agreements are absent and dowry is unrelated to mehr, it is also important to consider alternative interpretations of how legal changes might have affected mehr, within the context of models in which mehr affects dowry. The main alternative theory here is that the legal changes, instead of (or besides) changing the contract-independent costs of abandonment and divorce, affected the enforcement of prenuptial agreements specified in marriage contracts. In particular, both the MFLO and the MMDA could have increased the probability that the payment of mehr is enforced after divorce, or increased the expected fraction of mehr received by a divorced woman.[36] This was indeed one of the intended objectives of both the 1961 and the 1974 legal amendments.

To assess such a change could influence mehr and dowry levels, consider first risk-neutral individuals. If there is an increase in the probability that the mehr specified in the contract is enforced, or in general an increase in the expected fraction of the mehr enforced, risk-neutral couples will specify mehr levels that yield exactly the same level of expected enforced mehr as before. That is, they will equate the expected values before and after the change. This results in decreased mehr levels after both legal changes, while dowry levels are unaffected since only "nominal" mehr levels are changing, not actual expected mehr transfers in case of divorce.

The prediction for risk-averse individuals is similar in that mehr levels specified in the contracts should decrease after both legal changes, but now dowry levels might increase. This is because increased enforcement might make the estimate of the actual mehr payment more precise, increasing the efficiency of the marriage contracts for risk-averse individuals. This efficiency gain increases the number of individuals marrying, which has to operate through an increase in base level dowry since men are indifferent among all equilibrium marriage contracts, including the one that specifies zero mehr and hence no uncertainty.

To summarize, the above alternative interpretation of the effects of legal changes on mehr implies that mehr levels decrease and dowry levels either stay constant or increase after both the 1961 and the 1974 legal changes, that are in contrast with the predictions of our model with the interpretation that the legal changes operated mainly through altering the costs of abandonment and divorce for men.

[36] In our theoretical model, for simplicity we assumed that mehr is enforced with certainty. However, our model would still be valid if the probability of enforcement, p was less than 1. In this case, the equilibrium would remain the same as in the original model, with the exception that all couples would specify a mehr that is $1/p$ times the original level, to keep the expected mehr, hence the level of exit barrier unchanged.

4 Empirical Evidence

4.1 Data

To test the predictions of the model, we use household data from the 2004 Bangladesh Rural-Urban Linkage Survey (BRULS), a random sample of households in Rajshahi Division, one of the six administrative divisions of Bangladesh that covers approximately one quarter of the country in both area and population. The division is commonly known as the "breadbasket" of Bangladesh, and its largest industries are jute, silk, fruit and rice.[37]

The BRULS was a follow-up study to the 2000 Household Income and Expenditure Survey (HIES) conducted by the Bangladesh Bureau of Statistics. Among the 9800 HIES households, the majority of the 1360 rural households in Rajshahi were re-contacted between December 2004 and January 2005, yielding a final sample size of 1271 households representative of 78 villages and 16 districts in the region. Since the majority of households that relocated within Rajshahi were successfully tracked, the 6.5% attrition rate primarily reflects the rate at which sample households moved outside of the region between 2000 and 2004.[38]

As a panel with the HIES, the 2004 data contain detailed information on household food and non-food consumption, in addition to dwelling characteristics, agricultural and non-agricultural enterprises, assets, credit, savings, time allocation, social capital, community characteristics, and education, health, employment of current and previous household members. In addition, a module was added to the 2004 questionnaire for the purposes of this study in which the following marital history data were collected for all ever married individuals in each household and all children of the head not residing in the household: year of first marriage, dowry amount and form (up to three types), ownership rights over dowry (up to three types), amount of mehr specified on the marriage contract, who chose the first spouse, and first spouse's age, education and parents' wealth relative to own parents' wealth. These data are rare in that they asked marital history questions of both husbands and wives, unlike, for instance, the BDHS which only interviews women. In the analysis sample, real values of mehr and dowry in 2000 prices are constructed using a price index based on the annual average price of jute (nationally), the most common agricultural product produced in the region over the entire period.[39]

[37] The regional nature of the survey is relevant for the external validity of the findings even inside of Bangladesh, since marriage practices vary quite a bit by region. Nationwide findings from the BLAST survey (2004a) suggest that the change in dowry over time may be more acute in the Northwest region: While the amount of dowry received by older males was lowest in the Northwest, younger men in the Northwest received an amount of dowry comparable to the national average. The same study found that only 50% of marriages (spanning a wide range of years) in Rajshahi had involved prior agreements regarding dowry gifts, relative to 95% of marriages in the Sylhet region where dowry is most common. Although the years and wording of the question are distinct, the BLAST figure is comparable to the fraction of marriages involving dowry that we find in the BRULS over the same period.

[38] An additional 200 households in Rajshahi were also interviewed as part of a supplementary study of contract farming; these households are excluded from the analysis as marriage questions were not asked.

[39] Since the nation of Bangladesh is relatively new, their are no official price indices available for the entire period of interest that correspond reasonably well to expected changes in regional prices. An alternative price level adjustment was constructed from the national consumer price index series available between 1972 and 2004, adjusted backward according to the price of jute for years prior to 1972. None of the estimates or patterns are sensitive to the choice of price deflator.

4.2 Sample

The primary analysis sample considers only ever-married male heads or spouses and children of heads. A total of 6.67 percent of the sample with missing information on dowry and/or mehr amounts are excluded from the sample (272 observations). In addition, seven percent of the sample is non-Muslim (289 households) and are therefore excluded from the analysis, along with individuals under 18 and over 65. This leaves 1368 women between the ages of 18 and 65.

4.3 Trends in Marital Separation

Our first set of evidence on the validity of our predictions regarding the response of dowry and mehr to legal reforms enacted in 1961 and 1974 comes from examining trends in marital separation over the period of interest. Unfortunately, data dating back to the 1960s or even 1970s on either divorce or polygamy rates in Bangladesh is extremely scant, largely because marriage and divorce registries that collect aggregate statistics were not established until the 1970s.[40] Hence, we are restricted to examining historic trends in marriage separation rates using imperfect measures of divorce and limited data points on polygamy.

As a first approximation, we use retrospective data from the BRULS to construct an indicator of whether a man's first marriage ended in divorce. The BRULS collected information on current marital status of all household members and whether current marriage is the first marriage of each member. We approximate whether a man has ever been divorced with an indicator equal to one if he is either currently divorced or separated, or currently married and his current marriage is not his first. Without direct information on the reason a first marriage ended, this is an imperfect measure since it confounds divorce with widowhood followed by remarriage and may miss some divorces that are followed by widowhood (in which case the man presumably classifies himself as widowed). However, measurement error is likely to be small given that men have a low probability of being widowed, and there is no ex-ante reason to expect measurement error to be correlated with age.[41] Hence, changes in this measure across years of marriage is still likely to pick up time trends in divorce relatively well, although it may inflate levels.

Figure 1 shows the trend in divorce rates implied by our measure. The data indicate a large reduction over the past 30 years in first marriages that ended in divorce. Since the likelihood that a marriage has ended is increasing in the length of the marriage, data prior to 1994 (or marriages fewer than ten years duration) should be ignored. However, given that 95 percent of all divorces occur within 5 years of marriage, the general decline between 1960 and 1990 almost surely reflects a change over time in the hazard of divorce rather than duration dependence. Even more striking, the data show that divorce is extremely rare in present day Bangladesh and has been since the late 1980s, a departure from marriage patterns in other Muslim countries in which divorce is far more

[40] Prior to that time, marriage and divorce were recorded in contracts held by individuals and possibly by local religious authorities, but never systematically organized. Even today, registry data is kept by district authorities and unavailable at the national level.

[41] If anything, a man's probability of being widowed by age x is rising with year of marriage since age differences between spouses is falling over time, which biases us against finding a downward trend in divorce rates, as is predicted.

common. In Saudi Arabia, for example, recent divorce statistics indicate that approximately 20% of marriages end in divorce (Al-Homaydan, 2006).

There are two important observations to note from this figure: First, divorce rates appear to have risen post-MFLO. Second, they appear to have fallen by the early 1970s - prior to the MMDA - from levels attained in the early 1960s. Both facts imply that the enactment of the MMDA was not the only factor putting downward pressure on divorce rates over this period, as has been suggested in previous work.

Our theoretical model predicts a decrease in the total rate of marital separation - which includes both divorce and polygamy. Unfortunately, historic data on polygamy are even harder to construct than data on divorce, even with detailed survey data. Data on polygamy are almost universally confined to currently-married individuals, which greatly limits the use of cross-section data to back out trends (since a large fraction of women over 45 are widowed, women who were ever in polygamous unions are increasingly less likely to be so as they age). Furthermore, polygamy is notoriously underreported by women in household survey data (Kalin, 2001). Hence, to examine changes over time in polygamy we rely on data points collected from demographic surveillance systems (DSS) at different points in time.[42]

A general feature of marriages in Bangladesh is that since the 1961 MFLO made entering a polygamous relationship entail stringent financial requirements, poorer regions of the country have a lower fraction of polygamous relationships. Available data from relatively poor regions confirms that the ratio of polygamous relationships is very low and decreasing over time. In the region of Chittagong (district of Matlab), only 5 percent of marriages were polygamous in the region in 1982 and only 2.3 percent in 1996 (Alam et al., 2000; Joshi, 2004). In the BRULS data, less than 0.5% of men are currently in polygynous marriages.[43] Even in richer regions, where polygamy rates are higher, we observe a decreasing trend: DSS data from the region of Teknaf, indicate that 17.5 percent of marriages were polygamous in 1982 and roughly 10 percent in 2000 (Alam et al., 2000).

Prior to 1961, the only information on polygamy comes from historical documents, in which there are no specific data points but numerous references to worrisomely high polygamy rates prior to the enactment of the MFLO (Cain, 2003). In fact, this was one of the central motivations religious leaders had for enacting the MFLO, which claimed to "align our family institutions with ideals taught by our religious leaders" (Hussein, 1985).[44] Exactly how high is "worrisome" is

[42] Unfortunately, even DSS data are incomplete for our purposes, since marriage registration only became mandatory in 1974 with the MMRA, at which point they were first tracked at DSS sites along with births and deaths.

[43] Statistics form cross-section survey data generally underreport the fraction of married men who are ever married to more than one woman at the same time, since data is only collected on whether husband currently has more than one wife. Hence, marriages in which either the husband or one of the wives has died are not recorded as polygynous marriages. There is also a big concern over underreporting of polygynous marrigaes by women in household surveys, since abandoned wives may prefer to report that they are divorced, separated or widowed. For this reason, DSS data is considered more reliable for measuring polygamy.

[44] According to one source: "The debate regarding polygamy began in earnest in the mid-1950s, when a former prime minister of Pakistan, Mohammad Ali Bogra, decided to take his secretary as his second wife. Angry women activists, many of them respectable housewives, took to the streets insisting they would not allow polygamy. They also argued that the relevant verses in the Holy Quran maintaining that a man must treat all wives equally was, in effect, a ban on the practice since equal treatment was not possible. The protests resulted in strict curbs on polygamy

unclear from these records, but for comparison, on average 12% of Muslim marriages in the world are polygamous, and 8% of marriages in Muslim countries outside of Africa, so it is reasonable to assume that rates of polygamy in Bangladesh prior to the MFLO were substantially higher than current levels.[45]

4.4 Trends in Dowry and Mehr

Our central empirical analysis examines the relationship between changes in legal regimes and changes over time in real values of dowry and mehr. Figure 2 plots the fraction of marriages by year that involved dowry payments from the bride's parents to the groom, which increases steadily over time. The figure also shows that dowry participation became relatively high beginning in the 1960s rather than the 1970s as has been suggested in the past. Figures 3 and 4 plot by year of marriage average values (in 1980 taka) of mehr specified on the marriage contract and dowry given from the bride's family observed in our sample of first marriages from the BRULS. Both figures indicate clear changes in levels of mehr and dowry that correspond to important legal changes: Both mehr and dowry are low until the early 1960s, after which point they rise steadily and remain high between 1966 and 1974. After 1974, we observe a dramatic reduction in both components to levels above those observed in 1960 but well below the peak levels observed in 1966-1974. Both remain relatively constant from 1976 to 1998, and then appear to rise again beginning around 2000.

