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Abstract

Arranged marriage is a persisting practice in many migrant communities in Western Europe and North America. How can arranged marriages survive in conditions where migrants are exposed to the individualistic values and behavior patterns of the host society, and where divorce is easy and public safety nets are in place is a puzzling question. To answer it, we build a novel theory in which parents and children bargain over the choice of a spouse. We show that, perhaps paradoxically, the possibility of divorce may help preserve arranged marriage. This is especially true for women who are more constrained once married. To test the prediction of the model, we exploit a change in the divorce law in Belgium (introduction of no-fault divorce in 2007). On the basis of two unique sets of data on descendants of Turkish migrants, we find that, in line with the theoretical predictions, men's propensity to marry an imported bride decreases while the same evolution is not observed for women. If anything, the latter's propensity to marry an imported groom has increased. Similarly, men's { but not women's { propensity to divorce decreases following the law change.

JEL Classification: N/A

Keywords: gender, Family Economics, Marriage, Non-western immigrants

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1 Introduction

Among the descendants of migrants in many communities of Western Europe and North America, the practice of arranged marriage, which is an important component of traditional patriarchal cultures, remains surprisingly persistent (see f. ex. Abraham, 2008, for Indians in the United States; Charsley, 2013, for Pakistanis in Britain; Ballard, 1990, for Indians in Britain; Boulahbel-Villac, 1995 for Algerians in France; Carol et al., 2014 for Turks and Moroccans in six European Countries). The persistence of arranged marriages is especially remarkable as thye often take the form of union with a spouse who has been born in the country of origin and migrates for this purpose (a so-called "imported spouse"). Is it not the case that host societies offer abundant outside opportunities represented by potential partners from various origins? An attractive explanation is based on the idea that the feeling of identity is an important component of the individual's utility. More precisely, attachment to one's culture and the associated identity may justify forsaking the advantages linked to social integration into the host society. In economics, a key reference is the work of Bisin and Verdier (2000) who have proposed a theory of cultural persistence among minority groups. In this theory, brides and grooms generally prefer to be matched to a person of the same culture because this gives them a better chance of passing their cultural traits to their children. Parents' success in socializing their children in the culture of origin is reflected in the latter's choice to marry within that culture.

The reality, however, seems to point to a more complex situation: the culture of the migrants only partly persists. First, at the level of the community, while some traits or traditions of the minority culture indeed persist, other traits tend to evolve, sometimes rapidly. Evolution may even occur in the heart of that culture, namely in the sphere of family relations and, more specifically, in matters related to marriage and divorce. Second, members of immigrant communities often go through painful experiences of personal disjunction. This means that they are torn away between two cultural worlds, the culture of origin which their immediate entourage highly values, and the host culture to which they are unavoidably exposed through schooling and work, and which presents attractive advantages (individual freedom and mobility, in particular).

How do individuals respond to the internal tension born of the comparison of the two cultural worlds? As highligthed in social science literature, they often seek to accommodate the two cultures by carefully navigating between their respective repertoires.[1] Thus, they may seize opportunities

[1] In terms of the typlogy of institutional change proposed by Mahoney and Thelen (2009), this strategy conrresponds to 'layering', that is, the introduction of new rules (norms) on top of, or alongisde, existing ones.

offered by the host society while strategically following important norms of the traditional order. The mechanism evokes the role of veiling as it has been analyzed by Carvalho (2012): women use veiling as a way to signal their attachment to the traditional culture in order to take advantage of emerging educational and economic opportunities and ultimately emancipate from its influence. Clearly, the range of possible responses to the existence of two cultures does not only consist of radical attitudes involving the outright rejection of either realm but also includes compromising attitudes aimet at preserving links to both (Graves, 1970; Leshem and Shuval, 1998; Taylor et al., 2012; Vieira and Mendes, 2010Graves, 1970; Leshem and Shuval, 1998; Taylor et al., 2012; Vieira and Mendes, 2010). As a result, the traditional social order of migrant communities may be transformed gradually and rather discreetly, perhaps behind a façade of cultural persistence.

In this paper, we investigate marriage and spousal choices in a migration context, and our contribution is both theoretical and empirical. On the former level, we conceptualize arranged marriage as the result of a compromise rather than as a decision which the parents impose on passive children, or as a choice freely made by children eager to perpetuate their culture of origin. Marital choices are a key determinant of cultural persistence over successive generations and, precisely for this reason, they are likely to crystallize internal and family tensions. When a spouse is selected, the stakes are very high for the members of both the younger and the older generations: while the latter want a spouse who safeguards the culture of origin, the former harbour expectations of personal happiness nurtured through their exposition to the practice of love marriage in the host society. At the same time, refusing an arranged marriage involves a significant cost and members of the younger generation are typically wary about severing ties to their community which they also value. To find out how a compromise may emerge, we model marriage as the result of bargaining between parents and children over spousal choice. This approach to marriage stands in stark contrast to the existing literature. While in Bisin and Verdier (2000) individuals seek a mate with similar values and parents influence spousal choice only indirectly (through their socialization efforts), in many other works parents simply choose a spouse for their child (see, e.g., Rosenzweig and Stark, 1989; Jacoby and Mansuri, 2010; Do et al., 2013). Our change of approach has important policy implications since it implies that family laws in host societies have a direct effect on arranged marriage, which is not true in traditional models of arranged marriage.

Our setup yields the prediction that while bargaining with the parents, the possibility of exiting an unhappy marriage through divorce may convince a child to accept an arranged (first) marriage.

In other words, a child with "modern" values (a child who has not been successfully socialized inside the minority culture) may well choose a spouse with "traditional" values to oblige the parents.[2] This outcome is facilitated by the fact, substantiated by our empirical evidence, that divorce does not suffer from strong opprobrium or disapproval. On the other hand, an arranged marriage does not have the same consequences for men and women: it is more difficult for the latter to put up with an unhappy union when the extreme option of divorce is avoided. In the context of patriarchal cultures, indeed, pursuing an extra-marital relationship (or more generally, going one's own way while married) is more costly for women than for men. A striking comparative-static result then obtains: a fall in the cost of divorce dampens the incentive to engage in an arranged marriage for men but not for women. Anticipating that leaving an unhappy union is cheaper, women become more likely to agree to an arranged marriage. By contrast, since they know that they may have to bear the cost of divorce (when they could previously live a life of bachelor while married), men are inclined to adopt the opposite attitude.

The claim that women may willingly accept an arranged marriage which they know can be exited if it turns sour may look far-fetched or even preposterous. Anthropologists, however, have provided clear anecdotal evidence testifying that this possibility is real among Turkish immigrants in Belgium (Jamoulle, 2009). Our empirical objective is therefore to check whether this strategic behavior is present on a scale significant enough to be detectable in sample data. To carry out this test, we measure the gender-differentiated impact of the law introducing no-fault divorce in Belgium (2007) on marriage choices made by second and third-generation Turkish migrants.[3] Specifically, in the spirit of a difference-in-difference estimation, we compare men and women's marriage outcomes between cohorts exposed to the reform and cohorts not (or less) exposed. We rely on two different sets of data. First, administrative data of the national register are matched with the social security database. From there, we drew a representative sample of 9300 second- and third-generation migrants. This is a rather unique data: the Belgian population registry reports information about the place of birth of parents of current Belgian residents, regardless of their (current) nationality, and it allows to link individuals to their spouse (in most cases). Second, first-hand data have been collected in the Turkish community of Brussels where we interviewed 490 respondents. They provided us with detailed information on their own marriages, and on the marriages of their parents, siblings, and children.

[2]This possibility does not exist in Bisin-Verdier's framework where endogamous matching is the result of the parents' socialization efforts.

[3]Second and third-generation migrants are individuals born in Belgium from parents or, respectively, grand-parents born in Turkey.

To distinguish between arranged and non-arranged marriages in the administrative data, we rely on the date of migration of the spouse. When the spouse has been born in Turkey and migrated after marriage, the marriage is typically arranged by the family and we thus use marriage migration (or spouse import) as proxy for arranged marriage. In our first-hand data set, we were able to collect greater details regarding the intervention of the parents in the choice of the spouse thereby enabling us to adopt a more accurate definition of arranged marriage. Using the two datasets, we can confirm that more liberal divorce laws have opposite effects on men and women: they decrease the incentives of men to engage in an arranged marriage and increase those of women. This gender-specific effect is detectable because the marriage market is not closed. Second-generation women and men are not limited to choosing their partner amongst themselves or drawing from the pool of imported spouses. They may also choose not to marry at all, to delay marriage or to marry outside the community.

In our view, the practice of arranged marriage appears as a way for descendants of migrants to accommodate the two cultures: anticipating the availability of new opportunities offered by the host society in the form of divorce and free remarriage, they strategically follow traditional norms of behaviour by accepting a spouse chosen by their parents. Understanding such mechanism of partial cultural persistence is especially important today since migrant communities are often perceived as offering a strong and enduring resistance against the cultural influence of the host societies, refusing to adopt many of their cultural traits and values, and preferring to stick to their traditional norms and behaviour patterns. This perception, which has shaken the optimism of the "melting pot" theory that prevailed in earlier times, is feeding the propaganda of (extreme) right movements eager to preserve the cultural integrity of the Western civilization, against allegedly refractory migrants.

In addition to contributing to a large literature in the social sciences, we participate in an emerging literature in economics that sees the evolution of marriage practices as a central aspect of cultural evolution (for a survey, see Guirkinger and Platteau, 2020: 481-99; see also the recent work of Schulz, 2016). Fukuyama (2012) went so far as contending that "individualism in the family is the foundation of all other individualisms" (p. 239). Theoretically, we propose a novel theory of arranged marriage that posits parents as agents in a model of marriage and divorce in which they bargain with their children about spousal choice, and in which the costs of marriage are gender-specific. While classical models of marriage look at the effects of a change in the cost of divorce on the quality of the match and the propensity to marry, our focus is on the effect of this change on traditional (i.e. arranged) marriages, in which parents actively intervene.[4] Moreoer, we submit that the relationship between arranged marriage and divorce may obey a causality different from the one conventionally assumed: instead of the former driving the latter (representing bad matches, arranged marriages are more likely to end up in divorces), easier divorces may encourage arranged marriages. Empirically, our attempt belongs to the surging literature that explores the impact of legal changes, particularly in matters of divorce and inheritance, on individual behavior and gender relations (see, e.g., Roy, 2015; Anderson and Genicot, 2015; Mookerjee, 2019; La Ferrara and Milazzo, 2017).

The outline of the paper is as follows. In Section 2 we present the data. In Section 3 we illustrate with both quantitative and qualitative evidence the persistence of a number of important cultural practices inside the Turkish community of Brussels. Based on these observations, we then construct a theory of arranged marriage and cultural transmission (Section 4). In Section 5, we introduce our empirical strategy to test a key prediction of the theory, namely that a change in the cost of divorce has gender-asymmetric effects on the practice of imported spouses and divorce. In Section 6 presents empirical results and Section 7 concludes.

2 Data

2.1 Administrative data

In 2019, for a representative sample of second and third generation migrants, we obtained administrative data drawn from the Belgian National Registry (representative of the situation as of December 31st of 2018). The sample consists of 9291 individuals, who were born in Belgium from two parents born in Turkey (second generation individuals or G2) between 1975 and 1991 or from at least one second generation parent (third generation individual, or G3).[5] One important advantage of this sample

[4]Interestingly, the predictions of classical models of marriage are ambiguous. First, if the introduction of no-fault divorce decreases the value of marriage for those who fear to be left, it has the opposite effect for those who anticipate that they may want to exit, and which effect dominates is an empirical question (Rasul, 2006). Second, and perhaps more directly relevant to our own effort, the effect of no-fault divorce may depend on why people marry (Matouschek and Rasul, 2008). Thus, if marriage serves as a commitment device, no-fault divorce will increase the quality of the match for the marginal couple (people marry less but also divorce less). If, on the other hand, marriage serves to signal love or is driven by exogenous benefits (which is perhaps the assumption closest to the setup in this paper), no-fault divorce is expected to decrease the quality of the match (for the couple marginally deciding to marry).

[5]The selection rule implies that the sample does not include the descendants of a mixed marriage between a first generation migrant and a person who is *not* from Turkish origin. Because these marriages were and are extremely rare, our sample remains representative of the community of descendants of Turkish migrants in Belgium. Lievens (1999) provides a detailed study of the marriage patterns of individuals of Turkish origin, defined as either born in Turkey or born in Belgium with a Turkish nationality, based on the information of the 1991 Belgian census. He reports that less than 5.5% of them marry an individual who is not of Turkish origin according to the same definition. Furthermore, these 5.5% are very likely to include individuals who have Turkish roots such as ethnic Turks born in Bulgaria. Our own-data indicates that only 3% of first-generation migrants married an individual who they do not declare as having a Turkish

is that it is not restricted to individuals with a Turkish nationality (or whose parents had a Turkish nationality). Only the place of birth of individuals and their parents is taken into account.

The variables available provides information on the sociodemographic characteristics of individuals such as: year and month of birth, the country of birth (and the country of birth of their parents and grand-parents), any change in their matrimonial status (along with the date of the change) and the date of birth of any child they had (along with the sex of the child). We also obtained information on education and labour market participation.[6]

An important feature of the Belgium National Registry is that, in most cases, it allows to recover the characteristics of the spouse (and former spouses) of the individuals of interest and thus to identify "spouse imports". Spouse information is available for 87% of first marriages. The information is missing if the spouse was not registered as living at the same address as the individual of interest (for at least one year), or if the spouse has not been registered as head of household (or spouse of head) while living with her/him. This implies that information is more likely to be missing when a marriage ended quickly in divorce or when the young couple has been living with a parent (who is registered as household head) since marriage. We have performed some robustness analysis to verify that our results are not sensitive to the way we deal with this missing information.[7]

Table 1 presents descriptive statistics for the sample of 9291 second- (and third-) generation migrants. Table 2 breaks the sample by gender. All variables used in the analysis are included, along with the administrative information about education and labour market participation. The sample consists overwhelmingly of second-generation migrants, with third-generation migrants accounting only for 3% of the total sample. The majority of individuals in the sample have been married at least once (76%) and marriage ages are relatively low: the average age at marriage is 22 for women and 24 for men. Nearly half of the marriages involve spouses who grew up in Turkey: 48% of spouses were born in Turkey and arrived in Belgium after the age of 16. Almost the same proportion of spouses formally registered in Belgium *after* their marriage with the individual of interest (our proxy for "imported spouse", as detailed below). Moreover, second- (and third-) generation women are more likely than men to be married to an individual who migrated after marriage (47 versus 40%). A total of 20% of first marriages ended in divorce and almost half of these divorces occurred withing the first 5 years of

nationality (possibly along with another one). Among them, the majority are Turks from Bulgaria and all of them speak Turkish and are Muslim. In short, in Belgium, marriage between an individual born in Turkey and an individual with no Turkish roots is exceptional.

[6]Data on education and the labour market is obtained from the Crossroad Bank of Social Security data base, which can be linked to the National Registry.

[7]Reassuringly, the results stand whether we assume that all missing information corresponds to spouse import, or that none of it does.

marriage.

2.2 First-hand Data

In 2015 we conducted a survey in two municipalities of Brussels where the concentration of inhabitants of Turkish origin is the highest in Belgium. We obtained our sample from the Belgian National Registry which provided us with the names and addresses of randomly chosen individuals of Turkish origin, regardless of present citizenship. The sample includes three distinct categories of individuals: people born in Turkey (labeled G1 for first generation), people born in Belgium from two parents born in Turkey (labeled G2 for second generation), and people born in Belgium from at least one parent belonging to the migrant population of the second generation (labeled G3 for third generation). In total we surveyed 489 individuals, 322 women and 167 men, aged 20 to 65. The generation-wise distribution of the respondents is: 230 G1, 190 G2, and 69 G3 individuals.

We administered a detailed questionnaire including not only standard modules about household demographics, education, labour market participation and levels of living, but also more specific modules dealing with questions of identity and marriage. As far as identity is concerned, we investigated the importance of existing links to Turkey and the Turkish community in Belgium. Particular focus has been put on proficiency in Turkish, French and Dutch languages, exposure to Turkish media, involvement in Turkish associations, frequency of travels to Turkey, family and friendship networks, and prospects regarding future residence and places of burial. Regarding marriage, we inquired about the parents' involvement in the choice of the spouse, the characteristics of the latter, the quality and duration of the marriage, and the circumstances of divorce if they apply. These questions were raised not only for the respondent but also for his/her parents, siblings and children, thus enabling us to increase the number of observed marriages much beyond the number of respondents. Our econometric analysis is based on the marriage outcomes of G2 and G3, and it includes 793 individuals born after 1970 and all turned 25 before the survey. For this sample, Tables 3 and 4 report descriptive statistics related to all variables used in the empirical analysis. In the next section, we describe various measures of the persistence of Turkish culture in the sample of respondents.

Precisely because of the rather closed character of the Turkish community in Brussels, we had to devise ways to penetrate it and obtain the minimum trust required for eliciting answers to our questions. First we obtained the active support of the mayor of one of the two municipalities, who is of Turkish origin and a popular local politician. He agreed to announce our survey to local residents via a regular newsletter and to encourage them to participate. Second we recruited a team of experienced and multilingual Turkish enumerators who were flexible enough to administer the questionnaire at a suitable time (including evenings and week-ends) and suitable place (possibly outside of the home) for the respondent.

3 Persistence of Turkish culture among second- and third-generation migrants?

In this section we provide descriptive evidence on the importance of the Turkish culture for the descendants of migrants, on the active role of parents in the marriage decisions of their children, and on divorce and its acceptance in the community.

3.1 The place of Turkish culture among descendants of migrants

Attachment to the culture of origin among migrants is an oft-noted phenomenon (see, for example, Charsley, 2013). In Table 5, we report a series of measures of this attachment based on our first-hand data, distinguishing between the three generations of respondents. These measures reveal a consistent picture of the persisting importance of Turkish identity among them. In particular, we see that almost all respondents, whichever the generation they belong to, speak Turkish at home. However, and in contrast to what is observed for first-generation migrants, only a minority of respondents born in Belgium (G2 and G3) reports that Turkish is the only language they speak at home. In addition, the time spent in watching Turkish TV channels represents more than 55% of total watching time even for G3 respondents (the decline across generations is actually slow). Statistics regarding the residential pattern are also revealing: 70% of the G2 and G3 respondents stated that they have relatives or in-laws living in their neighbourhood. As expected, the proportion is lower for G1 migrants, but it still works out to 60%.

The frequency of visits to Turkey is remarkably high since 80% of respondents travel at least once a year to Turkey (typically in holiday time). Surprisingly, we do not detect a decrease across generations. Also unexpected is the high percentage of respondents who admit to paying annual fees in order to be buried in Turkey: while this proportion is about 80% for G1 and G2 migrants, it still exceeds 60% for G3 migrants.

We have three indicators of religious adhesion. The first one measures the intensity of the respondent's religious beliefs. We see that 29% of G1 migrants consider themselves as strong believers (in Islam), a proportion that goes down to 13% for both G2 and G3 migrants. At the other end of the spectrum, the proportion of those identifying themselves as non-believers (or skeptics) is very small: 1% for G1, 2% for G2, and 4% for G3. The second indicator, which refers to the practice of prayer, also reflects a decline across the generations: while 60% of G1 admit to praying regularly, the proportion falls to only 39% for G2 and 32% for G3. The third measure, which concerns the practice of fasting (Ramadan), does not point to a radical change between the three generations: 73% of G1, 66% of G2 and 75% of G3 report to be following the fasting ritual. The stability of the last indicator is probably caused by the collective and highly visible manner in which fasting is organized and enforced.

3.2 Arranged marriage and imported spouses

Regarding marriage, the first observation is that most second- and third-generation migrants in both samples are married. Thus, in the administrative sample, a first marriage was registered for 76% of the descendants of Turkish migrants aged 27 to 43 (Table 1). In our own data, 81% of the sampled individuals between 25 and 45 are or were married (Table 3). The reason behind the slightly lower rate of marriage in the first sample may be that respondents reported marriages that were not (yet) formally registered in the National Registry: in the case of spouse import, in particular, a ceremony typically takes place in Turkey prior to formal registration in Belgium. A second observation is that ages at marriage are relatively low: 22 years, on average, for women and 24 years for men, based on the administrative sample (22 and 23 years, respectively, when we use the first-hand sample).

Third, the practice of homogamous unions among second- and third-generation migrants is a widespread practice. From the first-hand sample, it is evident that in as many as 94% of the cases, the parents of the respondent's first spouse were born in Turkey (spouses are G1 or G2 migrants). In addition, the remaining 6% include some ethnic Turks born outside of Turkey (in Bulgaria, for example). In the administrative sample, the proportion of marriages with a first- or second-generation migrant is at least 89%. This is a lower bound estimate because the information about both parents' place of birth is missing for an additional 4% of marriages (where the place of birth of the spouse is known), and parents are born outside of the EU in 2% (and they may well be ethnic Turks, as suggested by the first-hand data). In only 3% of marriages, both parents of the spouse are born in Belgium and even in these instances, they could still be of Turkish origin.

Fourth, measuring arranged marriage is a thorny task because this practice can be understood in a variety of ways and is actually evolving. The most extreme form is a union with a partner imposed by the parents. Milder forms are encountered when a spouse has been suggested by the parents or met on the initiative of the family. A still more benign form is obtained when a child has asked the parents to approve his/her choice of a marriage partner.

From the first-hand data, we know, for each marriage, whether the spouse was suggested by the parents and whether the marriage implied a migration of the spouse: as many as 47% of the reported spouses were suggested by the parents while 41% were imported from Turkey (Table 3). These proportions do not differ by gender (Table 4). When the spouse is "imported" from Turkey, in the sense that the migration of the spouse follows the marriage, parents are often directly involved in the spousal choice. From accounts of social scientists, the first encounter with the future spouse seems to frequently take place during a vacation trip to Turkey where families of migrants arrange or facilitate meetings of young people with potential partners considered "suitable" (Timmerman et al., 2009). Marriages are often quickly organized following the encounter, sometimes before the end of the summer vacation. Our first-hand data confirm this active role of the parents: in about 75% of the marriages that involved a migration, parents were the first to suggest a person as a suitable candidate, against 31% in other types of marriages.[8] For the marriage of respondents, we also know how often spouses met before marriage and whether the respondent formally asked her or his parents for approval over the choice of a partner. Answers confirm that marriages of second- and third-generation migrants remain traditional in several aspects: almost 20% of brides and grooms had not met their future spouse more than 5 times before marriage and, in 94% of the cases, parents had been asked to explicitly approve the marriage.