Figure 5 plots alongside total amounts of dowry average level of "bequest dowry", or dowry that is reported to be given from the bride's family exclusively to the bride. Here we see a gradual upward trend in the amount of bequest dowry, but one that appears to be independent of legal changes. Unfortunately, because of the structure of survey questions, these figures only consider *pure* bequest dowries, and do not take into account dowries that are part bequest and part gift to groom. While we cannot know the amount of dowry given to bride when dowry takes both forms, we can plot the fraction of marriages in which *any* dowry is given to the bride (Figure 6), which appears to be relatively stable over the entire period.

Table 1 presents summary statistics for the full set of variables used in the regression analysis. As seen on Figure 3, amount of mehr specified on the marriage contract jumps after 1962 - doubling in magnitude from regime 1 to regime 2, then falls again after 1974 and remains fairly constant until 2000, after which point a significant rise - amounting to 50 percent of real value - is again observed. Meanwhile, as documented in Figure 2, the fraction of marriages that involve dowry triples from period 1 to period 2, then doubles post-1974, and continues to rise slowly thereafter, reaching 77 percent after 2000. However, the value of dowry transfers from bride to groom (as illustrated in Figure 4) is non-monotonic, following the same pattern as mehr: dowry amounts increase sharply after 1962, then fall immediately after 1974, and rise thereafter. By the 1990s, dowry values have returned to the level observed between 1962 and 1973. Finally, as observed in Figure 5, the fraction

under the Muslim Family Laws Ordinance of 1961, including a premarital consent from the first, or former wives before a man could marry another woman." (Hyatt, 2006)

[45] The rates vary widely from country to country. In Tunesia, polygamy has been outlawed altogether, while in Senegal polygamy is relatively common (47% of marriages).

of marriages in which all dowry is designated to be property of the bride rises after 1962, then remains relatively constant between regimes 2 and 3, and finally rises slightly from 1974 onward.

5 Regression Estimates

5.1 Basic Specification

We test for the statistical significance of the observed shifts in mehr and dowry that correspond to changes in legal regimes by estimating the following regression for couple i married in period y in region r, which includes fixed effects for region of residence (r) and 8-year period of marriage (y):

$$Y_{iyr} = \alpha_{yr} + \beta\mu_{iyr} + X_{iyr} + \epsilon_{iyr}$$

In this equation, μ_y is a vector of four dummy variables that separates the range of marriage years into five distinct legal regimes, 1956-1961 (pre-MFLO), 1962-1974 (pre-MMRA), 1975-1990, 1991-1998, and 1998-2004. We are interested in the coefficient estimates on the variables contained in μ_y, which indicate the level shifts in dowry and mehr that correspond to the changes in legal regime, conditional on a linear time trend in year of marriage and non-linear shifts in Y across 8-year periods.[46]

In the baseline specification, X includes year of marriage and whether the respondent was male. We also estimate the above regression with a wider set of control variables, including age, education and relative wealth of bride and groom at the time of marriage. Since these variables have the potential to be influenced by laws governing marriage, we present the results from the baseline specification alongside the saturated model for comparison. In all regressions, standard errors are clustered by household.

In the absence of a control group that is not influenced by the law but otherwise subject to identical time trends in marriage behavior, identification relies entirely on pre-post comparisons. Hence, our estimates will capture the causal influence of legal rulings on equilibrium marriage payments in year t in the absence of third factors that coincided with the regime shifts in timing and direction of influence on marriage outcomes. While a great deal went on during this period in Bangladeshi history, given that the full set of predictions spans includes four distinct events that had non-monotonic influence on dowry and mehr, confounding time trends would require a complex set of external events. In addition, since the law changes of 1961 and 1974 were motivated by similar concerns and trends in legislation (ensuring that marriages followed religious law and were registered), circumstances that gave rise to the law changes are unlikely to be independently responsible for changes in mehr and dowry at these two junctures in opposite directions. To account for time trends as much as possible, our estimates include a linear trend along with seven period dummies that introduce flexibility into underlying trends in marriage payments that may by

[46] The estimates are robust to including a squared term for year of marriage. They are also robust to alternative cutoff points and lengths of period fixed effects, though the marginally significant results become insignificant when shorter periods are used.

nonlinear. Robustness checks add available measures of economic trends, including annual rainfall and GDP, which are available only for the post-Independence years (1971 onwards).

5.2 Difference-in-difference Specification

To gain more traction on the empirical findings, in the second set of estimates we make use of spatial variation in the likelihood that a household was influenced by the legal changes based on the administrative level of the upazila, or division subdistrict, in which the marriage took place. In particular, we classify each marriage according to whether the village is either a municipality or subdistrict headquarters, which determines access to local government bodies. A subdistrict (or upazila, or thana) is a geographic unit of approximately 50,000 households. Within all 119 subdistricts in the division of Rajshahi there are 39 municipalities, which was the smallest administrative level before 1980. In addition, each subdistrict has a headquarters village where local government bodies representing rural areas are located.

The basic idea underlying this distinction is that, while marriage contracts are part of a traditional marriage ceremony for the majority of Muslim households even in very remote areas, presumably the extent to which these contracts are considered enforceable is a function of the availability of local officials who can officiate and enforce such agreements at the point of both marriage and divorce, which includes both kazis and local government chairmen.[47] Hence, dividing our sample into remote and less remote villages gives us a control group of households that we expect to be little influenced by law changes such as the 1961 Muslim Family Law Ordinance since their marriages are unlikely to have been officially endorsed by a traditional kazi, nor would they have had ready access to a union parishad (UP) council upon dissolution of the marriage.

In contrast, since the 1974 ordinance was intended to strengthen the 1961 ruling by giving existing kazis jurisdiction over all unions, we expect remote areas to experience a positive increase in the use of mehr provisions in marriage contracts in these areas on the extensive margin at the same time that we observe levels of mehr falling in less remote areas where marriage contracts were already being registered.

Using non-headquarters as a control group, we estimate the following difference-in-difference equation:

$$Y_{iyr} = \alpha_{yr} + \beta_1 \mu_{iyr} + \beta_2 m_{iyr} + \beta_3 (\mu * m)_{iyr} + X_{iyr} + \epsilon_{iyr}$$

[47] Local government in urban and rural areas is entrusted to bodies elected by the people, referred to as Municipalities (Pourashavas) in urban areas and Union Councils (*Parishads*) in rural areas, the basic unit of political administration (BBS, 1993). A representative body of roughly 100,000 people, its functions include a range of duties from socioeconomic development to general administration such as divorce record-keeping. For instance, a divorce must initially be filed with a UP chairman (the kazi registers the paperwork once it is finalized). For divocrce proceedings that go to court, family courts are located at the thana level, so the closest court for divorce proceedings will be the thana headquarters. Villages located in areas that are municipalities iwl have the additional advantage of being more likely to have a local kazi who can register the marriage document, particularly prior to 1974. After 1974, kazi were finally incentivized to cover all rural areas so that registration becoame much more accessible for all.

In this specification, m is whether a household was sampled from a union headquarters or municipality. Of the 76 separate unions in our sample, approximately half (37) fall into this category. As a robustness check on the difference-in-difference estimate we also make use of an alternative control group formed by classifying villages according to the median pre-1974 rate of dowry participation, averaged across sample years. Here the idea is that, in areas in which dowry participation was low (presumably much of which is due to institutional constraints), the impact of the 1974 law on the extensive margin should dominate its effect on the intensive margin, hence, the net effect will be a decrease in mehr. In contrast, in areas in which dowry participation was relatively high, movement on the intensive margin will dominate the increase in participation resulting from greater contract enforcement.

In both sets of regressions, it is important to keep in mind that our estimates capture the causal influence of legal regimes on *individual* marriage payments - our central parameter of interest since it links directly to predictions from our theoretical model - only insofar as the laws do not have a substantial effect on marriage market sorting. For instance, if a law reduces dowry for the reasons hypothesized in our model, changes in dowry requirements could postpone or hasten marriage for credit-constrained families, which could have secondary effects on equilibrium dowry. While impossible to rule out (and in fact likely to matter for some group of individuals), this type of substitution effect will in general bias downward our estimated effect of the law.

Potential direct effects of the legal regime on marriage market sorting that are outside the scope of the model are more complicated to assess. For instance, if marriage registration led individuals to marry more readily spouses from villages that are further away (or closer), this behavioral response could have implications for marriage payments. We explore this issue empirically after discussing the main results by examining the effect of the law on observable bride and groom characteristics. We further address the issue of endogenous marriage timing with the more conservative specification based on legal regime at the time a woman is 13 rather than in her year of marriage. However, our discussion of initial results rests on both of these assumptions.

5.3 Results

Table 2 presents the main regression results.

We first discuss the estimated changes in mehr (columns 1 and 2). In regressions both with and without controls for bride and groom characteristics, the coefficient estimates indicate a substantial and statistically significant increase in the amount of mehr specified on marriage contracts after 1961. According to the regression estimates, the estimated value of mehr more than tripled after 1961, which is evident from Figure 3. Furthermore, the regression estimates and unconstrained time trends reveal a sharp and significant decline in the level of mehr specified on marriage contracts post-MMRA (1974).

With respect to the Court rulings of 1990 and 1999, the coefficient estimates are in line with our predictions in direction and magnitude, however the statistical significance is not robust across specifications. In columns 1 and 2, mehr rises by a moderate amount after 1990 and the trend

break is significant at the 10% level. However, while the point estimate of the coefficient on the dummy for marriages post-1998 is large, it is far from significant. This is not surprising given the limited number of marriages observed in the final period over which this trend can be estimated.

Next, we look at the estimated changes in dowry (columns 3 and 4). The results indicate that dowry rises after the MFLO and falls after the MMDA. Again these results are unaffected by the inclusion of spouse characteristics. As illustrated in Figure 4, the estimated rise post-MFLO is large and the fall post-MMDA only slightly smaller. Furthermore, the result is unchanged when we set to zero the value of dowry that is said to be property of the bride, in an effort to exclude pure bequest dowries (column 5).

The estimate in the last column (6) pulls together the results from columns 1 and 3 to calculate the average "price" of mehr in terms of dowry over the entire period using a two-stage least squares estimate in which the excluded variables are those contained in μ_y. In this estimate, the fist stage equation calculates the change in mehr in response to legal changes and the second stage uses variation in mehr induced by the regime changes to estimate the change in dowry that corresponds to different levels of mehr. The estimate indicates that each additional 1000 taka of mehr on average corresponded to a 216 taka increase in dowry. At these rates, over the entire period we should observe a 7560 taka increase in dowry that reflects pure compensation to husbands for divorce prevention, which explains roughly 30% of the net increase in dowry from the beginning to the end of the period. With respect to the legal changes in the 1990s, in the baseline specification and the model with demographic controls, dowry levels appear to be rising after both 1991 and 1998, but there is no indication of a significant break in these years. However, when dowries given purely as bequests are exclude from the regression, the estimated increases corresponding to the final two periods attain significance.

For all regressions, F-tests confirm the joint significance of the set of legal dummies.

Tables 5 and 6 present results from the difference in difference estimates. Here we observe two basic patterns: First, the rate of dowry participation indeed rises in remote subdistricts and falls in more central subdistricts in response to the 1974 change, illustrating the dual impact of the law on contract enforcement and demand for divorce prevention. This is also reflected in the coefficients on the 1974 dummy when regressed on the value of mehr, and robust across both DID specifications. As a consequence, change in value of mehr is entirely concentrated in more urban areas where the second effect predominates. Second, the 1961 law appears to have only had an impact on levels of dowry and mehr in more central areas where family courts and kazi were available to enforce marriage contracts.

5.4 Robustness Checks

Since marriage timing may be affected by the law changes, we also estimate equation 1 replacing the dummy indicators contained in μ_y - which indicate whether a respondent was married by the time of each law change - with indicators of whether a respondent had turned 13 by the time of each change. Results from these regressions are presented in Table 3. In this fairly demanding

specification, all results are unchanged except for the estimated effect of the MFLO on mehr, which switches signs and loses significance when year of marriage is replaced by year of birth. All other coefficient estimates on variables contained in μ_y are unaffected. A likely explanation for the increased imprecision on the MFLO dummy is that a greater number of girls got married before age 13 at that point in time, so the results will be more sensitive to the choice of age at which marriage decisions are made (hence girls who were 13 in 1963 will be classified as "after" the change, even if they married at age 11, before the change). Since dowry took longer to respond to the law change, misclassifying affected and unaffected girls in this manner will make less of a difference to the point estimates across specifications.