The administrative data is not so rich in details, yet it allows us to construct a measure of spouse import by comparing the date of first registration of the spouse in the National Registry with the date of marriage: when the marriage precedes the registration, we infer that the spouse migrated after the marriage, and we record her/him as a spouse import. Using this definition, Tables 1 and 2 indicate that 43% of first marriages registered in the administrative data involved a spouse import. Moreover, women appear more likely to import a groom (47%) than men to import a bride (40%).

In our questionnaire, we have not inquired about the motives behind arranged marriages. Yet, socio-anthropological studies have shed light on this question and they emphasize the importance that

[8]Note that this proportion is likely to be a lower-bound estimate of the involvement of parents in marriage decisions when the marriage involves a spouse in Turkey. This is because parents tend to control the network in which their children socialize while being in Turkey. In these instances, parents influence spousal selection indirectly rather than directly.

the parents attach to the transmission of their culture and values to grandchildren. Explicitly referring to migrant Turks in Belgium, Jamoulle (2009) thus writes:

> Parents are tormented by the question of origin. They feel ashamed because Belgium has transformed their children in a way that makes them forget about where they come from. They feel guilty for having been unable to transmit the Turkish 'genos', with the result that they do not recognize themselves in their children who, moreover, are not well accepted in the Belgian society. [...] As they conceive it, the Turkish purity of the imported spouse will heal the wounds of exile and bring psychologically strong grandchildren (pp. 199-200 – our free translation).

Language is a dimension of culture and social identity that parents consider important. A special problem arises because migrants tend to mix up Turkish language with words coming from the locally spoken languages. When they return to Turkey, they appear "illiterate" in the eyes of their local peers who speak "a literary Turkish language taught in highly performing primary schools" (p 207). Finding themselves in a no man's land between two cultures, children are subject to painful inner tensions:

> While parents would like their children to remain strangers in the host country where they have been born, the children themselves feel strangers in the country of their parents (Jamoulle, 2009, p. 208; see also Fukuyama, 2018, pp. 70-71).

Our data provide indirect evidence that the cultural transmission motive underlies the practice of arranged marriage in general, and of imported spouses in particular. First, grandparents appear to be more involved in the education of their grandchildren when the latter have been born of a migration marriage. Table 6 reports the correlation between the frequency of contacts between grandparents and grandchildren and the type of marriage of the children, controlling for birth year and gender of the child, and the age of the eldest grandchild. When their child married an imported spouse, grandparents turn out to be 22 percentage points more likely to see their grandchildren several times a week (column 1). The effect is even larger for paternal grandparents (28 percentage points, column 3). Similarly, the probability that grandparents look after their grandchildren on a daily basis is higher when their child went through an arranged marriage (columns 4 to 6). Yet, the effect is statistically significant for paternal grandparents only (20 percentage points).

Second, first-born children are more likely to marry an imported spouse than their siblings. Plotting the results of a fixed effect regression, Figure 1 reports the correlation between relative birth rank and the propensity to marry an imported spouse.[9] In this regression, a binary variable measuring marriage migration is regressed on relative birth rank, controlling for gender and education and defining the

[9] Relative birth rank goes from 0 (for the first-born) to 1 (for the last-born). It is equal to (absolute birth rank - 1)/(total number of siblings - 1), where the absolute birth rank goes up from 1 (for the first-born).

fixed effect at the sibship level.[10] It is striking that the probability to make a migration marriage decreases from 0.5 for the first-born child to 0.3 for the last-born. It is a standard feature of cultural transmission that parents tend to assign the task of continuing the family's traditions to their eldest child. A plausible explanation is that cultural transmission is so important in the eyes of the parents that, in uncertain circumstances, they want to ensure that it is achieved as quickly as possible. Once reassured that grandchildren have been born of a traditional marriage, they become more lax for the marriages of the later born. Another reason is that first-born children are more easily influenced by their parents who typically invest more time and emotional energy in them (Black et al., 2005).

Finally, we collected data on the rules that respondents impose to their children. We observe a correlation between the type of marriage that G2 respondents made and the education that their children receive. Table 7 reports the correlation between rules imposed on children and spouse import, controlling for age and gender of the child. Compared to other girls, those born of a marriage that involved the migration of a spouse are less likely to be allowed to swim during sport at school, less likely to be allowed to leave the house unaccompanied by a family member, less likely to receive pocket money, and more likely to be going to Koranic school. The correlation of spouse import with veiling is positive, albeit not significantly.

To sum up, when they are born of an imported spouse union, children of G2 migrants receive a more traditional education, and they are looked after more often by the grand-parents.

3.3 Divorce and extra-marital relationships

Divorce rates are high: in the administrative data sample, a total of 20% of first marriages ended in divorce and almost half of these divorces occurred within the five first years of marriage. Divorce rates are comparable in the first-hand data sample, with 17% of respondents and their siblings having experienced divorce.[11] Such divorce rates are particularly high when we compare them to the low prevalence of divorce in Turkey. For example, our first-hand data provides information on the marital outcomes of siblings of the first-generation respondents who did not leave Turkey. Among them, less than 5% of first marriages ended in divorce. Since they typically live in the region of origin of the parents of our sample G2 individuals, they constitute a particularly relevant comparison group.

[10] The sample includes G2 and G3 individuals. In the case of G1 respondents, the relevant units of observation are his/her adult children, while if the respondent is G2 or G3 the units of observation include both the respondent and his/her siblings. Note that the generation is absorbed in the fixed effect.

[11] For divorce, we restrict attention to respondents and their siblings because information on divorce is not consistently available for the other categories of G2 and G3 individuals (parents and children of respondents).

The respondents concerned were asked who initiated the divorce. As it turns out, women are more likely to trigger a divorce than men: women thus declared that the divorce was initiated by them alone in 68% of the cases (male respondents reported that they were sole initiator in 33% of cases).

With divorced respondents, we also inquired about the attitude of the family and the community towards their divorce. Results there are quite unexpected. It appears that divorcees are not ostracized by their immediate entourage. For example, to the question as to whether they could rely on the support of some family members during the divorce process, 63% answered positively. In the other way, only 5% responded positively to the question as to whether they were subject to pressure from family members opposing their divorce. Furthermore, 90% declared that following divorce they did not feel rejected by any member of their family or any member of their community.

Instability of marriages among descendants of migrants (especially compared to the country of origin) has been observed in other immigrants groups, such as Turkish immigrants in Denmark, Iranian immigrants in Sweden, and Southeast migrants in the UK (Liversage, 2013, Darvishpour, 1999, Darvishpour, 2002, Qureshi et al., 2014). Social scientists underline that, contrary to a widespread view, divorce among young people is rarely a source of tension between parents and children: the stigma attached to divorce is much less prevalent than in the past and parents do not hesitate to back their child's decision to divorce and remarry. Lastly arranged marriages persist even though they are increasingly viewed as more risky than before.

For obvious reasons, the survey method is not appropriate to elicit information regarding extra-marital relationships. Here, the participant observation approach of anthropologists is much more appropriate. Especially relevant to our study is the aforementioned work of Jamoulle (2009) who deals with the same population as we do. A central message of her exploration of marital life is gender asymmetry: while men may pursue their bachelor's life even after marriage, and the community easily condones their extra-marital relationships, women's behaviour is more tightly controlled and extra-marital affairs indulged by them are severely condemned.[12] In Jamoulle's words:

> For Turkish men, it is customary practice to have a pleasurely life outside the conjugal couple. The opposite holds true for women: a woman who has a lover is considered to be a whore... As per the custom, marriage is typically seen by men as the continuation of the relationship with the mother. If the daughter-in-law is obedient and the progeny is abundant, the man has fulfilled his contract vis-a-vis the community. Therefore, he is allowed to enjoy himself outside of the home and

[12] Interestingly the gender specific treatment of adultery was present in formal Turkish law between 1926 and 1996: the Turkish Penal Code of 1926 considered adultery as a punishable offense, for men as well as for women. Yet the definition of what constituted adultery was different for men and women. For men adultery meant living with a lover in the conjugal home together with his wife, or at an official address known to all. For women, any extramarital sexual relationship constituted adultery (Orucu, 2006). This assymetry of treatment between men and women's extramarital affairs is present in many other societies (see for example Bishai and Grossbard, 2010 for Uganda).

> the elders will close their eyes... This dual life of the Turkish men is causing a lot of suffering and undermines many marriages, especially so in migration urban contexts where access to mistresses is much easier than in the villages of origin... Generally, however, even though he may be unhappy as a husband, the man will not divorce from the mother of his children whom he respects as such" (Jamoulle, 2009, pp. 199-200 –our free translation).

To sum up, Turkish migrants in Belgium continue to be influenced by their culture of origin in many facets of their everyday life, including spousal selection and marital life. In some respects, however, Western modern culture has intruded: divorces have become more widespread and they are often triggered by women rather than men. This situation is relatively well accepted by relatives.

4 Theory of Arranged Marriages and Cultural Transmission

In the following, we develop a theoretical model of marriage arrangements where the roles of the families of the bride and groom are made explicit. In the model, the choice of marriage partner emerges as an outcome of bargaining between the individual marrying and her/his family. Specifically, s/he may 'accept' to marry a potential partner who differs from her/his preferred partner in exchange of the promise of continued social support provided by her/his family. We show that this bargain depends on the possibility of exiting an unsatisfactory marriage at a later date, for example by means of divorce. Thus, the cost of divorce affects the incidence of arranged marriages.

We also show that the effects of a change in divorce costs on arranged marriage depend on whether or not it is possible to exit a union (and find a new partner) without formally ending the marriage, an alternative that is available to men but not to women in our study context as described in Section 3.3. We show that, if such gender difference exists, then a decline in divorce costs may lead to a decrease in the incidence of arranged marriage among men and to the opposite effect among women. At least, this is true in a setting where there is a separate pool of potential partners for arranged marriages.

4.1 Setup

Let us denote by b the bride and by g the groom. We use f_b to represent the family of the bride and by f_g the family of the groom.[13] A potential bride and groom have vectors of characteristics $\mathbf{X}_b$ and $\mathbf{X}_g$ that are relevant for the match. These vectors include measures of human capital of the bride and groom, their personal traits as well as cultural or religious background (which may figure differently in the preferences of individuals marrying and their respective families). We assume that marriage

[13] In the following discussion, we use the terms 'family' and 'parents' interchangeably.

between a bride b and a groom g, with characteristics $\mathbf{X}_b$ and $\mathbf{X}_g$ respectively, generates utility of $U_b(\mathbf{X}_b, \mathbf{X}_g)$ for the bride and $U_g(\mathbf{X}_b, \mathbf{X}_g)$ for the groom.

Let us denote by $U_{fb}(\mathbf{X}_b, \mathbf{X}_g)$ and $U_{fg}(\mathbf{X}_b, \mathbf{X}_g)$ the utility levels derived by the families of b and g from the same match. The characteristics of the potential brides and grooms are, potentially, ranked differently by the individuals on the marriage market and by their respective families. For example, one of the factors considered by the parents of the bride and groom may be the likelihood of cultural transmission to their grandchildren which depends on the culture of their daughter-in-law or son-in-law. But matching on culture alone may not be optimal from the perspective of the bride and groom. Drawing on Bisin and Verdier (2000, 2001), we formally model cultural transmission and explore its implications for the choice of marriage partner further below.