To test whether our coefficient estimates are mistakenly picking up time trends in marriage payments that are independent of legal rulings, we run two placebo tests, the results of which are presented in columns 1 and 2 of Table 4. The first isolates the sub-sample of marriages among Hindu families that were randomly drawn from the selected enumeration areas as part of the survey sample. This comparison is similar to the identification strategy used by Esteve-Volart (2004). Hindus are an appropriate control group for studying time trends in dowry since most Hindu marriages involve dowry, but are not subject to Muslim Family Law governing polygamy or divorce. Hence, they should be unaffected by the legal regime changes. Indeed, the results in column 1 provide no evidence of external forces driving observed patterns of dowry evolution.

Our second placebo test replaces the dependent variable with dowries given as bequest from a parent to a daughter. As described in Section 4, we have no reason to expect bequest dowries to respond in the predicted manner to legal changes since they cannot by definition be a form of compensation to the groom in exchange for marriage contract terms that are favorable to the bride. If anything, bequest dowries can be expected to rise in response to the laws passed in both 1961 and 1974 and fall in response to the rulings of 1990 and 1999. Indeed, there is no evidence that the limited amount of dowry given entirely to a bride changes in level or frequency (unreported) in conjunction with the legal rulings (column 2, Table 4).

To study further whether there is evidence of sorting effects in the marriage market that could be biasing our results, the final two regressions in Table 4 examine the impact of legal regimes on characteristics of brides and grooms - bride's age and the age difference between bride and groom. Once again, we find no evidence of significant changes in marriage timing or choice of spouse in response to the rulings.

6 Conclusions

Our results provide evidence that an important component of dowry in the Bangladeshi context is payment from a bride's family to the groom in exchange for higher prenuptial agreements, which impose exit barriers to a husband divorcing his wife through talaq. Our estimates indicate that this aspect of dowry could be responsible for a large amount of the observed variation in dowry levels and participation over time, including recent "dowry inflation" that has been discussed extensively

in the literature: We estimate that dowry response to legal changes account for approximately 30% of the observed increase in average dowry over the last 50 years. In contrast, our empirical examination of bequest dowries provides little direct evidence that dowry increases are going to women as a form of bequest in this context, as has been hypothesized in past work.

These findings indicate that enforceable marriage contracts governed by Muslim Family Law among nearly one fifth of the world's population serve to generate more efficient marriage market outcomes and possibly counterbalance external forces that may be exerting upward pressure on divorce rates. Furthermore, they imply that dowry is more likely to fall if social penalties on divorce fall than if female economic opportunities increase without shifting stigma of divorce. In fact, our model suggests that the latter could lead to an increase in average dowry payments. In this manner, laws governing polygamy and divorce, commonly intended to protect women from unfavorable marital outcomes exacerbated by the gender inequality in legal rights, may under certain circumstances have unintended economic consequences for women in the form of increasing equilibrium dowries.

Our findings highlight the role of both religious and legal institutions in influencing trends in marriage payments as well as other outcomes (divorce and abandonment). Marriage outcomes have obvious implications for poverty in developing countries through their influence on outcomes such as fertility and investments in child health and education. Understanding the origins of such institutions is therefore critical to predicting their interaction with economic development. The fact that dowries appear to be rising in both India and Pakistan makes the question one of current and not just historical importance (Rao, 1993a, 1993b).

The focus on legal institutions underscores the importance of the contractual nature of marriage under Islam and the unique interplay between family law and marriage practices that depends heavily on interpretations of Q'aranic guidelines by local religious courts.

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8 Appendix A: Bangladesh Marriage Registration Form (Translated by Sultana Kamal)

Form of Nikahnama Prescribed by Clause 9 of the Muslim Marriage and Divorce (Registration) Act, 1974.

1. Name of ward, town, union, tahsil, police station, and district where marriage took place.....
2. Names and addresses of the bridegroom and father.....

3. Age of the groom.....

4. Names and addresses of the bride and father.....

5. Whether the bride is a virgin, widow or divorcee.....

6. Age of the bride.....

7. Name and address of the pleader on behalf of the bride, if appointed....

8. Names, fathers' names and addresses of the witnesses in connection with pleader's appointment and their relationship with the bride. (2).....

9. Name and address of the pleader on behalf of the groom, if appointed
.....

10. Names, fathers' names and addresses of the witnesses in connection with the appointment of the pleader on behalf of the groom. (2) .....

11. Names, fathers' names and addresses of the witness to the marriage. (2).....
.....

12. Date of betrothal.....

13. Amount of dower.....

14. Amount of prompt and deferred dower.....

15. Whether any amount of the dower has been paid at the time of marriage? If so, how much?.....

16. Whether any transfer of any kind of property has been made in lieu of the agreed amount of dower or part of it?.....

17. Any special conditions.....

18. Has the groom delegated his wife the power to divorce? If yes, what are the conditions?.....

19. Has the husband's right to divorce been curtailed by any condition?....
.....

20. Has any document been made in connection with dower, maintenance? If so, describe
.....

21. Whether the groom has any other wife/wives and if yes, whether he has obtained permission from the Salish Council (Arbitration Council) for the marriage as per the Muslim Family Law Ordinance 1961?.....

22. Number and date of letter of permission from Arbitration Council for the marriage.....

23. Name, father's name of the person solemnizing the marriage.....

.....

24. Date of marriage registration.....

25. Amount of the Registration Fee paid.....

Signature of the Groom.....

Signature of his pleader.....

Signature of the witnesses regarding appointment of the pleader.....

Signature of the Bride.....

Signature of her pleader.....

Signature of the witnesses regarding appoinment of the pleader.....

Signature of the witnesses of the marriage.....

Signature and seal of the Marriage Registrar.....

Signature of the person solemnizing marriage.....

9 Appendix B: Proofs

For ease of exposition, instead of stationary equilibrium we just write equilibrium.

Let $\varphi()$ denote the density function of $N(0, \sigma)$.

Lemma 1: In every equilibrium, if $(d, m), (d', m) \in \mathcal{C}$ for some $m \geq 0$, then $d = d'$.

Proof: Suppose $(d, m), (d', m) \in \mathcal{C}$ and $d \neq d'$. Since match quality has the same distribution for all potential wives, and the costs of exiting a marriage only depend on the mehr specified in the marriage contract, no man would ever choose to sign the contract with the lower dowry among (d, m) and (d', m), a contradiction. QED

For any equilibrium and any $m \geq 0$, let d_m denote the amount of dowry such that $(d_m, m) \in \mathcal{C}$ (if there exists one).

Lemma 2: In equilibrium, there is ε^c such that if man i is married at t and the marriage contract specifies $m = 0$, then $\varepsilon_i^t < \varepsilon^c$ induces him to separate at the end of t, while $\varepsilon_i^t > \varepsilon^c$ implies that he stays in the marriage.

Proof: Since all men who are eligible to marry and have the same marriage value parameter X face the same decision problem at the beginning of period t, their continuation payoffs in equilibrium are equal. Moreover, since the set of available contracts is the same in every period in stationary equilibrium, this continuation payoff is indepenedent of t. Denote the above continuation value by $V(X)$. Note that $X' > X$ implies $V(X') \geq V(X)$, since a man with marriage value parameter X' can generate at least the same expected payoff as one with marriage value parameter X, if following the same strategy as the latter.

Because of the stationarity of the decision problem, a man either finds it optimal to stay in a marriage forever, or divorce at the end of the first period of marriage, immediately after the match quality was revealed. Let $c_0 \equiv \min(-q - m_0, q')$. A man with marriage value parameter X who forever stays in a marriage with $m = 0$ and match quality realization ε gets $\delta \frac{u(e)+X+\varepsilon}{1-\delta}$ (that is, payoff $u(e) + X + \varepsilon$ in all future periods, starting with the next), while leaving the marriage yields continuation value $-c_0 + \delta V(X)$. Hence, if $\delta \frac{u(e)+X+\varepsilon}{1-\delta} > -c_0 + \delta V(X)$, that is $\varepsilon > (1-\delta)V(X) - \frac{1-\delta}{\delta} c_0 - u(e) - X$, then staying in the marriage forever is better than immediately divorcing. If $\varepsilon < (1-\delta)V(X) - \frac{1-\delta}{\delta} c_0 - u(e) - X$, then immediately divorcing is better. Let $\varepsilon^c(X) \equiv (1-\delta)V(X) - \frac{1-\delta}{\delta} c_0 - u(e) - X$.

Note that $V(X) < \frac{u(e)}{1-\delta}$ implies that men with marriage value parameter X stay out of the marriage market. Next we argue that if $V(X), V(X') \geq \frac{u(e)}{1-\delta}$ then $V(X') - V(X) = \frac{X'}{1-\delta} - \frac{X}{1-\delta}$. This is because for men with marriage value parameter X, and similarly for men with marriage value parameter X', one optimal strategy involves always getting married. Let s_X and $s_{X'}$ denote such strategies. Then a man with marriage market value X' can obtain expected value $V(X) + \frac{X'-X}{1-\delta}$ by following s_X, and a man with marriage market value X can obtain expected value $V(X') + \frac{X-X'}{1-\delta}$ by following $s_{X'}$. The first observation establishes $V(X') - V(X) \geq \frac{X'}{1-\delta} - \frac{X}{1-\delta}$, while the second one establishes $V(X') - V(X) \leq \frac{X'}{1-\delta} - \frac{X}{1-\delta}$.

Since $\varepsilon^c(X) = (1-\delta)V(X) - \frac{1-\delta}{\delta}c_0 - u(e) - X$, the previous result establishes $\varepsilon^c(X)$ is independent of X for any men who ever get married in equilibrium. This establishes the claim in the lemma. QED

For any $m \geq 0$, let $c_m = \min(q, q' + m_0 + m)$.

Lemma 3: In equilibrium, if man i is married and the marriage contract specifies $m \geq 0$, then $\varepsilon_i^t < \varepsilon^c - (1-\delta)(c_m - c_0)$ induces him to separate at the end of t, while $\varepsilon_i^t > \varepsilon^c - (1-\delta)(c_m - c_0)$ implies that he stays in the marriage.

Proof: By the previous lemma, for any man i it holds that $\delta\frac{u(e)+X_i+\varepsilon^c}{1-\delta} = -q - m_0 + \delta V(X_i)$. This implies $\delta\frac{u(e)+X_i+\varepsilon^c\varepsilon^c-(1-\delta)(c_m-c_0)}{1-\delta} = -c_0 - (c_m - c_0) + \delta V(X_i)$, which establishes the claim. QED

Lemma 4: In equilibrium any man is indifferent among all marriage contracts available in the market, and any woman is indifferent among any men who wants to sign the same contract.

Proof: Consider any two equilibrium marriage contracts (d, m) and (d', m'). By Lemma 3, for any man the difference in expected utility between signing the first contract versus the second is $d - d' - \int_{-\infty}^{\varepsilon^c-(c_m-c_0)} \varphi(x)(m-m')dx - \int_{\varepsilon^c-(c_m-c_0)}^{\varepsilon^c-(c_{m'}-c_0)} \varphi(x)(\varepsilon^c - x)dx$. That is, either all men are indifferent between signing (d, m) and (d', m'), or all men strictly prefer the same one versus the other. The latter contradicts that (d, m) and (d', m') are both equilibrium contracts.

Given entering a marriage with some equilibrium contract (d, m), a woman's expected utility only depends the probabilities of divorce and abandonment. Lemma 3 implies that the probability that the marriage ends with separation is independent of the identity of the husband, and if separation happens then it occurs in the same period as the marriage. If $q' < q + m_0 + m$ or $q' > q + m_0 + m$ then all men strictly prefer either abandonment or divorce, hence the expected utility of enetring a marriage with contract (d, m) is independent of the identity of the husband. Assume now $q' = q + m_0 + m$, that is given contract (d, m) men are indifferent between abandonment of divorce. If a woman signing contract (d, m) is also indifferent between being abandoned or divorced, then she is indifferent between any two men signing (d, m). If she strictly prefers being divorced, and in case of separation the husband abandons her with positive probability, then a contract $(d, m - \upsilon)$ for small enough $\upsilon > 0$ would make both parties strictly better off, contradicting equilibrium. If she strictly prefers being abandoned, and in case of separation the husband abandons her with positive probability, then a contract $(d - \upsilon, m + \upsilon)$ for small enough $\upsilon > 0$ would make both parties strictly better off, contradicting equilibrium. Hence, independently of the identity of the husband, separation implies either divorce or abandonment with probability 1, depending on which one is preferred by the woman. QED

Lemma 4 implies that if (d, m) is an equilibrium contract, then $d = d_0 + \pi(m)$, where $\pi(m) \equiv \int_{-\infty}^{\varepsilon^c-(c_m-c_0)} \varphi(x)(m-m')dx - \int_{\varepsilon^c-(c_m-c_0)}^{\varepsilon^c} \varphi(x)(\varepsilon^c - x)dx$. That is, the dowries in equilibrium contracts

can be decomposed as the sum of the base level dowry d_0, and the price of the mehr specified in the contract, $\pi(m)$, which is such that it exactly compensates the groom for the expected extra cost that the mehr imposes on him.

Lemma 5: Take any $D \geq 0$. In equilibrium, if women j and j' both marry and $D_j = D_{j'} = D$, then they sign the same contract $(d_0 + \pi(m(D)), m(D))$.

Proof: In stationary equilibrium, for any woman who ever marries, one optimal strategy involves getting married whenever possible (that is, remarrying imediately after divorce). Moreover, the probabilityof divorce or abandonment is exactly the same for women j and j', if they sign the same contract, and since $D_j = D_{j'}$, the associated costs are the same, too. Hence, the difference in expected utilities of j and j' if signing the same contract (d, m) is the same for any contract, and it is equal to $\frac{X_j - X_{j'}}{1-\delta}$. Hence, the set of contracts that maximize expected payoff are the same for women j and j'. If there are more than one equilibrium contracts maximizing the expected payoff of woman j (similarly, of woman j'), then woman j (similarly j') signs the one with the lower level of mehr. QED

Lemma 6: For any constant set of available marriage contracts and any $d_0 \in R$, the following hold for woman j's choice of mehr (if she decides to marry):

(i) If $q' \leq q + m_0$, then $m = 0$ and separation always implies abandonment.

(ii) If $q' > q + m_0$ and $D_j < -d_0$, then $m = 0$.

Moreover, for any finite q' there exist $D^*, D^{**} \in R^+$, parameters that are continuous in d_0, such that $q' - q - m_0 = \max(0, D^* + \delta[d_0 + \pi(q' - q - m_0)] - m_0)$, and:

(iii) If $q' > q + m_0$ and $-d_0 \leq D_j \leq D^*$ then m is given by the unique solution to $m = \max(0, D_j + \delta[d_0 + \pi(m)] - m_0)$.

(iv) If $q' > q + m_0$ and $D^* \leq D_j < D^{**}$ then $m = q' - q - m_0$ and separation always results in divorce.

(v) If $q' > q + m_0$ and $D^{**} < D_j$ ithen $m = q' - q - m_0$ and separation always results in abandonment.

Finally,

(vi) If $q' = \infty$ then for any D_j mehr m is given by the unique solution to $m = \max(0, D_j + \delta[d_0 + \pi(m)] - m_0)$.

Proof: Note that if $q' \leq q + m_0$, then $c^m = c^0$ for any $m \in R^+$, hence $\pi(m) = 0$. Furthermore, separation always implies abandonment, and all marriage contracts yield the same expected utility for any person in the marriage market. Therefore the only contract being signed is $(d_0, 0)$.

Suppose now that $q' > q + m_0$. Note that for any $D_j \in R^+$ there is only one $m \in R$ which satisfies $m = D_j + \delta[d_0 + \pi(m)] - m_0$, since $\frac{\partial \pi(m)}{\partial m} < 1$ (it is bounded from above by $\int_{-\infty}^{\varepsilon^c} \varphi(x)dx$). Let $m^*(D_j, d_0)$ denote the value of m satisfying the equation. Note that $m^*(D_j, d_0)$ is continuous and increasing in both d_0 and D_j. Suppose first that $m^*(D_j, d_0) \leq 0$. Then for any match quality realization $\varepsilon < \varepsilon^c$ the aggregate utility of the couple is higher in case of divorce than in case

of staying together. Hence, in equilibrium it cannot be that the couple signs a contract with $m > 0$, since they could renegotiate this contract to a new one involving $m = 0$ such that both of them are strictly better off. Given $q' > q + m_0$ this implies that separation of the couple means divorce. Suppose next that $0 < m^*(D_j, d_0) < q' - q - m_0$. Then for any match quality realization $\varepsilon < \varepsilon^c - (1-\delta)m^*(D_j, d_0)$ the aggregate utility of the couple is smaller if they stay together than if they divorce, and for any match quality realization $\varepsilon > \varepsilon^c - (1-\delta)m^*(D_j, d_0)$ the aggregate utility of the couple is higher if they stay together than if they divorce. Hence in equilibrium woman j signs a contract with $m = m^*(D_j, d_0)$. Note that with these contracts divorce is still cheaper for men than abandonment, hence separation implies divorce. Next, given a fixed d_0, let D^* be defined as the value of D_j satisfying $m^*(D_j, d_0) = q' - q - m_0$. Note that D^* is continuous and strictly decreasing in d_0. Suppose now that $D_j \geq D^*$, and therefore $m^*(D_j, d_0) \geq q' - q - m_0$. Then for any match quality realization $\varepsilon > \varepsilon^c - (1-\delta)(q' - q - m_0)$ the aggregate utility of the couple is higher if they stay together than if they divorce. This implies that in equilibrium woman j cannot sign a contract with $m < q' - q - m_0$. Furthermore, note that for any $m > q' - q - m_0$, $c^m = c^{q'-q-m_0}$ (since abandonment is now cheaper). This implies that in equilibrium woman j cannot sign a contract with $m > q' - q - m_0$, which concludes that the contract she chooses in equilibrium is $m = q' - q - m_0$. Given this contract, men are indifferent between divorce and abandonment. Abandonment imposes a cost kD_j on woman j, while divorce imposes a net cost of $D_j + \delta[d_0 + \pi(q' - q - m_0)] - (q' - q)$. Note that at $D_j = D^*$ the cost that divorce imposes on woman j is zero, while the cost imposed is strictly positive for abandonment. Therefore, if $k \geq 1$ then woman j always prefers divorce to abandonment. If $k < 1$ then there exists $D^{**} > D^*$ such that for $D_j < D^{**}$ woman j prefers divorce, but for $D_j > D^{**}$ woman j prefers abandonment. Moreover, D^{**} is continuous and strictly decreasing in d_0. Finally, observe that if given contract $(d_0 + \pi(q' - q - m_0), q' - q - m_0)$ woman j strictly prefers divorce, then in equilibrium separation should imply divorce with probability 1, otherwise the couple could renegotiate to a contract with a slightly lower mehr than $q' - q - m_0$ (which would make the husband strictly prefer divorce to abandonment). A similar argument establishes that if given contract $(d_0 + \pi(q' - q - m_0), q' - q - m_0)$ woman j strictly prefers abandonment, then in equilibrium separation should imply abandonment with probability 1. QED

Lemma 7: For any constant set of available marriage contracts which satisfy $d = (d_0 + \pi(m))$ for some $d_0 \in R$, there is X^c such that man any man i with $X_i > X^c$ gets married at any period he is eligible to marry, and any man i with $X_i < X^c$ stays single. Threshold X^c is strictly decreasing and continuous in d_0.

Proof: Fix d_0. Note that any man i with $X_i > -d_0$ strictly prefers marrying to staying single. Hence, $V(X_i) > \frac{u(e)}{1-\delta}$. By Lemma 2, for any man i' who ever gets married in equilibrium, $V(X_{i'}) - V(X_i) = \frac{X'}{1-\delta} - \frac{X}{1-\delta}$. This implies that any man i' such that $X_{i'} > X_i - [(1-\delta)V(X_i) - u(e)] \equiv X^c$ gets married whenever eligible, while any man i' such that $X_{i'} < X^c$ never gets married.

Since $V(X^c) = \frac{u(e)}{1-\delta}$, Lemma 2 implies that $\delta\frac{u(e)+X^c+\varepsilon^c}{1-\delta} = -q - m_0 + \delta\frac{u(e)}{1-\delta}$. Hence, $\varepsilon^c = -X^c - \frac{1-\delta}{\delta}(-q - m_0)$. Therefore, using Lemma 4, threshold X^c has to satisfy the indifference

condition:

$$\frac{u(e)}{1-\delta} = d_0 + \int_{-\infty}^{-X^c} \varphi(\varepsilon)[u(e) + X^c + \varepsilon + \delta\frac{u(e)}{1-\delta}]d\varepsilon + \int_{-X^c}^{\infty} \varphi(\varepsilon)\frac{u(e)+X^c+\varepsilon}{1-\delta}d\varepsilon \qquad (*)$$

The right hand side of (*) is continuous and strictly increasing in both d_0 and X^c. Therefore the value of X^c satisfying (*) is continuous and strictly decreasing in d_0. QED

Lemma 8: For any constant set of available marriage contracts $\{(d,m)|d = (d_0 + \pi(m))$ for some $d_0 \in R$, $0 \leq m \leq \max(0, q - q' - m_0)\}$, there is a function $Y^c(D) : R^+ \to R$ such that woman j (whenever eligible) decides to get married if $Y_j > Y^c(D_j)$ and stays single if $Y_j < Y^c(D_j)$. Threshold $Y^c(D)$ is increasing and continuous in both D and d_0.

Proof: If the set of available contracts in the market is the same in every period, then the continuation payoff of woman j eligible to marry only depends on Y_j and D_j. Let $W(Y_i, D_i)$ denote this value. Take an arbitrary $D \geq 0$. Take any woman j such that $D_j = D$ and $Y_j > -d_0 - D$. The latter condition implies that woman j strictly prefers to marry with contract $(d_0, 0)$ to staying single. Hence $W(Y_j, D) > \frac{u(e')}{1-\delta}$. Consider now any woman j' such that $D_{j'} = D$, and j' gets married at least once. The latter implies $W(Y_{j'}, D) \geq \frac{u(e')}{1-\delta}$. This means that there is an optimal strategy $s_{j'}$ for woman j' which involves always marrying when eligible. Let s_j denote an optimal strategy for woman j. Since $W(Y_j, D) > \frac{u(e')}{1-\delta}$, s_j involves always marrying if eligible. Then woman j can guarantee a payoff of $W(Y_{j'}, D) + \frac{Y_j - Y_{j'}}{1-\delta}$ by following $s_{j'}$, and woman j' can guarantee a payoff of $W(Y_j, D) + \frac{Y_{j'} - Y_j}{1-\delta}$ by following s_j. This establishes $W(Y_{j'}, D) = W(Y_j, D) + \frac{Y_{j'} - Y_j}{1-\delta}$. Then any woman j' such that $D_{j'} = D$ and $Y_{j'} > Y_j + (1-\delta)(\frac{u(e')}{1-\delta} - W(Y_j, D)) \equiv Y^c(D_j)$ marries whenever eligible, while any woman j' such that $D_{j'} = D$ and $Y_{j'} < Y_j + (1-\delta)(\frac{u(e')}{1-\delta} - W(Y_j, D)) \equiv Y^c(D_j)$ never marries.

Threshold $Y^c(D_j)$ has to satisfy the indifference condition:

$$\begin{aligned}\frac{u(e')}{1-\delta} &= -d_0 - \pi(m(D_j)) + \int_{-\infty}^{\varepsilon^c - (c_m - c_0)} \varphi(x)(m(D_j) - D_j + \delta\frac{u(e')}{1-\delta})dx + \\ &\int_{\varepsilon^c - (c_m - c_0)}^{\infty} \varphi(x)\frac{u(e') + Y^c(D_j)}{1-\delta}dx \qquad (**)\end{aligned}$$

Lemma 6 implies that that $m(D_j)$ is continuous in d_0 and $\int_{-\infty}^{\varepsilon^c - (c_m - c_0)} \varphi(x)m(D_j)dx - d_0 < m(D_j) - d_0$ is decreasing in d_0, hence the right-hand side of (**) is strictly decreasing and continuous in d_0 and strictly increasing and continuous in $Y^c(D_j)$. Therefore, for any D, $Y^c(D)$ is continuous and decreasing in d_0.