4.1.1 Transmission of Values to Offspring from the Marriage

In the context of marriage decisions within minority groups, a potentially important concern is what type of values will be acquired by the children born of the marriage. A groom (bride) who shares the values of the bride (groom) or her/his family can help ensure that the children born of the marriage inherit their values. The risk that these values are not transmitted to the next generation is arguably higher in the case of minority groups as the children will be exposed to a diversity of cultural norms and habits, some of which may be in direct conflict with the parents' and grandparents' own values. To investigate how these issues can influence marriage decisions, we add additional structure to the above utility functions by drawing on models of cultural transmission (Bisin and Verdier 2000, 2001; Bisin, Patacchini, Verdier, Zenou 2011).

Suppose that there are two types of values, t representing 'traditional' values and m representing 'modern' values. Let us denote by $v(\mathbf{X})$ the type of values possessed by an individual with characteristics $\mathbf{X}$. We assume that the utility levels $U_b(\mathbf{X}_b, \mathbf{X}_g)$ and $U_g(\mathbf{X}_b, \mathbf{X}_g)$ generated by a marriage is the sum of two elements: (i) the utility dependent on the mutual compatibility of the marriage partners denoted by $M(\mathbf{X}_b, \mathbf{X}_g)$ and (ii) the expected utility from the cultural transmission process.

We introduce some additional notation to represent the second element. Following Bisin and Verdier (2001), let V^{ij} be the utility derived by an individual with values of type $i \in \{t, m\}$ when his/her child inherits values of type $j \in \{t, m\}$. Let P^{ij} be the probability that a child acquires values of type j when both parents have values of type i, where $i, j \in \{t, m\}$. Let $\tilde{P}^j$ be the corresponding probability when parents have dissimilar values (i.e., one parent has values of type i and the other has values of type $j \neq i$). We make the following assumptions about these terms.

Assumption 1 $V^{mm}, V^{tt} > V^{mt}, V^{tm}$

Assumption 2 $P^{mm} > \tilde{P}^{m} > P^{tm}$ *and* $P^{tt} > \tilde{P}^{t} > P^{mt}$

Assumption 1 means that individuals derive greater satisfaction when their own values are transmitted to their child. Assumption 2 means the probability that the child inherits the parents' values is higher when the two parents have the same values; and that the probability that the child inherits different values from a parent is lower when his/her spouse shares his/her values. Note also that, by construction, we must have $P^{mm} = 1 - P^{mt}$, $P^{tt} = 1 - P^{tm}$, and $\tilde{P}^{m} = 1 - \tilde{P}^{t}$.

Given these definitions, we can add additional structure to the utility generated by a marriage, as defined in the previous section. Let $v(\mathbf{X}_b) = i$, $v(\mathbf{X}_g) = k$ and $j \neq i$. Then we can define the bride's utility as follows.

$$U_b(\mathbf{X}_b, \mathbf{X}_g) = \begin{cases} M(\mathbf{X}_b, \mathbf{X}_g) + P^{ii}V^{ii} + P^{ij}V^{ij} + \epsilon \text{ if } i = k \neq j \\ M(\mathbf{X}_b, \mathbf{X}_g) + \tilde{P}^{i}V^{ii} + \tilde{P}^{j}V^{ij} + \epsilon \text{ if } i \neq k = j \end{cases} \tag{1}$$

To interpret (1), let us first consider the case where the spouses share the same values, i.e. $i = k$. The first term $M(\mathbf{X}_b, \mathbf{X}_g)$ simply captures the surplus generated by the marriage due to their degree of mutual compatibility. The next two terms capture the bride's expected utility from cultural transmission to her child (or children). With probability P^{ii}, the child inherits her own values, which gives her a utility of V^{ii}. With probability P^{ij} the child inherits values $j \neq i, k$ and obtains a utility of V^{ij}.

In the second case, the spouses have different values, i.e. $i \neq k$. The expression for mutual compatibility remains the same but the expression for the expected utility from cultural transmission is different. With probability $\tilde{P}^{i}$, the child inherits the mother's values, denoted by i, which yields her a utility of V^{ii}. With probability $\tilde{P}^{j}$, the child inherits the father's values denoted by $k = j$ and yields the mother a utility of V^{ij}.

Finally, we assume that ϵ is a stochastic variable realised only after the marriage has been initiated; the distribution of ϵ is described by the c.d.f. $F(.)$ and $\mathbf{E}(\epsilon) = 0$. The variable ϵ represents the utility stemming from factors of compatibility not observed during the period of courtship.

Lemma 6 in the Theoretical Appendix shows that, for a given level of mutual compatibility, the utility generated by a marriage is higher where the spouses share the same type of values – i.e.

$v(\mathbf{X}_b) = v(\mathbf{X}_g)$ – compared to the case where they do not.

Turning to the families of the bride and groom, f_b and f_g, we allow for the possibility that their values differ from those of the bride and groom, respectively. For example, within immigrant communities, it is possible that first-generation immigrants fail to transmit their own values to their second generation offspring, given the latter's exposure to values of the host society. We use $V^{i'j}$ to represent the utility derived by the bride's parents with values of type i' when their grandchildren acquire values of type j.[14] We denote by $v_f(\mathbf{X})$ the values for the parents of an individual with characteristics $\mathbf{X}$. Suppose that $v_f(\mathbf{X}_b) = i'$, $v(\mathbf{X}_b) = i$, $v(\mathbf{X}_g) = k$ and $j \neq i$. Furthermore, we define

$$U_{fb}(\mathbf{X}_b, \mathbf{X}_g) = \begin{cases} \lambda_f M(\mathbf{X}_b, \mathbf{X}_g) + P^{ii}V^{i'i} + P^{ij}V^{i'j} + \epsilon \text{ if } i = k \neq j \\ \lambda_f M(\mathbf{X}_b, \mathbf{X}_g) + \tilde{P}^{i}V^{i'i} + \tilde{P}^{j}V^{i'j} + \epsilon \text{ if } i \neq k = j \end{cases} \tag{2}$$

where we assume that $\lambda_f \in (0, 1)$. The expressions in (2) can be interpreted in a similar manner to (1). If the spouses share the same values, i.e. $i = k$, then the offspring of the marriage inherits the values of the bride and groom with probability P^{ii}, and the bride's parents have a utility of $V^{i'i}$ (note that the grandparents may or may not have the same values as the bride). The offspring acquires different values from the bride and groom with probability P^{ij} (where $j \neq i$), yielding the bride's parents a utility of $V^{i'j}$. The case where the spouses have different values, i.e. $i \neq k$, can be interpreted in a similar manner except that the probabilities of vertical cultural transmission, P^{ii} and P^{ij}, are replaced by $\tilde{P}^{i}$ and $\tilde{P}^{j}$, respectively. Comparing (1) and (2), we see that the family derives a different level of utility from the match than the bride herself because (i) they do not attach the same weight to the mutual compatibility between the marriage partners ($\lambda_f \neq 1$) and (ii) they may have different values (i.e. $v_f(\mathbf{X}_b) \neq v(\mathbf{X}_b)$). The utilities of the groom and his parents are defined in a similar manner.

4.1.2 Bargaining over Choice of Partner

Because of potentially conflicting preferences between the marrying child and the parents, the realised match is the outcome of bargaining between them. We model the outcome as a Nash bargaining solution. In the case of disagreement, the individuals can marry without family approval but this results in a loss of economic support from the family network as well as the wider social network. On the other hand, family approval of the marriage partner may be interpreted as a signal of the trustworthiness of the individuals concerned. Therefore, the family holds stronger bargaining power

[14] We could also assign distinct utility levels from cultural transmission to the grandparents and the parents. Our main results do not depend on this. We make the simpler assumption for ease of notation.

in an economic setting where social networks are important, and weaker power in the opposite case.

Let $W_i(\mathbf{X}_b, \mathbf{X}_g) = \mathbf{E}U_i(\mathbf{X}_b, \mathbf{X}_g)$ for $i \in \{b, g, fb, fg\}$. Let us denote by N_b and N_g the value of the social network to which the bride and groom, respectively, have access via their families. Then, if the potential partners available to b are represented by the set $G(b)$, the marriage partner agreed upon through the bargaining process is given by

$$\tilde{g}(\mathbf{X}_b; b) = \arg\max_{g \in G(b)} \left[W_b(\mathbf{X}_b, \mathbf{X}_g) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}(\mathbf{X}_b, \mathbf{X}_g) - W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right] \quad (3)$$

subject to

$$\begin{aligned} W_b(\mathbf{X}_b, \mathbf{X}_g) + N_b &\geq W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) \\ W_{fb}(\mathbf{X}_b, \mathbf{X}_g) &\geq W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) \end{aligned}$$

where

$$\hat{g}(\mathbf{X}_b; b) = \arg\max_{g \in G(b)} W_b(\mathbf{X}_b, \mathbf{X}_g) \quad (4)$$

The choice of marriage partner for a groom is obtained from an identical Nash bargaining solution (except for changes in notation where relevant). We assume that the set of potential partners available to the bride and groom are exogenously given, rather than being derived from market-clearing conditions. We take this approach because of the specific nature of our study context: the candidate marriage partners are obtained either from the marriage market in Turkey or the marriage market in Belgium, both of which are considerably larger than the set of agents – Turkish immigrant families in Belgium – whose decisions we analyse. Therefore, the marriage decisions of some Turkish immigrants are unlikely to affect the potential partners available to others. We take the candidate marriage partners in $G(b)$ to be the outcome of searches conducted by the bride and the parents prior to the bargaining process. Specifically, the bride's search yields her preferred partner $\hat{g}(\mathbf{X}_b; b)$ from the Belgian marriage market and the parents' search yields the alternative candidates $\tilde{g}(\mathbf{X}_b; b)$ in $G(b)$ from the Turkish marriage market.[15]

In the following, we refer to any outcome where $\tilde{g}(\mathbf{X}_b; b) \neq \hat{g}(\mathbf{X}_b; b)$ – i.e. the groom chosen in the bargaining process does not correspond to the bride's preferred groom – as an arranged marriage. It is

[15] In Bisin and Verdier (2000), agents search and match with marriage partners in either a 'restricted marriage pool' or a 'common marriage pool'. Unlike our setting, these marriage pools consist only of agents within the model. Therefore, the potential marriage partners and the outcome of search are determined endogenously, specifically by the search effort exerted by different agents in the restricted marriage pool.

straightforward to show that if $N_b = 0$, then $\tilde{g}(\mathbf{X}_b; b) = \hat{g}(\mathbf{X}_b; b)$: when access to parental support and social networks are of no value for the daughter's well-being, the marriage outcome will be based entirely on her preferences. On the other hand, for N_b sufficiently large, $\tilde{g}(\mathbf{X}_b; b) = \arg\max_{g \in G(b)} W_{fb}(\mathbf{X}_b, \mathbf{X}_g)$: if the social networks are sufficiently important, the marriage outcome will be based entirely on the preferences of the parents. For intermediary values of N_b, both the parents and the daughter will have some say in the marriage decision. Similar reasoning applies in the case of the marriage decision of a son.

We define $g_f(b)$ as the potential groom with highest level of mutual compatibility with the bride among those who share the parents' values. The difference in the bride's mutual compatibility with her preferred groom $\hat{g}(b)$ and her mutual compatibility with $g_f(b)$, and the corresponding expressions for g, will be key to the following analysis. Therefore, we introduce the following notation.

Definition 1 $\Delta(b) = M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) - M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right)$

Definition 2 $\Delta(g) = M\left(\mathbf{X}_{\hat{b}(g)}, \mathbf{X}_g\right) - M\left(\mathbf{X}_{b_f(g)}, \mathbf{X}_g\right)$

We do not explicitly model search in the marriage markets, but it is reasonable to assume that it is a stochastic process for which the relevant parameters are the values of the bride/groom and her/his family. Formally, we make the following assumptions about $\Delta(b)$ and $\Delta(g)$:

Assumption 3 $\Delta(b) \sim F_{ij}(.)$ *where* $i = v(\mathbf{X}_b)$ *and* $j = v_f(\mathbf{X}_b)$. $F_{ij}(0) = 0$ *for* $i, j \in \{t, m\}$.