Suppose now that $D' > D$ and let women j and j' be such that $Y_j = Y_{j'} = Y^c(D')$, $D_j = D$ and $D_{j'} = D'$. Then woman j' is indifferent between never marrying and marrying whenever possible and signing some equilibrium contract (d', m'). Note that woman j, by following the latter strategy would get an expected payoff strictly higher than woman j' obtains. This is because woman j's

resulting expected payoff, net the discounted present value of the expected costs of separations, is exactly the same as that of woman j', and the net discounted present value of the costs of separation (which is strictly positive for any marriage contract, since the realization of the match quality can be arbitrarily low) is lower for woman j than for woman j'. Hence, $Y^c(D') < Y^c(D)$. QED

Lemmas 7 and 8 imply that women and men who get married in equilibrium decide to marry immediately, and they return to the marriage market and immediately remarry in case they get divorced.

Proof of Proposition 1: By Lemma 4, if a stationary equilibrium exists then any equilibrium contract (d, m) satisfies $d = d_0 + \pi(m)$. Moreover, the set of equilibrium contracts have to be the same for any two stationary equilibria having the same base level of dowry. To see this, note that all men are indifferent among all contracts in $\{(d_0 + \pi(m), m) | m \in R^+\}$. Therefore, in any equilibrium with base level of dowry d_0 any woman j signs the contract with the minimum amount of mehr among those in $\{(d_0 + \pi(m), m) | m \in R^+\}$ which maximize her expected payoff.

Now we establish that there exists d_0 that equates the supply of women and men, and that it is unique.

Lemma 6 implies that d_0 uniquely determines the proportion of women in each cohort who decide to get married. Furthermore, d_0 uniquely determines the probability of divorce given any marriage contract, hence it determines the number of women returning to the marriage market after getting divorced. Since there is a unique contract for each woman in the market that she signs in equilibrium, d_0 determines the distribution of marriage contracts, too. This concludes that d_0 uniquely determines the total supply of women in the marriage market, and the distribution of contracts they sign in equilibrium.

Note that in equilibrium both the total supply of women and men in the market, and the distribution of women and men signing different equilibrium contracts have to be the same. By Lemma 5, d_0 uniquely determines X^c, hence the proportion of men in each cohort who decide to get married. Since d_0 uniquely determines the probability of separation given any marriage contract, if we assume that the relative distribution of marriage contracts that men sign is the same as the relative distribution of contracts that women sign, d_0 uniquely determines the total supply of men in the marriage market.

From (*) it follows that if $d_0 \to -\infty$, then $X^c \to \infty$. Furthermore, if $d_0 < 0$ then $\varepsilon^c < 0$, therefore at least half of the men who decide to marry stay in the existing marriage. This implies that as $d_0 \to -\infty$, the total supply of men in the market goes to 0. From (**) it follows that for any D, $d_0 \to -\infty$ implies $Y^C(D) \to -\infty$. Hence, $d_0 \to -\infty$ implies that the total supply of women goes to an amount bounded from below by 1. This implies that for low enough d_0 the total supply of women in the market is higher than the total supply of men. Consider now $d_0 \to \infty$. From (*) it follows that $X^c \to -\infty$, and from (**) it follows that for any D, $Y^C(D) \to \infty$. This means that for small enough d_0 the total number of men from a given cohort who want to get married exceed the total number of women who want to get married from a given cohort. Also note that,

as a consequence of Lemma 3, after any separation the man from the couple always reenters the marriage market the next period, therefore the ratio of women reentering the marriage market is weakly less than the ratio of women (if abandonment is possible, then the ratio of women reentering might be strictly less). Hence, for large enough d_0 the total supply of men in the market is lower than the total supply of women.

By lemmas 7 and 8, the fraction of men and women who decide to marry from a given cohort is continuous in d_0.

Lemmas 2 and 4 imply that $V(X) = d_0 + u(e) + X_i + \int_{\varepsilon^c}^{\infty} \varphi(x)\delta\frac{u(e)+X_i+x}{1-\delta}dx + \int_{\varepsilon^c}^{\infty} \varphi(x)[-c_0 + \delta V(X)]dx$, which implies

$$\begin{aligned} V(X) &= \frac{1}{1-\delta\int_{\varepsilon^c}^{\infty}\varphi(x)dx}(d_0 + u(e) + X_i + \\ &\int_{\varepsilon^c}^{\infty}\varphi(x)\delta\frac{u(e)+X_i+x}{1-\delta}dx + \int_{\varepsilon^c}^{\infty}\varphi(x)[-c_0]dx) \qquad (***) \end{aligned}$$

The right side of (***) is continuous and strictly increasing in d_0 for any $\varepsilon^c \in R$. Moreover, it is continuous in ε^c, and since

$\frac{1}{1-\delta\int_{\varepsilon^c}^{\infty}\varphi(x)dx}(d_0 + u(e) + X_i + \int_{\varepsilon^c}^{\infty}\varphi(x)\delta\frac{u(e)+X_i+x}{1-\delta}dx + \int_{\varepsilon^c}^{\infty}\varphi(x)[-c_0]dx) =$

$\max_{\varepsilon\in R}\frac{1}{1-\delta\int_{\varepsilon}^{\infty}\varphi(x)dx}(d_0 + u(e) + X_i + \int_{\varepsilon}^{\infty}\varphi(x)\delta\frac{u(e)+X_i+x}{1-\delta}dx + \int_{\varepsilon}^{\infty}\varphi(x)[-c_0]dx),$

$V(X)$ is continuous in d_0. Note that $V(X)$ uniquely determines ε^c, and that ε^c is continuous in $V(X)$. Hence, for any fixed contract, the probability of separation is strictly increasing and continuous in d_0. Furthermore, $c_m - c_0$ is continuous in m, and by Lemma 7 $m(D_j)$ is continuous in d_0. This establishes that the probability of separation is a continuous function of d_0 for any woman j. Lemma 8 implies that for any d_0, for almost all women (that is for any woman who are not indifferent between divorce and abandonment, where the set of woman types (Y, D) who are indifferent between the two forms of separation is of Lebesgue measure zero) there is a neighborhood of d_0 such that the woman either divorces with probability 1 in case of separation, or is abandoned with probability 1 in case of separation. This concludes that at any base level dowry, for almost any woman type (Y, D) the probability of returning to the marriage market after a failed marriage (which, since separation always occurs in the same period, happens in the subsequent period) is continuous in d_0. This in turn implies that the total supply of women in the market is continuous in d_0. Furthermore, if the relative ditsribution of contracts signed by men is the same as the one signed by women, then the total supply of men in the market is continuous in d_0, too. This establishes that there has to be base level dowry d_0^* such that the total supply of women and men in the market, and the relative distribution of contracts signed by women and men, are equal.

Note that by Lemma 7 the number of men in each cohort who want to marry is strictly in-

creasing in d_0, and that by Lemma 8 the number of women in each cohort who want to marry is strictly decreasing in d_0. Since equilibrium contracts maximize the joint surplus of any couple, the equilibrium contract of any couple should specify mehr m, subject to the constraint $m \leq q' - q - m_0$ (otherwise husband chooses abandonment), which induces the husband to stay in the marriage iff at the match quality realization ε the joint surplus of the couple is positive. A unit marginal increase in d_0 leaves the cost of abandonment for a woman constant. The cost of divorce for the woman is $D_j + \delta[d_0 + \pi(m(D_j))] - m_0$. Since an increase in d_0 increases ε^c, if $\varepsilon^{m(D_j)}$ stays constant then $\pi(m(D_j))$ decreases when d_0 increases. That would imply $\frac{\partial(D_j+\delta[d_0+\pi(m(D_j))]-m_0)}{\partial d_0} < \delta < 1$. The cost of staying in the marriage for the man, for any match quality realization ε is equal to the opportunity cost $V(X)$, minus the discounted present value of staying in the marriage with the given realization. From (***) it follows that $\frac{\partial V(X)}{\partial d_0} = \frac{1}{1-\delta \int_{\varepsilon^c}^{\infty} \varphi(x)dx} > 1$. Since the cost of staying in the marriage for the man is decreasing in match quality realization, it follows that $\varepsilon^{m(D_j)}$ increases for any woman j if d_0 increases. That is, the probability of separation for any woman increases as d_0 increases. Recall that all divorced women and men return the next period in the marriage market, and that Lemma 6 implies the ratio of marriages ending with separation is a continuous function of d_0. Suppose now that if d_0^* is such that the total supply of women and men in the market, and the relative distribution of contracts signed by women and men are equal. Then the above imply that at any $d_0 < d_0^*$ if the relative distribution of contracts signed by women and men are equal, then the total supply of men is smaller than the total supply of women. Similarly, at any $d_0 > d_0^*$ if the relative distribution of contracts signed by women and men are equal, then the total supply of men is higher than the total supply of women. Hence, there is only one level of d_0 such that both the total supply of women and men in the market, and the relative distribution of contracts signed by women and men are equal. QED

Proof of Corollary 1: The first claim follow from Lemma 6. By lemma 3, a positive fraction of married men get separated from their wives. Then, claims (i) and (v) of Lemma 6 imply that a positive fraction of men abandon their wives. In particular, claim (i) implies that all separations imply polygamy. QED

Proof of Corollary 2: The first statement follows from statement (iv) of Lemma 6. By the definition of equilibrium, the marriage contract signed by any couple is ex ante efficient for the couple, subject to $m \geq 0$. That is, there is no contract (d, m) with $m \geq 0$ which both marrying parties would prefer to the contract they sign in equilibrium. Note that through d the couple can transfer utility to each other ex ante one by one. Hence, the contract signed in equilibrium is such that m maximizes the joint surplus of the couple. In particular, m is set such that at marriage quality realization ε^m (which is the cut-off point for the husband to divorce) the cost that divorce imposes on the woman is exactly equal to the expected loss that staying in the marriage imposes on the woman. QED

Lemma 9: The amount of mehr chosen by any woman is weakly increasing in d_0.

Proof: Consider an arbitrary woman j. Let m^j be the unique solution satisfying $m^j = \max(0, D_j+\delta[d_0+\pi(m^j)]-m_0)$. Recall that $\pi(m) \equiv \int_{-\infty}^{\varepsilon^c-(c_m-c_0)} \varphi(x)(m-m')dx - \int_{\varepsilon^c-(c_m-c_0)}^{\varepsilon^c} \varphi(x)(\varepsilon^c - x)dx$. Therefore, since ε^c is strictly increasing in d_0, $\pi(m)$ is strictly increasing in d_0 for every m. This implies that m^j is strictly increasing in d_0. By Lemma 6, the mehr chosen by woman j is equal to $\min(m^j, \max(0, q - q' - m_0))$, which is weakly increasing in d_0, given that m^j is strictly increasing in d_0. QED

Proof of Proposition 2: Suppose first that d_0 remains unchanged after the regime change. This implies that exactly the same number of men decide to marry, from each cohort (those who prefer getting married with contract $(d_0, 0)$ as opposed to not getting married, since all men are indifferent among all available contracts). Furthermore, for any mehr level m that is chosen in equilibrium in regime I, the probability of separation given mehr m being specified in the marriage contract is the same in regime II as in regime I. Similarly, $\pi(m)$ remains the same after the regime change, for any m. Hence, if a woman after the regime change chooses the same level of mehr as in regime I, she has to pay the same amount of dowry as before, and the contract induces the same probability of separation as before. Given that $k \geq 1$ and that all separations imply divorce in regime II, this means that the payoff from getting married weakly increases for every woman, relative to staying unmarried. This implies that the number of women deciding to marry from each cohort weakly increases after the regime change. Now we show that the increase is in fact strict. Let m^D be the unique solution to $m^D = D_j + \delta[d_0 + \pi(m^j)] - m_0$, for any $D \geq 0$. let C be equal to $q - q' - m_0$ in regime I. Recall that C is an upper bound on the mehr specified in regime I. Let D^* be high enough such that $m^{D^*} > \max(0, C)$. Let $\varepsilon > 0$. Then $m^{D^*+\varepsilon} > m^{D^*} > \max(0, C)$. In regime I, every woman j for whom $D_j \in [D^*, D^* + \varepsilon]$ chooses mehr C, if she decides to get married, while in regime II, she chooses m^{D_j}, which is bounded away from C. Let $V(D_j)$ be the difference in utilities for woman j between getting married in regime II versus regime I. Note that $V(D)$ is continuous in D. This and $V(D) > 0$ $D \in [D^*, D^* + \varepsilon]$ imply that there is $\delta > 0$ such that $V(D) > \delta \ \forall \ D \in [D^*, D^* + \varepsilon]$. Hence, there is $k > 0$ such that $Y^c(D)$ increases by at least k for any $D \in [D^*, D^* + \varepsilon]$. By lemma 8, within a regime $Y^c(D)$ is continuous, which implies that a positive mass of women who choose not to marry in regime I choose to marry in regime II. This concludes that the regime change strictly increases the number of women from each cohort deciding to marry. Furthermore, since in regime II all separations are divorces, and divorced women return to the marriage market while abandoned women do not, the relative fraction of women to men returning to the marriage market increases. Hence, the number of women wanting to get married in any given period strictly increases, relative to the number of men. But this contradicts that the market is in equilibrium, since we started from an equilibrium configuration.

Since for an unchanged d_0 the supply of women after the regime change exceeds the supply of men, by lemmas 7 and 8 equilibrium d_0 has to increase after the regime change. This implies that $\pi(m)$ increases after the regime change too, for every $m \geq 0$. Also, by Lemma 9, every marrying woman specifies a higher mehr than if d_0 remained constant. The above imply that both total

dowry and mehr are higher for every marrying woman in regime II than in regime I. QED

Proof of Proposition 3: In regime II marriages only end with divorce, and both people from the divorced couple return to the marriage market. Hence, the total supply of women is equal to the total supply of men in the market iff the number of women from a given cohort who decide to marry is equal to the number of men from a given cohort who decide to marry. Consider now an increase in the mandatory dowry, from m_0 to m_0'. Suppose that base level dowry increases to $d_0' = d_0 + \pi(m_0' - m_0)$. Then the expected utility from marriage is unchanged for men, and the same number of men get married from each cohort as before the change. Furthermore, by Lemma 6, women who would have married and specified mehr $m \geq m_0' - m_0$ in case of mandatory dowry m_0, after the increase in mandatory dowry still get married, and specify mehr $m - (m_0' - m_0)$. Note that both total mehr and the probability of divorce remains the same for these women. Those women who would have married and specified mehr $m < m_0' - m_0$, after the increase in baseline dowry specify mehr 0 if marry. Note that this implies that expected utilities of these women decrease as a consequence of the change ($m_0 + m$ after the change is suboptimally large, because of the nonnegativity constraint on m binding). Hence, a positive fraction of these women do not get married after the change. Finally, since the utility from marrying does not increase for any woman in the scenario above, women who did not marry before the change in m_0 still don't marry after the change. The above implies that the over all fraction of women who marry in each cohort decreases. Hence, the total supply of women in the market is less than the total supply of men, contradicting that the market is in equilibrium. Then lemmas 7 and 8 imply that $d_0' < d_0 + \pi(m_0' - m_0)$. This implies that in the new equilibrium less men marry from each cohort than in the old one. Furthermore, Lemma 9 implies that the mehr woman j specifies in the new equilibrium is less than $\max(0, m_j - (m_0' - m_0))$. Hence, the mehr decreases for all women. Furthermore, if woman j specifies positive mehr m in the new equilibrium, then the total dowry she has to pay is less than $d_0 + \pi(m_0' - m_0) + \pi(m_j) - \pi(m_0' - m_0) = d_0 + \pi(m_j)$, hence in the new equilibrium the total dowry she has to pay decreases. QED