Assumption 4 $\Delta(g) \sim \tilde{F}_{ij}(.)$ *where* $i = v(\mathbf{X}_g)$ *and* $j = v_f(\mathbf{X}_g)$. $\tilde{F}_{ij}(0) = 0$ *for* $i, j \in \{t, m\}$.

In the following analysis, we will establish that a necessary condition for the bride to enter into an arranged marriage is that $v(\hat{g}(\mathbf{X}_b)) \neq v_f(\mathbf{X}_b)$ – i.e. her preferred groom have different values from those of her family. We assume that this event, and the corresponding event for the groom, occurs with some exogenous non-zero probability:

Assumption 5 $\Pr(v(\hat{g}(\mathbf{X}_b)) \neq v_f(\mathbf{X}_b)) = \Pr\left(v\left(\hat{b}(\mathbf{X}_b)\right) \neq v_f(\mathbf{X}_g)\right) = \rho \in (0, 1]$ *for all* b, g.

4.2 Analysis

4.2.1 Characterisation of Groom Choice

In this section, we provide a characterisation of the groom that will be chosen when marriages are arranged as described above and the cultural transmission process can produce a conflict of interest between a prospective bride and her family. We consider both situations where the bride and the family have the same type of values and where they have different values. While we focus on groom choice, the case of bride choice is identical apart from the difference in notation. We begin with the following results which will be used in the subsequent analysis.

Lemma 1 *Suppose* $v\left(\mathbf{X}_{\hat{g}(b)}\right) = v_f\left(\mathbf{X}_b\right)$*. Then* $\tilde{g}(b) = \hat{g}(b)$*.*

Lemma 2 *Suppose* $v\left(\mathbf{X}_{\tilde{g}(b)}\right) = v\left(\mathbf{X}_{\hat{g}(b)}\right)$*. Then* $\tilde{g}(b) = \hat{g}(b)$*.*

In words, Lemma 1 says that if the bride's preferred groom has the same type of values as her parents, then the groom agreed upon must be her preferred groom. Lemma 2 says that if the groom that the bride and her family agree upon have the same type of values as the bride's preferred groom, then it must be that the bride's preferred groom has been agreed upon. The results are significant because they imply that whenever the chosen groom is someone different from the bride's preferred choice – the more interesting case in the context of arranged marriages – it must be that the family has different types of values from the bride's preferred groom, and the latter has different types of values from the groom agreed upon. These results are formally stated as follows.

Corollary 1 *of Lemma 1: If* $\tilde{g}(b) \neq \hat{g}(b)$*, then* $v_f\left(\mathbf{X}_b\right) \neq v\left(\mathbf{X}_{\hat{g}(b)}\right)$*.*

Corollary 2 *of Lemma 2: If* $\tilde{g}(b) \neq \hat{g}(b)$*, then* $v\left(\mathbf{X}_{\tilde{g}(b)}\right) \neq v\left(\mathbf{X}_{\hat{g}(b)}\right)$*.*

We can also establish that when the chosen groom differs from the bride's preferred choice, the chosen one has the same type of values as the bride's family, as stated below.

Lemma 3 *If* $\tilde{g}(b) \neq \hat{g}(b)$*, then* $v\left(\mathbf{X}_{\tilde{g}(b)}\right) = v_f\left(\mathbf{X}_b\right)$*.*

The three lemmas and the corollaries above apply whether the bride and her family have the same type of values or not. Next, we provide some results specific to each case: (i) where they have the same type of values; and (ii) where they have not:

Lemma 4 *Suppose* $v_f\left(\mathbf{X}_b\right) = v\left(\mathbf{X}_b\right)$*. If* $\tilde{g}(b) \neq \hat{g}(b)$ *then* $M\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) < M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$*.*

In words, Lemma 4 states that if the bride and her family have the same type of values but the bride's preferred groom was not chosen, it must be that the chosen groom has a lower level of compatibility than the preferred groom.

Lemma 5 *Suppose* $v_f(\mathbf{X}_b) \neq v(\mathbf{X}_b)$. *(i) If* $v\left(\mathbf{X}_{\tilde{g}(b)}\right) = v(\mathbf{X}_b)$, *then* $\tilde{g}(b) = \hat{g}(b)$. *(ii) If* $v\left(\mathbf{X}_{\tilde{g}(b)}\right) = v_f(\mathbf{X}_b)$, *then* $\tilde{g}(b) = \arg\max_{g \in \{G(b): v(\mathbf{X}_g) = v_f(\mathbf{X}_b)\}} M(\mathbf{X}_b, \mathbf{X}_g)$.

In words, Lemma 5 states that if the bride and her family have different types of values, then there are two possible outcomes. The marriage choice will be either the bride's preferred groom, or the most compatible groom from the subset of potential suitors who share the family's values.

4.2.2 Comparative Statics

Next, we consider how environmental and institutional factors influence the marriage outcome. We proceed by defining a function that captures the difference in expected utility from cultural transmission when a bride b marries someone who shares her own values as compared to the case where the groom has different values. Using (1), this difference can be written as

$$\Phi\left(P^{ii}, \tilde{P}^i, V^{ii}, V^{ij}\right) = \left(P^{ii} - \tilde{P}^i\right) V^{ii} - \left(\tilde{P}^j - P^{ij}\right) V^{ij}$$

where $v(\mathbf{X}_b) = i$, and $j \neq i$. Similarly, using (2), the difference in the expected utility obtained by the parents of bride b from cultural transmission when their daughter marries someone who shares their values, and that obtained when the groom's values differ from theirs, can be written as

$$\tilde{\Phi}\left(P^{ii}, \tilde{P}^i, V^{jj}, V^{ji}\right) = \left(\tilde{P}^j - P^{ij}\right) V^{jj} - \left(P^{ii} - \tilde{P}^i\right) V^{ji}$$

Using the fact that $P^{ii} = 1 - P^{ij}$, and $\tilde{P}^i = 1 - \tilde{P}^j$, we can rewrite these functions as $\Phi(.) = \left(P^{ii} - \tilde{P}^i\right)\left(V^{ii} - V^{ij}\right)$ and $\tilde{\Phi}(.) = \left(P^{ii} - \tilde{P}^i\right)\left(V^{jj} - V^{ji}\right)$. By Assumptions 1 and 2, we have $\Phi\left(P^{ii}, \tilde{P}^i, V^{ii}, V^{ij}\right) > 0$ and $\tilde{\Phi}\left(P^{ii}, \tilde{P}^i, V^{jj}, V^{ji}\right) > 0$.[16]

Recall that, according to Lemma 1, if the bride's preferred groom has the same type of values as

[16] Note that $\tilde{P}^j = \left(1 - \tilde{P}^i\right)$ and $P^{ij} = \left(1 - P^{ii}\right)$. Therefore

$$\begin{aligned}\Phi\left(P^{ii}, \tilde{P}^i, V^{ii}, V^{ij}\right) &= \left(P^{ii} - \tilde{P}^i\right) V^{ii} - \left\{\left(1 - \tilde{P}^i\right) - \left(1 - P^{ii}\right)\right\} V^{ij} \\ &= \left(P^{ii} - \tilde{P}^i\right) V^{ii} - \left(P^{ii} - \tilde{P}^i\right) V^{ij} \\ &= \left(P^{ii} - \tilde{P}^i\right)\left(V^{ii} - V^{ij}\right) \\ &> 0 \text{ by Assumptions 1 and 2}\end{aligned}$$

Similarly, we have

$$\begin{aligned}\tilde{\Phi}\left(P^{ii}, \tilde{P}^i, V^{jj}, V^{ji}\right) &= \left(P^{ii} - \tilde{P}^i\right)\left(V^{jj} - V^{ji}\right) \\ &> 0 \text{ by Assumptions 1 and 2}\end{aligned}$$

her parents, then the chosen groom is always her preferred groom. Therefore, arranged marriages – i.e. outcomes where the chosen groom is *not* her preferred groom – can arise only if the bride's preferred groom has values different from that of her parents, a situation which we formally define below.

Definition 3 *A 'situation of conflict' is one where* $v\left(\mathbf{X}_{\hat{g}(b)}\right) \neq v_f\left(\mathbf{X}_b\right)$.

Note that a 'situation of conflict' can arise even when the bride and her parents share the *same* values ($v_f\left(\mathbf{X}_b\right) = v\left(\mathbf{X}_b\right)$), if the bride's preferred groom has different values from both of them. Propositions 1 and 2 describe how, in a 'situation of conflict', the probability of arranged marriage is affected by environmental and institutional factors.

Proposition 1 *Suppose* $v_f\left(\mathbf{X}_b\right) = v\left(\mathbf{X}_b\right) = i \neq j$. *In a situation of conflict, the probability of an arranged marriage is weakly increasing in the probability that the offspring from the marriage inherits the bride's values when parents have identical values* $\left(P^{ii} - \tilde{P}^{i}\right)$*, the utility gain to the bride from transmitting her own values to offspring* $\left(V^{ii} - V^{ij}\right)$*, and the value of the social network* (N_b)*; and weakly decreasing in the weight that parents place on mutual compatibility between the bride and groom* (λ_f)*.*

Proposition 2 *Suppose* $v_f\left(\mathbf{X}_b\right) = j \neq i = v\left(\mathbf{X}_b\right)$. *In a situation of conflict, the probability of arranged marriage is weakly increasing in the value of the social network* (N_b)*, and the utility gain to transmitting the grandparents' values to offspring from the marriage* $\left(V^{jj} - V^{ji}\right)$*; and weakly decreasing in the weight that they place on mutual compatibility between the bride and groom* (λ_f) *and the utility gain to the bride from transmitting her own values to offspring* $\left(V^{ii} - V^{ij}\right)$.

The probability of arranged marriage is also increasing in $\left(P^{ii} - \tilde{P}^{i}\right)$ *if* $\tilde{\Phi}(.)/\lambda_f > -\Phi(.) + N_b$ *and decreasing in* $\left(P^{ii} - \tilde{P}^{i}\right)$ *if* $\tilde{\Phi}(.)/\lambda_f < -\Phi(.) + N_b$.

Proposition 1 is concerned with the case where the bride and her parents have the same values. It states that the probability of an arranged marriage is increasing in N_b – the value of the social network that the bride can access through her parents – and decreasing in λ_f, the weight that the parents place on mutual compatibility between the bride and the groom. The probability of an arranged marriage is also increasing in $\left(V^{ii} - V^{ij}\right)$, the utility gain from transmitting one's own values to the offspring of the marriage and in $\left(P^{ii} - \tilde{P}^{i}\right)$, the increase in the probability that the offspring inherits the mother's values when the father also shares these values as compared to the case where the father has different values.

Proposition 2 is concerned with the case where the bride and her parents have different values. We obtain the same comparative-static results for N_b and λ_f as in the first case. The relation between arranged marriage and the cultural transmission parameters is, however, more complicated than before. The probability of an arranged marriage is increasing in $\left(V^{jj} - V^{ji}\right)$, the utility gain to the bride's parents from successfully transmitting their values to the grandchildren, and decreasing in $\left(V^{ii} - V^{ij}\right)$, the utility gain obtained by the bride from successfully transmitting her values to her children.

4.3 Post-Marital Strategies

Some of the marriages contracted may end in divorce, in which case the divorcees may re-enter the marriage market. The strategic options available to divorcees may differ from those entering the marriage market for the first time.

To investigate the strategic choices made by individuals and their families when divorce is a possible outcome, we consider a two-period case of the model presented above. During the first period, a married couple observe their realisation of ϵ. At the end of the period, they can continue with the marriage or opt to divorce. If they opt to divorce, they re-enter the marriage market. We assume that divorce incurs a cost C, which represents both pecuniary and non-pecuniary costs. We further assume that utility from marriage in the second period depends on mutual compatibility between the bride and groom (represented by the function $M(.)$) and on ϵ but not on cultural transmission. This is a reasonable assumption if a marriage produces children in the first period only and cultural transmission to the next generation is therefore completed within this period. An immediate implication of this assumption is that, in the second period, families have the same preference ordering among potential partners as a divorced bride or groom on the marriage market (with the exception of the case $\lambda = 0$, in which case the families are indifferent).

An alternative to divorce is an informal break-up/separation in the second period. This alternative which officially preserves the first-period marriage, gives either spouse the opportunity to form a new informal union (i.e. pursue an extra-marital relationship) while saving on the divorce cost C. We make the critical assumption that when a woman pursues an extra-marital relationship she triggers strong social disapproval. We represent this social disapproval in terms of a loss of social network support which, for women, has value equal to N_b. There is no such social cost for a man who pursues an extra-marital relationship. If one spouse pursues an extra-marital relationship while the other does not, the latter obtains the level of utility corresponding to singlehood, which we normalise to 0, since the marital relationship is effectively over while no other relationship has replaced it.

We denote by $b_r(g)$ the groom's preferred choice of partner for remarriage or extra-marital unions in the second period. Similarly, we denote by $g_r(b)$ the bride's preferred choice of partner in the second period if she leaves her first marriage. Given the assumptions above, if a pair (b, g) marries in period 1, there are five possible outcomes in period 2 as shown in the table below:

Outcome	Groom's Expected Utility	Bride's Expected Utility
marriage (status quo)	$M(\mathbf{X}_b, \mathbf{X}_g)$	$M(\mathbf{X}_b, \mathbf{X}_g)$
divorce	$M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right) - C$	$M\left(\mathbf{X}_b, \mathbf{X}_{g_r(b)}\right) - C$
extra-marital: groom only	$M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right)$	0
extra-marital: bride only	0	$M\left(\mathbf{X}_b, \mathbf{X}_{g_r(b)}\right) - N_b$
extra-marital: both	$M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right)$	$M\left(\mathbf{X}_b, \mathbf{X}_{g_r(b)}\right) - N_b$

Table 1: Expected Utility from Marriage-related Options in Period 2

In the following, we assume that the utilities of the wife and the husband are non-transferable for any of the available options. (In the Theoretical Appendix we analyse the consequences of relaxing this assumption). To formalise the strategies available to each spouse, we assume that they can each choose from three possible actions: status quo, divorce, and extra-marital relationship, and they choose their actions simultaneously. The first outcome obtains if both spouses choose 'status quo'. The second outcome obtains if either spouse chooses 'divorce'. The next three options obtain if one or both spouses choose to pursue an extra-marital relationship. By assumption, women never pursue extra-marital relations because the cost of community sanctions is too severe to make this a viable prospect, that is:

Assumption 6 $M\left(\mathbf{X}_b, \mathbf{X}_{g_r(b)}\right) - N_b < 0.$

We can show that when we introduce a second period in which a divorce or an informal breakup is possible, as above, the qualitative results established in Section 4.2 continue to hold. This is formally established in the Theoretical Appendix, in Section 7.2.

4.3.1 Changing Divorce Costs

Because of Assumption 6, there are three outcomes in the second period: marriage, divorce, and "extra-marital: groom only". Suppose that, initially, C is very large, i.e. divorce is very costly, such that this option is never pursued. Then, depending on the realisation of ϵ, either the marital status quo is maintained in the second period or the groom pursues an extra-marital relationship. More precisely, the groom enters into an extra-marital relationship if and only if

$$M\left(\mathbf{X}_b, \mathbf{X}_g\right) + \epsilon < M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right)$$

$$\Longrightarrow \epsilon < M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right) - M\left(\mathbf{X}_b, \mathbf{X}_g\right)$$

If the decrease in the cost of divorce is large enough, the groom's extra-marital relationship is no longer a viable outcome. In particular, consider the case where

$$M\left(\mathbf{X}_b, \mathbf{X}_{g_r(b)}\right) - C > 0$$

$$\Longrightarrow C < M\left(\mathbf{X}_b, \mathbf{X}_{g_r(b)}\right)$$

Then, for a sufficiently low realisation of ϵ, the bride will always file for divorce in the second period, thus preventing the groom from pursuing an extra-marital relationship within the marriage. A decline in the divorce cost C thus yields a higher utility for the bride. But it produces a lower utility for the groom because in those states of the world where he was previously pursuing an extra-marital relationship within the marriage, he now pays the additional cost of divorce. (Note, however, that from this point onward, further declines in C are beneficial to both the bride and the groom). Following the reasoning in the previous subsection, a decrease in divorce cost makes arranged marriages in the first period *more* likely for brides but *less* likely for grooms. To obtain this result, we require an additional technical assumption about the mutual compatibility between potential brides and grooms, as follows:

Assumption 7 $M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) \geq M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right)$ *where* $g_f(b) = \arg\max_{g \in \{G(b): v(\mathbf{X}_g) = v_f(\mathbf{X}_b)\}} M\left(\mathbf{X}_b, \mathbf{X}_g\right)$ *and* $M\left(\mathbf{X}_{\hat{b}(g)}, \mathbf{X}_g\right) \geq M\left(\mathbf{X}_{b_f(g)}, \mathbf{X}_g\right)$ *where* $b_f(g) = \arg\max_{g \in \{G(b): v(\mathbf{X}_b) = v_f(\mathbf{X}_g)\}} M\left(\mathbf{X}_b, \mathbf{X}_g\right)$.

In words, Assumption 7 says that the level of mutual compatibility between an individual and the preferred groom/bride is at least as high as that for any potential suitor with the same values as her/his family. Using Assumption 7, we can establish the following.

Proposition 3 *Assume that (i) extra-marital relations are low cost – and therefore viable – for men, but not for women; and (ii) the initial cost of divorce is so high that divorce never occurs in equilibrium. Then, compared to marriage with the preferred partner, a decline in the cost of divorce makes arranged marriages more attractive for women but less attractive for men.*

Note that the above result would not necessarily cause a higher (lower) incidence of arranged marriages among women (men) following a decrease in divorce costs. This is because the policy change may also affect the pool of potential partners on the other side of the marriage market. In particular, based on the reasoning behind Proposition 3, a decline in the cost of divorce may reduce the pool of men in Turkey who are willing to enter into a migration marriage. We can formally model this phenomenon as an increase in $\Delta(b)$, the difference in the bride's mutual compatibility with her preferred groom, $\hat{g}(b)$, and with the most compatible groom among those sharing the parents' values, $g_f(b)$ (see Definition 1). Formally, let $\Delta(b;C)$ denote the differences in mutual compatibility when the cost of divorce is equal to C. We define $\Delta(g;C)$ in the same manner. Then we can state and establish the following:

Assumption 8 $\Delta(b;C) \sim F_{ij}(.;C)$ *where* $i = v(\mathbf{X}_b)$ *and* $j = v_f(\mathbf{X}_b)$.

Assumption 9 $\Delta(g;C) \sim \tilde{F}_{ij}(.;C)$ *where* $i = v(\mathbf{X}_g)$ *and* $j = v_f(\mathbf{X}_g)$

Assumption 10 $F_{ij}(.;C_1)$ *first-order stochastically dominates* $F_{ij}(.;C_2)$ *if and only if* $C_1 > C_2$.

Assumption 11 $\tilde{F}_{ij}(.;C_1)$ *first-order stochastically dominates* $\tilde{F}_{ij}(.;C_2)$ *if and only if* $C_1 > C_2$.

Corollary 3 *to Proposition 3: Suppose that there is a decline in the cost of divorce as described in Proposition 3. (i) If this has no effect on the pool of potential brides and grooms available for an arranged marriage, there is an increase in the incidence of arranged marriages among women and a decrease in the incidence of such marriages among men. (ii) Under Assumptions 8-11, the increase among women and the decrease among men are smaller than the changes obtained in part (i).*

Next, we consider how a change in the cost of divorce affects the incidence of divorce. For this analysis, we need to consider separately (a) couples who married after the decline in divorce costs (or before the decline but with full knowledge of the forthcoming policy change); and (b) couples who married before the decline *and* without any expectation of a policy change. As in Proposition 3, assume that, initially, divorce costs are so high that divorce never occurs in equilibrium, while extra-marital relations are low cost – and therefore viable – for men, but not for women. Then, it is straightforward to show that, for couples in category (b), a decline in the cost of divorce leads to an increase in divorces initiated by the wife but not by the husband.[17]

[17] If divorce costs are positive, the husband is always better off pursuing an extra-marital affair than going for divorce.

In the case of couples in category (a), we have established (see Proposition 3 and its corollary) that a decline in divorce costs leads to a lower incidence of arranged marriages among men and higher incidence among women. By their very nature, arranged marriages involve a lower level of mutual compatibility than non-arranged marriages. Therefore, they are more prone to divorce, and, as a consequence of a decline in divorce costs, women in category (a) are more likely to initiate divorce than women in category (b) whereas men in category (a) are less likely to experience divorce than men in category (b). The following proposition summaries these results.

Proposition 4 *Assume that extra-marital relations are low cost – and therefore viable – for men, but not for women. Suppose that, initially, the cost of divorce is so high that divorce never occurs in equilibrium. Then a decline in divorce costs has the following effects:*

(i) among couples who married before the decline, and without any expectation of a policy change, there is an increase (weakly) in divorces initiated by the wife but not by the husband;

(ii) among couples who married after the decline – or before the decline but with full knowledge of the forthcoming policy change – women are more likely to initiate divorce than their counterparts described in (i) whereas men are less likely to experience divorce than their counterparts described in (i).

The corollary to Proposition 3 (and Proposition 4) provides theoretical predictions about the effects of a decline in divorce costs on the incidence of arranged marriages and divorce. A potential alternative to the theory we propose is one in which the families have full bargaining power in the choice of marriage partners. As discussed in Section 4.1.2, this case occurs for sufficiently large values of N_b. If we additionally assume that the families do not care about mutual compatibility between the marriage partners (i.e., $\lambda = 0$) and do not internalise the divorce cost C, then an individual would marry his/her preferred marriage partner if and only if the latter have the same values as their families which, by Assumption 5, occurs with probability ρ. In particular, changes in the cost of divorce would have no effect on the incidence of arranged marriages. Therefore, the theoretical predictions stated in the corollary to Proposition 3 provide an indirect test of our theory of arranged marriage, as compared to the alternative approach in which parents have a total say in marriage decisions.[18]

[18] If families care about mutual compatibility in marriage (i.e. $\lambda > 0$) and/or internalise the cost of divorce, changes in C can potentially affect the incidence of arranged marriages even if the families have full bargaining power in the choice of marriage partners.