Figure 1. Fraction marriages ending in divorce

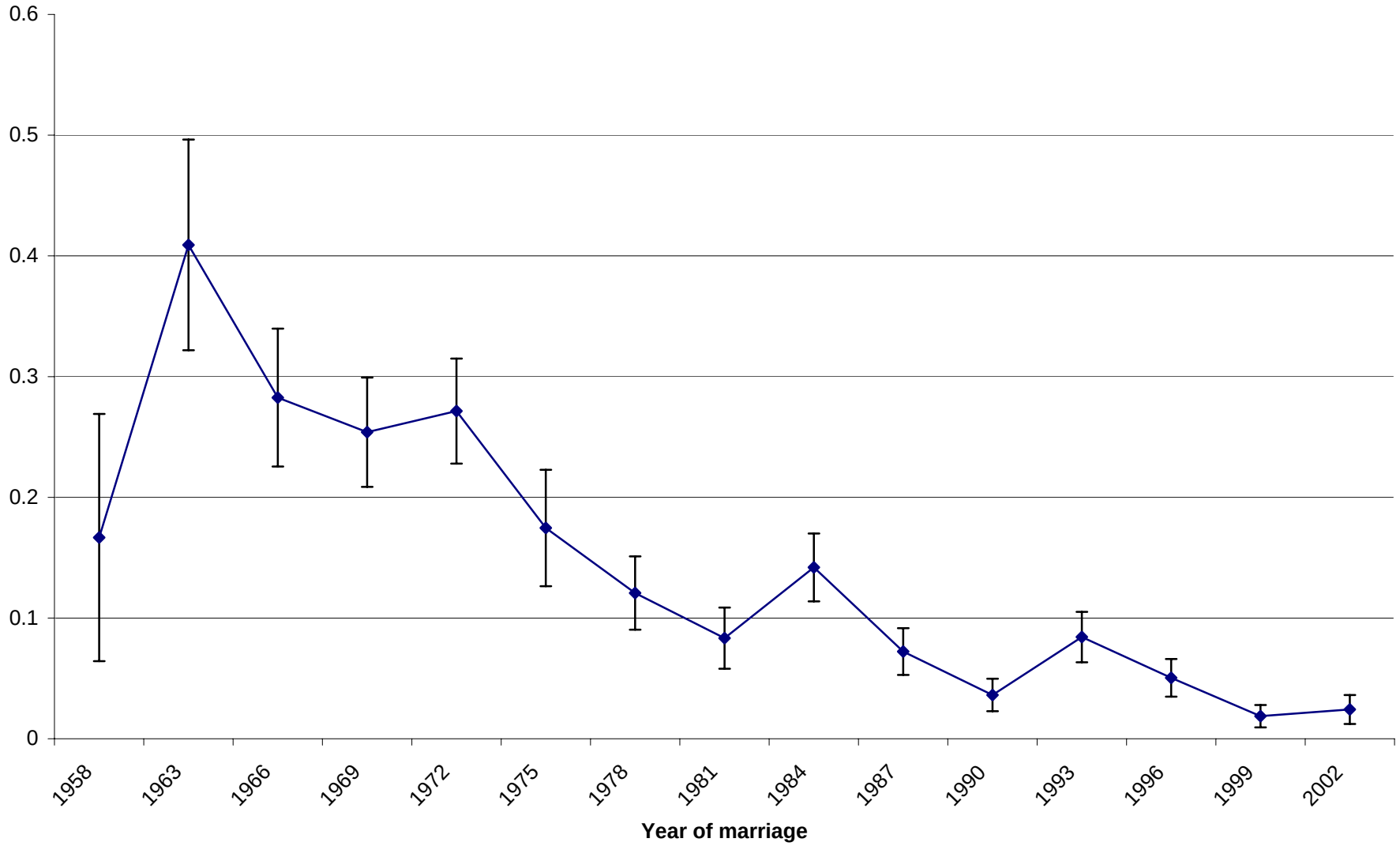

Figure 2. Fraction marriages involving dowry

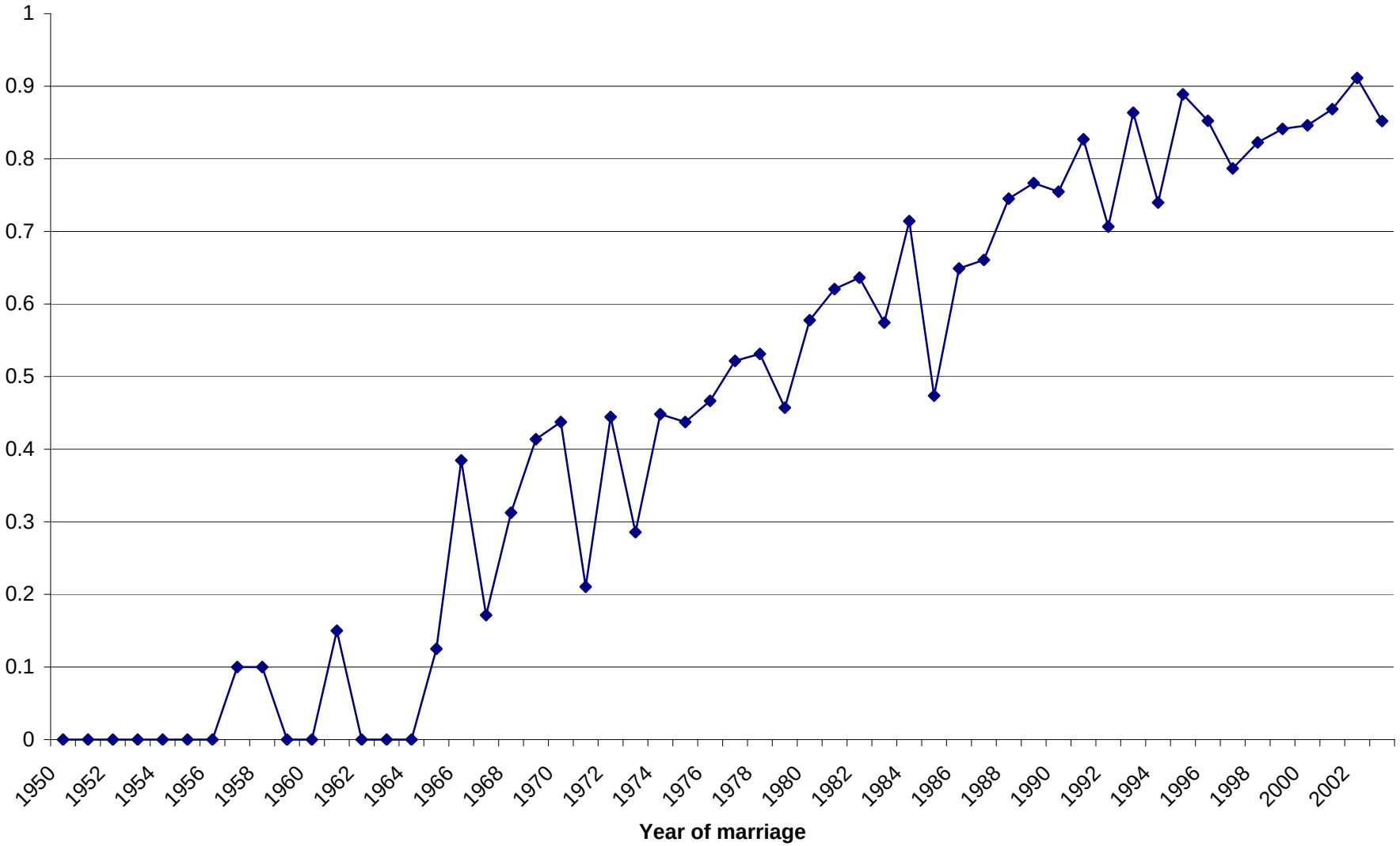

Figure 3. Mean Value Mehr by Year of Marriage

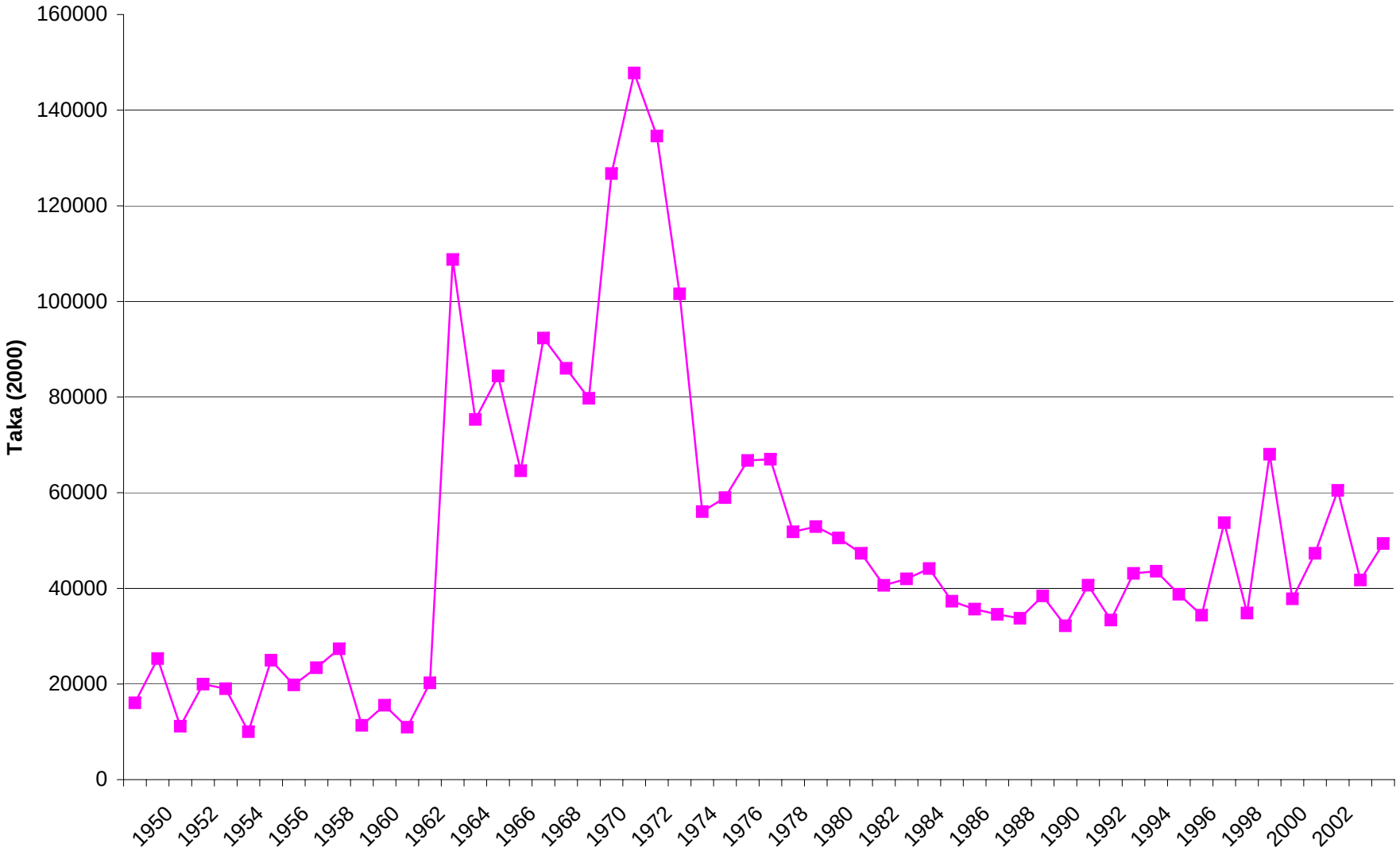

Figure 4. Mean Value Dowry by Year of Marriage

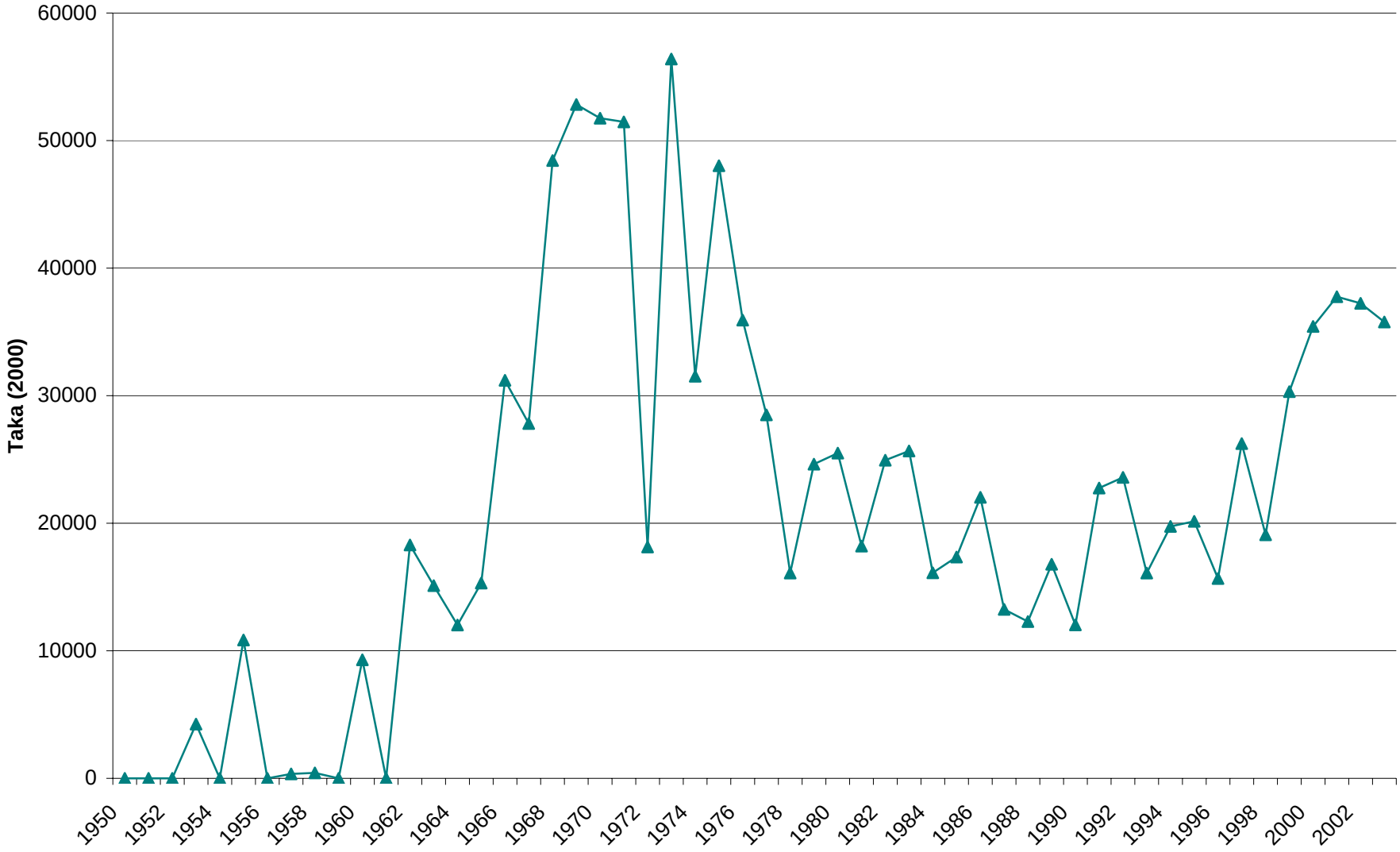

Figure 5. Mean Value Dowry, Bequests and Non-bequests

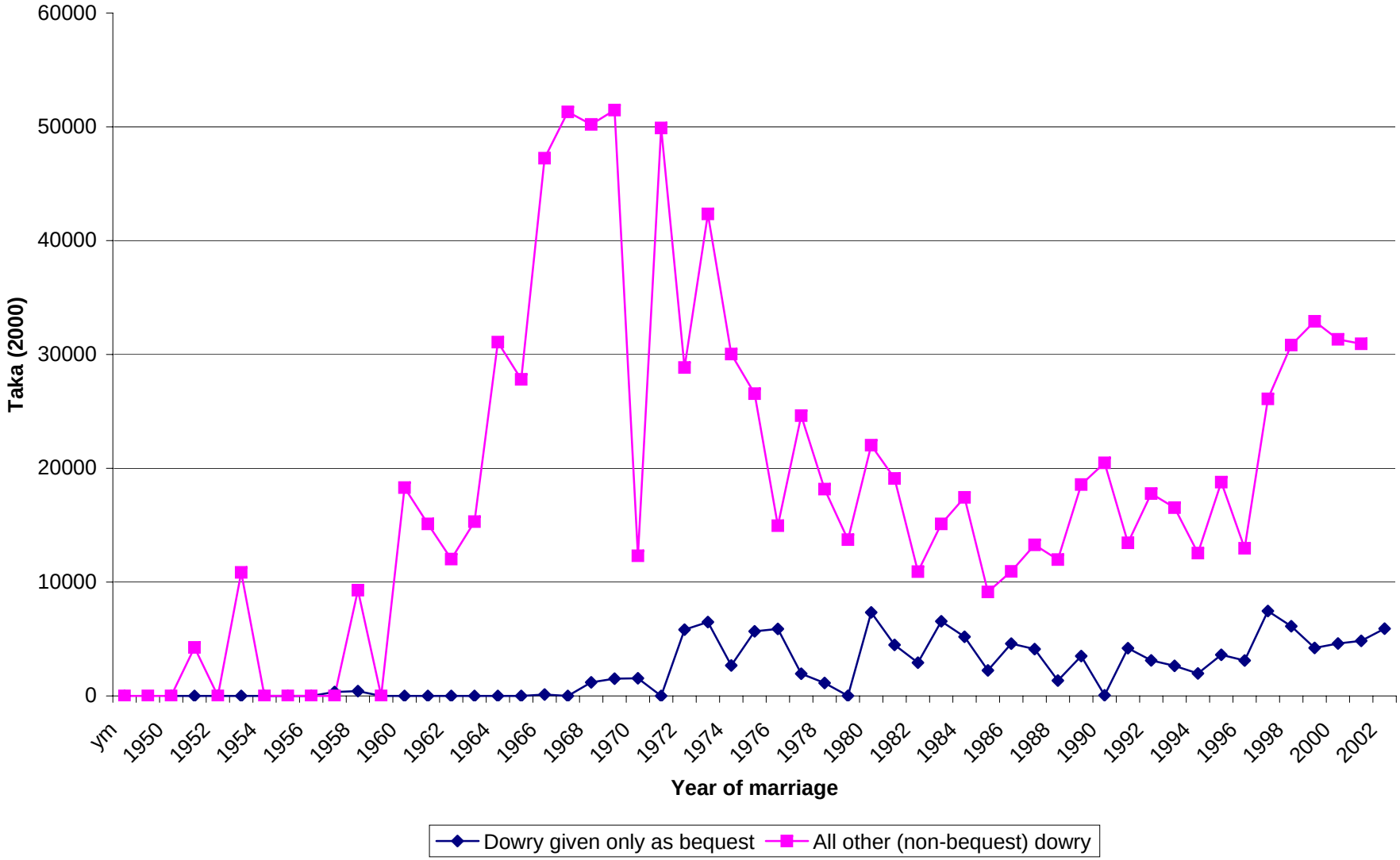

Table 1: Summary Statistics

	(1)	(2)	(3)	(4)	(5)	(6)
	All marriages over period	*Regime I marriages (before 1963)*	*Regime II marriages (1963-1974)*	*Regime III marriages (1975-1990)*	*Regime IV marriages (1991-1999)*	*Regime V marriages (2000-2004)*
Value mehr	63429.73	38684.6	137840.30	52367.94	48929.52	73609.40
	(3190.7)	(12339.3)	(17259.4)	(2616.0)	(2450.4)	(12482.4)
Marriage involves any dowry	0.670	0.128	0.338	0.634	0.813	0.857
	(0.013)	(0.049)	(0.038)	(0.021)	(0.019)	(0.026)
Marriage involves dowry transfer to groom	0.600	0.100	0.300	0.570	0.740	0.770
	(0.013)	(0.049)	(0.038)	(0.021)	(0.019)	(0.026)
Fraction of marriages involving bequests	0.092	0.167	0.151	0.084	0.090	0.090
	(0.010)	(0.167)	(0.050)	(0.015)	(0.015)	(0.023)
All of dowry property of bride	0.092	0.167	0.151	0.084	0.090	0.090
	(0.010)	(0.167)	(0.050)	(0.015)	(0.015)	(0.023)
Any dowry property of bride	0.229	0.500	0.358	0.201	0.193	0.321
	(0.014)	(0.224)	(0.067)	(0.022)	(0.021)	(0.037)
Value dowry	18945.99	8368.07	24466.87	14031.00	17684.99	34620.75
	(1136.9)	(5086.9)	(4429.6)	(1545.1)	(1242.6)	(4966.3)
Value dowry excluding pure transfers to bride	18945.99	8368.07	24466.87	14031.00	17684.99	34620.75
	(1136.9)	(5086.9)	(4429.6)	(1545.1)	(1242.6)	(4966.3)
Any dowry cash	0.787	0.167	0.245	0.730	0.891	0.885
	(0.014)	(0.167)	(0.060)	(0.024)	(0.017)	(0.026)
Any dowry land	0.032	0.000	0.057	0.035	0.031	0.019
	(0.006)	(0.000)	(0.032)	(0.010)	(0.009)	(0.011)
Any dowry productive assets	0.193	0.333	0.377	0.218	0.140	0.192
	(0.013)	(0.211)	(0.067)	(0.022)	(0.018)	(0.032)
Any dowry consumer goods	0.403	1.000	0.717	0.349	0.350	0.513
	(0.016)	(0.000)	(0.062)	(0.026)	(0.025)	(0.040)
Education bride	2.765	1.213	1.452	1.961	3.041	6.033
	(0.104)	(0.372)	(0.236)	(0.138)	(0.188)	(0.334)
Education groom	3.208	2.191	2.439	2.398	3.392	6.110
	(0.114)	(0.565)	(0.297)	(0.158)	(0.201)	(0.356)
Age marriage bride	15.643	12.660	14.038	15.158	16.128	18.071
	(0.080)	(0.438)	(0.188)	(0.100)	(0.147)	(0.201)
Age marriage groom	22.544	21.745	21.924	22.355	22.535	23.868
	(0.123)	(0.843)	(0.312)	(0.195)	(0.197)	(0.395)
Bride's family richer	0.326	0.277	0.331	0.326	0.342	0.297
	(0.013)	(0.066)	(0.038)	(0.020)	(0.023)	(0.034)
Groom's family richer	0.262	0.191	0.229	0.265	0.257	0.313
	(0.012)	(0.058)	(0.034)	(0.019)	(0.021)	(0.034)
Observations	*1368*	*47*	*157*	*543*	*439*	*182*

Notes: Mean values, standard errors in parentheses. Prices of mehr and dowry deflated to 1980 levels using price of jute. Data come from the 2004 *Bangladeshi Rural-Urban Linkages Survey* conducted by IFPRI.

Table 2: Impact of Legal Changes on Value of Mehr and Dowry

						2SLS Estimate
	(1)	(2)	(3)	(4)	(5)	(6)
	Value Mehr	*Value Mehr*	*Value Dowry*	*Value Dowry*	*Value Dowry Excluding Bequests*	*Value Dowry*
Value Mehr						0.216
						[0.087]*
Post_1961	114815.22	111595.54	18195.30	15337.21	17292.14	
	[30035.36]**	[30914.24]**	[8940.67]*	[8912.71]+	[8580.88]*	
Post_1974	-85567.57	-79436.01	-14832.58	-14168.30	-10001.58	
	[21761.93]**	[21980.51]**	[8005.37]+	[8111.59]+	[7097.00]	
Post_1990	12435.01	13857.03	5790.54	6522.23	7674.07	
	[7470.96]+	[7476.26]+	[4209.75]	[4105.87]	[3322.41]*	
Post_1999	42653.02	37401.98	13881.31	11989.80	15721.96	
	[34998.87]	[32588.15]	[9502.40]	[9300.60]	[9131.76]+	
Year marriage	-3198.92	-3969.55	451.80	323.95	-307.09	1515.925
	[1538.56]*	[1614.49]*	[717.96]	[717.66]	[438.95]	[695.597]*
Education groom		1207.62		1381.10		
		[1092.74]		[531.61]**		
Age marriage groom		-144.89		-40.58		
		[724.28]		[273.24]		
Bride's family richer		3757.48		4007.34		
		[8240.13]		[2268.81]+		
Groom's family richer		-4692.44		6199.84		
		[8695.65]		[3097.57]*		
Education bride		2317.29		-128.41		
		[1189.90]+		[470.14]		
Age marriage bride		5181.33		1034.52		
		[1800.77]**		[443.79]*		
$F_{(Post61=Post74=Post90=Post98=0)}$	*8.73*		*2.73*		*3.38*	
Observations	*1368*	*1368*	*1368*	*1368*	*1368*	*1368*

Notes: Regression estimates, outcome in columns 1-2 is real value of amount transferred to wife in case of divorce specified on marriage contract ("Value mehr"), outcome in columns 3-5 is real value of dowry given from bride to groom at marriage. Post_1961, post_1974, post_1990 and post_1999 are binary variables indicating that marriage took place after four each year indicated, which correspond to key changes in Muslim Family Law. In column 5, dowry equal to zero if all is reported to be property of the bride. Column 6 is output from two-stage least squares estimate in which excluded variables from first-stage equation are three legal change indicators. Prices of mehr and dowry deflated to 1980 levels using price of jute. Regressions also control for linear trend in year of marriage and seven 8-year period indicators to allow for non-linear time trends in marriage payments. Data come from the 2004 Bangladeshi Rural-Urban Linkages Survey conducted by IFPRI. Standard errors in brackets. + significiant at 10% level; * significant at 5% level; ** significant at 1% level.

Table 3: Impact of Legal Changes on Value of Mehr and Dowry, Intent-to-treat

	(1)	(2)
	Value Mehr	*Value Dowry*
Age_13_Post_1961	-16388.893	22450.259
	[76883.015]	[7416.775]**
Age_13_Post_1974	-71641.402	-20499.102
	[27533.416]**	[10682.303]+
Age_13_Post_1990	29674.035	2634.12
	[15486.999]+	[4145.845]
Age_13_Post_1999	4696.425	-4254.841
	[9126.677]	[5920.679]
Year birth	-5216.179	764.531
	[2642.401]*	[651.150]
Observations	*1368*	*1368*
Sample	*All*	*All*

Notes: Regression estimates are identical to those in columns 1 and 3 of table 2, except that dummy variables for legal changes measure whether respondent turned 13 by the time of each ammendment (rather than whether she married). See notes to Table 2 for other details of estimates.

Table 4: Robustness checks

	(1)	(2)	(3)	(4)
	Value dowry	*Value dowries in which all property of bride*	*Bride's age at marriage*	*Age difference spouses*
Post_1961	0.000	0.125	1.774	-0.152
	[0.000]	[0.134]	[1.348]	[1.367]
Post_1974	-7961.97	-0.148	-0.584	0.576
	[8703.63]	[0.114]	[0.577]	[0.854]
Post_1990	-8131.21	0.029	-0.143	-0.022
	[5719.55]	[0.053]	[0.333]	[0.487]
Post_1999	-14483.58	0.096	0.15	-0.543
	[10681.55]	[0.063]	[0.330]	[0.537]
Year marriage	2078.73	-0.001	0.107	-0.005
	[1115.28]+	[0.008]	[0.041]**	[0.069]
Sample	*Hindus*	*Muslims*	*Muslims*	*Muslims*
Observations	*137*	*1368*	*1368*	*1368*

Notes: Regression in column 1 identical to that of column 3 in Table 2, except that sample is restricted to randomly sampled set of Hindu hosueholds that were included in the survey (these observations are excluded from all other regressions in the paper). Regression specifications in columns 2-4 are identical to those in column 1 of table 2, except for outcome variables. Column 2 outcomes is the value of dowries that were reported in survey data to be given exclusively to the bride at marriage. Column 3 dependent variable is bride's age at marriage, and column 4 dependent variable is groom's age minus bride's age. See notes to Table 2 for other details of estimates.

Table 5: Impact of Legal Changes on Value of Mehr and Dowry, Difference-in-difference estimates

					2SLS Estimate
	(1)	(2)	(3)	(4)	(5)
	Any dowry	*Any dowry*	*Value Dowry*	*Value Mehr*	*Value Dowry*
Value Mehr					0.145
					[0.095]
Post_1961	0.035	0.051	19624.134	205994.501	
	[0.103]	[0.105]	[13298.213]	[49968.302]**	
Post_1974	-0.053	-0.208	-28435.486	-109555.364	
	[0.057]	[0.081]*	[11843.273]*	[47931.235]*	
Post_1990	0.006	0.006	6682.959	9176.537	
	[0.080]	[0.066]	[4236.141]	[8505.468]	
Post_1999	-0.062	-0.049	13316.907	27146.866	
	[0.059]	[0.056]	[13294.564]	[13765.606]+	
Post_1961*(Remote subdistrict)		-0.035	-4649.903	-150624.279	
		[0.148]	[16909.433]	[53844.180]*	
Post_1974*(Remote subdistrict)		0.245	21801.456	39444.289	
		[0.087]*	[10203.950]*	[37634.301]	
Post_1990*(Remote subdistrict)		-0.014	-4194.931	643.824	
		[0.061]	[4174.501]	[5782.696]	
Post_1999*(Remote subdistrict)		-0.029	-2410.998	22632.35	
		[0.049]	[14468.778]	[37111.878]	
Remote subdistrict (upazila/thana)		-0.144	-10481.491	109955.86	964.48
		[0.116]	[12550.852]	[38137.281]*	[2389.171]
Year marriage	0.023	0.024	631.082	-3089.128	1387.32
	[0.008]*	[0.008]**	[866.405]	[1101.520]*	[532.420]*
$F_{(Post61=Post74=Post90=Post98=0)}$	*0.55*	*5.07*	*5.01*	*6.17*	
Observations	*1368*	*1368*	*1368*	*1368*	*1368*

Notes: Regression estimates, outcome in columns 1-2 is real value of amount transferred to wife in case of divorce specified on marriage contract ("Value mehr"), outcome in columns 3-5 is real value of dowry given from bride to groom at marriage. Post_1961, post_1974, post_1990 and post_1999 are binary variables indicating that marriage took place after four each year indicated, which correspond to key changes in Muslim Family Law. In column 5, dowry equal to zero if all is reported to be property of the bride. Column 6 is output from two-stage least squares estimate in which excluded variables from first-stage equation are three legal change indicators. Prices of mehr and dowry deflated to 1980 levels using price of jute. Regressions also control for linear trend in year of marriage and seven 8-year period indicators to allow for non-linear time trends in marriage payments. Data come from the 2004 Bangladeshi Rural-Urban Linkages Survey conducted by IFPRI. Standard errors in brackets. + significiant at 10% level; * significant at 5% level; ** significant at 1% level.

Table 6: Impact of Legal Changes on Value of Mehr and Dowry, Difference-in-difference estimates

					2SLS Estimate
	(1)	(2)	(3)	(4)	(5)
	Any dowry	*Any dowry*	*Value Dowry*	*Value Mehr*	*Value Dowry*
Value Mehr					0.255
					[0.070]**
Post_1961	0.035	0.115	27707.053	123852.041	
	[0.103]	[0.109]	[11846.150]*	[50095.613]*	
Post_1974	-0.053	-0.168	-27795.61	-100898.032	
	[0.057]	[0.083]+	[9925.360]*	[37267.146]*	
Post_1990	0.006	-0.061	1515.933	4861.525	
	[0.080]	[0.090]	[5675.216]	[8770.851]	
Post_1999	-0.062	-0.08	11934.828	55404.731	
	[0.059]	[0.078]	[16916.384]	[44518.686]	
Post_1961*(Non-municipality subdistrict)		-0.176	-22906.98	-12491.372	
		[0.077]*	[8224.494]*	[79069.779]	
Post_1974*(Non-municipality subdistrict)		0.253	29244.494	40348.004	
		[0.077]**	[10210.650]*	[46457.238]	
Post_1990*(Non-municipality subdistrict)		0.112	4930.57	6997.257	
		[0.050]*	[2510.014]+	[7564.468]	
Post_1998*(Non-municipality subdistrict)		0.033	-85.717	-31484.65	
		[0.064]	[13272.222]	[27813.782]	
Non-municipality subdistrict (upazila/thana)		-0.269	-27738.54	-89252.901	-6082.971
		[0.075]**	[10648.248]*	[54203.525]	[4881.347]
Year marriage	0.023	0.025	721.888	-2735.372	1566.659
	[0.008]*	[0.008]**	[945.077]	[816.707]**	[652.314]*
F (Post61=Post74=Post90=Post98=0)	*0.55*	*2.32*	*2.17*	*17*	
Observations	*1368*	*1368*	*1368*	*1368*	*1368*

Notes: Regression estimates, outcome in columns 1-2 is real value of amount transferred to wife in case of divorce specified on marriage contract ("Value mehr"), outcome in columns 3-5 is real value of dowry given from bride to groom at marriage. Post_1961, post_1974, post_1990 and post_1999 are binary variables indicating that marriage took place after four each year indicated, which correspond to key changes in Muslim Family Law. In column 5, dowry equal to zero if all is reported to be property of the bride. Column 6 is output from two-stage least squares estimate in which excluded variables from first-stage equation are three legal change indicators. Prices of mehr and dowry deflated to 1980 levels using price of jute. Regressions also control for linear trend in year of marriage and seven 8-year period indicators to allow for non-linear time trends in marriage payments. Data come from the 2004 Bangladeshi Rural-Urban Linkages Survey conducted by IFPRI. Standard errors in brackets. + significiant at 10% level; * significant at 5% level; ** significant at 1% level.