5 Impact of a change in divorce law : empirical strategy

In this section, we aim to test a key prediction of the above theory by exploiting a recent change in the Belgian law that amounts to a decrease in the cost of divorce. According to the theory developed in Section 4, its impact should vary between men and women. In particular, we expect second-generation women to become relatively more likely than men to engage in arranged marriages after the reform (Corollary to Proposition 3), and divorce to become relatively more likely for the former than the latter (Proposition 4). Below, we first succinctly describe the content of this law, then describe the empirical models that we will use, provide the empirical definitions of the main variables of interest, and present descriptive plots of the data.

5.1 The 2007 reform of divorce law in Belgium

Under the pre-2007 legal situation, divorce was possible on either fault grounds or consensus of the spouses. In the absence of a consensus or an evident fault (adultery, violence, cruelty and severe insult), a divorce could be obtained only after a prolonged period of two years of de facto separation, and the initiating party was considered faulty of desertion and therefore liable to an alimony payment in favor of the "abandoned" spouse.[19] The new law, which is extensively described in Bracke et al. (2013), introduced the possibility of a "no-fault" divorce, initiated unilaterally. Not only is the procedure to obtain divorce considerably shortened but under a no-fault divorce, the idea of a punishment imposed on the parting spouse in the form of an alimony has also disappeared. Regarding the second aspect, alimony is due only to a spouse who is deemed "needy". As for the first aspect, unilateral divorce can be immediately obtained if the spouses have lived apart from each other for one year, or if the plaintiff appears to court a second time to ask for divorce. The new law has also accelerated the procedure for consensual divorces. Clearly the new law has considerably reduced the cost of divorce. In particular it has opened a new possibility for many women who are dissatisfied with their marital life and were previously denied the possibility of exiting an unhappy union by their husband.

Proposition 4 in Section 3.2 establishes that the effect of a decline in divorce costs on divorce-related behaviour depends on whether brides and grooms could anticipate such a policy change prior to marriage. Similarly, it follows from Proposition 3.2 and its corollary that such anticipation would affect the incidence of arranged marriages. Therefore, an important question to ask before comparing

[19]Note that the category of "severe insult" was quite encompassing, including behaviors such as refusal of sex, expressing homosexuality inclinations, neglecting the household or contributions to the marriage, alcohol or drug abuse, love declarations to a third party, religious fanaticism, and desertion or abandonment with malicious content.

the behavior of cohorts that were exposed or not to the law is that of anticipation: could couples married before 2007 anticipate a forthcoming fall in the cost of divorce? We believe that the answer is no. There was, indeed, very little discussion about a possible change in the divorce law before the beginning of 2007. Moreover, a lot of uncertainty about the fate of the proposed change in the divorce law persisted until it was finally adopted during the same year. We reviewed the articles mentioning the legal change in one of the most important Belgian daily newspaper, “Le Soir”. It mentioned the idea of abandoning the notion of “fault” in divorce law for the first time in November 2005. Also, several short articles discussed the “pre-project” between November and December 2005, stressing the strong opposition of several groups. Thereafter, during the full subsequent year the issue vanished from the newspaper. Then, several articles were published in early 2007 when debates started in parliament. Given the thin media coverage before 2007, and because the few articles devoted to the pre-project focused on its controversial character, we believe that couples married before the end of 2006 could not realistically expect that the divorce law would soon be radically modified.

Finally, there is the risk of confounding the effects of the change in the divorce law with other legal changes that would have occurred during the same period. Of particular interest are changes in the conditions set by the law for spouse migration. During the period we are interested in (most marriages in our samples took place between 1995 and 2017), several migration laws were modified and created more stringent conditions for a Turkish resident to migrate to Belgium upon marriage with a Belgian resident (whether citizen or not). According to experts of migration laws (Mascia and Odasso, 2015), the most important changes occurred in 2011, when “spouse reunion” was made conditional on the fulfillment of minimum income conditions. Still other changes introduced around the same time were of minor importance: thus, in 2006 new rules laid down conditions for spouse reunion that concern accommodation, the duration of the relationship, and the age of the two spouses. Overall, while all these changes may have discouraged spousal import in general, it is not clear that they should have affected men and women differently. If anything, since young men are more likely than young women to participate in the labour market, they should be more able to meet the means-related condition set by the law, and they should therefore be less discouraged than women to engage in spouse import. In short, we are not aware of any legal change other than the 2007 law that can have plausibly and *differentially* affected men’s and women’s incentives to engage in an arranged marriage or a spouse import.

5.2 Empirical models

We seek to investigate the impact of the 2007 law on marriage and divorce for second- and third-generation migrants. We first describe the empirical models and strategies that we use toward this purpose. We also need to define two key variables, namely exposure to the reform and arranged marriage.

5.2.1 Impact of the reform on marital choices

A key issue in evaluating how the reform changed the propensity to engage in arranged marriage is that of censoring: we observe marital outcomes for a sample of individuals of different ages and some individuals may not yet be married at the time we observe them. We use two different approaches to overcome that problem. First, we estimate the impact of the reform on marital outcomes *at specific ages* using linear models. Second, we use a duration model to estimate the average effect of the reform on marital choices.

To define individual marriage outcomes at specific ages, we rely on information regarding the individuals' first marriage: whether s/he was ever married, and whether s/he made an arranged marriage or not. Our first strategy is to estimate the following model for each relevant age a :

$$\begin{aligned} Y_i^a \quad &= \quad \alpha + \beta\, exposure_i + \gamma\, exposure_i * woman_i + \delta\, birthdate_i + \eta\, birthdate_i * woman_i \qquad (5) \\ &+\theta\, exposure_i * birthdate_i * woman_i + \vartheta\, woman_i + \iota' X_i + \varepsilon_i \qquad (6) \end{aligned}$$

where Y_i^a is successively defined as being single at age a, and being in an arranged marriage at age a. The variable $exposure_i$ takes value 1 if individual i was exposed to the reform (we discuss the construction of this variable below). The presence of the interaction term $exposure_i * woman_i$ aims at testing the gender-specific effect of a decrease in the cost of divorce as predicted by the theory. To control for gender-specific time trends in marriage outcomes, and allow these trends to be different before and after the reform, we include the month of birth ($birthdate_i$), and its interaction with gender and with exposure, $exposure_i * woman_i$. The vector of additional controls X includes district fixed effects. When estimating the model on the administrative data, error terms are clustered at year of birth level because exposure is defined at the cohort level. In the first-hand data, we cluster the error term at the respondent level because s/he provided the information for the whole extended family, possibly leading to some correlations at the extended family level.

There is a tradeoff in choosing relatively late or early ages at which to detect marital outcome. If we consider outcomes at earlier ages, fewer individuals would be already married. As we increase the age of interest, sample size decreases because we lose individuals who have not reached that age. Furthermore, we need to make sure that enough individuals have been affected by the 2007 reform and when we increase the age considered, fewer individuals are exposed. The administrative sample is composed of individuals aged 27 or more and we focus on outcomes at 27, 28, 29 and 30. Because descendants of Turkish migrants marry early, most (first) marriages have already taken place at these ages. At age 28, 89% of ever married individuals are actually married (11% marry after 28), while at 30, this proportion rises to 97%. In our first-hand data sample, we cannot focus on the same age range because we would have too few individuals who reached that age at the time of the survey, and there would be too few cohorts exposed to the reform.[20] We therefore focus on outcomes at age 25 and 26 (recalling that the survey took place in 2015, these cohorts were born in the same years as those aged 28 and 29 in the administrative sample of 2018). At these ages, more than 70% of first marriages have already taken place: the administrative data reveals that 71% of ever married individuals were married when they reached 25.

The second empirical approach relies on a duration model which estimates the probability of "importing a spouse", that explicitly takes into account the timing of events and the censoring nature of the data (the possibility of non-marriage). In addition, we incorporate the "competing event" of a non-arranged marriage by estimating a model with competing risk.[21] Specifically, we use the approach of Fine and Gray (1999) that enables to estimate the effect of covariates on the cumulative incidence function (C_t^{AM}) defined as the proportion of individuals who made an arranged marriage (AM) at time t, allowing for the possibility that individuals made a non-arranged marriage:

$$C_t^{AM} = \int_0^t h_k(u|X)S(u)du$$

where h_k is the hazard rate for arranged marriage (the "cause specific hazard"), X is a vector of covariates (we use the same as above) and S is the overall survival function. Fine and Gray's approach uses a subdistribution function that specifies the relationship between the hazard and the survival function in the presence of a competing event. It allows to recover the effects of the covariate on the overall incidence function. The model is semiparametric in that the baseline subhazard is left

[20] If we would not include cohorts not yet 28 at the time of the survey, the youngest individuals included in the analysis would have been 20 already at the time of the reform.

[21] Treating non-arranged marriages as censored observations would not be satisfactory because this would assume that arranged and non-arranged marriage decisions are independent.

unspecified while the effects of the covariates are assumed to be proportional (as in a standard Cox estimation).[22]

Finally, we investigate whether the impact of the divorce law is more pronounced in municipalities where the Turkish community represents a relatively modest proportion of the total population. Specifically, we focus on municipalities where the share of G1, G2 and G3 individuals in the total population is below the median (for the whole sample). In contrast to migrants living in municipalities characterized by a relatively large share of them in the population, relatively isolated migrants are plausibly more exposed to Belgian culture and more integrated in the general population. On the other hand, and according to the logic suggested by Bisin and Verdier, parental concerns about identity transmission may be particularly strong when children have fewer ordinary interactions with other Turkish migrants. Parents may then bring more pressure to induce their children to marry a migrant. It is therefore unclear a priori whether individuals living in municipalities where migrants are a minority are more or less affected by the reform than those residing in locatings where migrants form a large majority of the population.

5.2.2 Impact of the reform on divorce

To estimate the gender-differentiated impact of the reform on divorce, we rely exclusively on administrative data. This is because in our first-hand data, the relevant sample size would be too small to allow a meaningful investigation of this question.[23] In seeking to estimate the impact of the reform on the propensity for a first marriage to end in divorce, we again face a censoring issue: we observe marriages of different durations and, for some of them, divorce may still be observed in the future. We estimate both linear and duration models to overcome this issue.

The first strategy consists in estimating the impact of the reform on divorce for specific marriage durations, d. Attention is limited to the sample of individuals who are or have been married. The outcome variable, D_i^d, takes value 1 if individual i divorced within d years of marriage. The model estimated is similar to the one used for marriage outcomes:

$$D_i^d \quad = \quad \alpha + \beta\, exposure_i + \gamma\, exposure_i * woman_i + \delta\, birthdate_i + \eta\, birthdate_i * woman_i \qquad (7)$$

[22] We implement the estimation using the software Stata and the command "stcrreg".

[23] Two elements contribute to limit our ability to investigate the impact of the reform on divorce in the first-hand data. First, we have consistent information on divorce for respondents and their siblings but not for children or parents of the respondents. Second, the survey took place seven years after the reform, so that exposed cohorts have been married for a few years only when we observed them.

$$+\theta\, exposure_i * birthdate_i * woman_i + \vartheta\, woman_i + \iota' X_i + \varepsilon_i \quad (8)$$

We estimate the impact on divorce for three periods following the year of marriage: $d = 3$, $d = 4$ and $d = 5$. Since about 40% of all divorces occurred during the first five years of marriage for non-exposed cohorts, we are far from capturing the real impact of the law on divorce. What we actually investigate is its impact on early divorce. While increasing marriage duration would allow us to observer a larger proportion of marriage breakups, our sample size would be reduced, especially for the post-reform sample. This is because exposed cohorts married much more recently. With $d = 5$, in the exposed cohorts, we observe about 1000 marriages that occurred at least five years before data extraction (and roughly 80 divorces in this group).

Our second strategy relies on a Cox duration model. The model is designed to account for the censored nature of the data and estimate the average effect of covariates on the hazard to divorce at any point in time. A key assumption is that censoring should be "non-informative", in the sense that censoring should not be correlated with the outcome of interest. This is a problematic assumption if we naively estimate the effect of exposure to the reform on the overall propensity to divorce: because, mechanically, exposed cohorts married more recently, they are more likely to be censored (they had not much time to divorce). To the extent that the reform has an effect on divorce, censoring would then be correlated with the likelihood of divorce and be "informative". To overcome this difficulty, we focus on early divorces (occurring within the first five years of marriage) and censor all observations that reached 5 years of marriage without a divorce. As a result, the likelihood of censoring is only a few percentage points higher in exposed than in non-exposed cohorts and we may investigate the impact of the reform on the hazard of early divorce.[24]

5.3 Empirical definitions of key variables and descriptive plots

5.3.1 Empirical definition of "exposure" to the reform

Administrative data We define exposure at the cohort rather than the individual level. The reason is that individuals not yet married when the reform was enacted may have characteristics correlated

[24]This problem may also be present in the duration models for arranged marriages, in the sense that exposed cohorts are more likely not to be married yet (and if the reform affects the propensity to engage in an arranged marriage, censoring may be correlated with the outcome of interest). However, because marriage takes place early in the population of interest, most marriages have already taken place when individuals reach 27 years of age, so that informative-censoring may not be an important issue. To verify that our results on arranged marriages are not affected by a potential "informative-censoring bias", we also estimate the models after censoring all individuals at 30 years of age (insuring thereby a balance in censoring between exposed and non-exposed cohorts). The results obtained are very similar to the main results.

with marriage outcomes independently of the reform. For example, holding the year of birth constant, those who married after the reform are older on average, and age is associated with a lower probability of traditional marriage. Other non-observable characteristics may be correlated with both the type of marriage and the propensity to be unmarried at the time of the reform. Defining exposure at the cohort level ensures that the pool of individuals considered to be exposed to the reform is not selected.

To draw a line between cohorts considered exposed and not exposed to the reform, we first examine the proportion of each cohort not (yet) married at the time of the reform, and hence still at risk of marriage when the new law was passed. Figure 3 plots this proportion by year of birth on the basis of the administrative data. The proportion is clearly increasing in the year of birth and it exhibits important jumps for the cohorts which were in their early twenties around the time of the reform. For example, the proportion of women not yet married at the time of the reform increases by about 26 percentage points between the cohort born in 1985 and the cohort born in 1987 (from 49 to 66 percent). For men, exposure increases by about 24 percentage points between 1984 and 1986 (and by almost the same between 1983 and 1985).[25] Our preferred definition of exposure makes use of these jumps and drops the birth year in-between (1985 for women and 1984 for men) to ensure a sharp increase in the risk of marriage between the cohorts exposed and not exposed. This implies that we define as "exposed" the men born (in or) after 1986 and women born (in or) after 1987, and as "not exposed" the men born (in or) before 1984 and the women born (in or) before 1985. The practice of dropping observations around the threshold to force a sharper increase in exposure to a treatment is termed "donut estimation" in the discontinuity-in time-literature (Barreca et al., 2011, Hausman and Rapson, 2018).

Given that we are in the presence of a "fuzzy" discontinuity design, we verify that our results are not too sensitive to small changes in the date chosen for the cut-off. To that end, we use several alternative definitions of exposure. First, we run donut estimations where we drop the year 1984 (instead of 1985) for men, on the ground that the years 1983-85 and 1984-86 exhibit similar jumps in exposure. We also run estimations where we do not drop a cohort and several candidate thresholds

[25] For men, selecting an earlier birth date by two years, namely the cohorts born between 1980 and 1982 (men between 25 and 27 years at the time of the refom), would result in a slightly larger jump in exposure. We do not retain this procedure for several reasons. First, part of the increase in the share of men not yet married in 2007 is driven by a positive trend in singlehood (already visible before the reform). In fact, if we focus on married men, the increase in exposure between 1980 and 1982 is three points lower than between 1984 and 1986. Second, only a short majority were not married at the time of the reform in 1982 (56%). Finally, the oldest exposed cohort for men would be five years older than the oldest exposed cohort for women, which seems artificially large given that the difference in the age at first marriage is only two years. Note that if we focus on married women instead of all women, it is again the cohorts born between 1985 and 1987 that exhibit the steepest increase in exposure: the proportion of those not married at the time of the reform increases from 43 to 74%.

are tried (between 1983 and 1986 for men and between 1985 and 1987 for women). Finally, we run estimations with "large donuts", where we drop the *same two* cohorts for men and women (1985 and 1986 or 1984 and 1985).[26]

First-hand data In the first-hand sample, cohort exposure is not monotonically increasing in birth year as in the administrative data, due to a much smaller sample size. Nevertheless, as depicted in Figure 4, there are sharp and important increases in exposure for the birth years 1986 for women and 1983 for men. Therefore, we use these cut-off years to define exposure.

5.3.2 Empirical definitions of "arranged marriages"

Administrative data As discussed in Section 3.2, parents' involvement in the choice of a spouse may take different forms and we have only limited information on the circumstances of spousal choice. In the administrative sample, we only observe some characteristics of the spouse. Hence we need to rely on an indirect indicator of arranged marriage, which is whether the spouse migrated to Belgium *after* getting married. In other words, we define as "imported spouses" those Turkish individuals who were registered for the first time in the National Registry of Belgium after the date of their marriage. As detailed in Section 3.2, parents play a more active role in spousal choice when the marriage has involved a migration. Alternatively, we construct a variable indicating whether the spouse migrated to Belgium after age 16. This variable identifies spouses born and (most likely) raised in Turkey, thus likely to be considered as authentically Turkish by parents residing in Belgium.

First-hand data In our first-hand sample, we possess more detailed information regarding the circumstances of marriage, which enables us to rely on two indicators of parents' involvement in the marriage of their children. First, and similarly to the variable used in the administrative data, we build a measure of spouse import. Specifically, respondents were asked for each marriage whether the marriage involved the migration of one spouse. When a G2 individual married a person who migrated for the purpose of marriage, we consider the union to be of the "spouse import" type. Second, because we asked whether the parents (or the family) were the first to suggest the spouse as an appropriate marriage partner, we have available a more direct measure of the parents' role in spouse selection. If the answer is positive, we qualify the marriage as "arranged".

[26]Note that we cannot use a continuous indicator of exposure, such as the continuous proportion of a cohort not married at the time of the reform, because this variable is highly correlated with the date of birth. As a result, we would not be able to simultaneously control for the secular decrease in arranged marriages.

5.3.3 Descriptive plots: trends in arranged marriage and divorce, pre- and post-reform, by gender

Figures 5 to 10 report the trends in arranged marriage (and divorce) by gender. In addition to the average prevalence by year of birth, the figures report the estimates of local polynomial regressions (of degree one) with their 90% confidence intervals. There is a clear decreasing trend in the prevalence of spouse imports among second- and third-generation migrants, for both men and women (Figures 5 and 6). For the men's subsample, Figure 6 suggests that there may be a discrete drop in the prevalence of spouse imports at the time of the reform. This "change of intercept" is not perceptible in the women's subsample however (Figure 5). Similar figures for the prevalence of arranged marriages in the first-hand data (Figures 7 and 8) also indicate that the comparison of pre- and post-reform trends yields different conclusion for men and women. While the prevalence of arranged marriages seems to slightly increase for exposed women, for men it continues to decrease at the same pace as before the reform.

There are also sharp genderwise contrasts in the trends for pre- and post-reform divorce (Figures 9 and 10). Men's divorce rates seem to stop increasing after the reform while women's divorce rates seem to perceptibly increase for exposed cohorts.

6 Impact of a change in divorce law: Empirical Results

6.1 No-fault divorce and arranged marriages

Administrative data Tables 8 to 15 present the results of linear estimations of marriage outcomes at specific ages (as described by Equation 5). We start by presenting the results obtained when one cohort is dropped from the estimation, ensuring that the share of the cohort effectively at risk of marriage when the reform was enacted differs markedly between the cohorts exposed and not exposed. In all estimations the date of birth variable (dob) is rescaled to take value zero at the threshold date used to define exposure. As a result, the coefficient on $exposed * woman$ directly measures the discrete impact of the reform for the first cohort exposed to it (since $dob * exposed * woman$ is equal to zero at the threshold). The first outcome considered is the propensity of being married at different ages. The results displayed in Table 8 suggest that this post-reform propensity decreases for men, albeit not significantly (except at 30), while for women no perceptible change is observed (the coefficient on $exposed * woman$ is positive).

We now turn to the impact of the reform on the propensity to make an arranged marriage, defined here as marrying a spouse who becomes a resident in Belgium after the date of marriage (presumably an imported spouse). While the first four columns of Table 9 restrict attention to individuals married at the age considered, columns 5 to 8 report the results for the full sample (including unmarried individuals). The coefficients on "exposure" indicate that the men's propensity to import a spouse after the reform substantially decreased: among men married at 30, spouse import is 12 percentage point less likely after the reform (column 4). When we include single men in the analysis, the drop is of 8 percentage point (column 8). By contrast the coefficients on the interaction term $exposed * women$ are positive, significant and at least as large as those on *exposed*. Thus, in line with our theoretical predictions (Corollary to Proposition 3), the impact of the new divorce law appears to differ between men and women with the latter responding by engaging more in spouse import relative to men.[27] Figure 11 plots the predicted propensity to be married to an imported spouse at 29 (including singles) for individuals born around the exposure threshold (using the coefficients reported in column (7) of Table 9). Taking into account the impact of the reform on the gender-specific time trends, the differential impact of the reform on men and women fades through time. Yet, it remains perceptible for cohorts born four years after the first-affected cohorts.

Table 10 reproduces the same analysis for the propensity to marry a spouse who left Turkey after turning 16. Spouses who migrated after marriage are included in this category, as well as individuals who grew up in Turkey and are possibly regarded by parents as "more authentically Turkish" than G2 individuals. The results are similar to those reported in Table 9, although the interaction $exposed * women$ is not significant for outcomes at ages 27 and 28. Overall, the habit of marrying women who grew up in Turkey tended to decrease after the reform for G2 (and G3) men, while the habit of marrying a man who grew up in Turkey seems unaffected by the reform for G2 (and G3) women.

If we change the definition of exposure, by modifying the cohorts dropped in the donut estimations (results reported in Table 11) or by choosing a threshold year of birth without dropping a cohort (results reported in Table 12), the main conclusion holds: the introduction of the more liberal divorce law has a different impact on men and women: unlike women, men are more reluctant to engage in marriages with an imported spouse. Also, the results are not sensitive to the way we treat missing spouse information. Recall that for 13% of spouses, we have not obtained administrative data. Up to now, we have simply ignored these observations. We may worry that these observations are not

[27] Note that since the sum of the two coefficients (on *exposed* and on $exposed * women$) is not statistically different from zero, we cannot conclude that the reform increases the incidence of arranged marriage for women in absolute terms.

missing at random and may exhibit a different propensity to engage in an imported spouse marriage, with the result that our conclusions do not reflect the impact of the reform of the overall population of interest.[28] Reassuringly, whether we assume that all these spouses are imported (Table 13) or none of them are (Table 14), the results do not significantly change: results reported in Table 13 and 14 are very similar to those reported in Table 9.

Table 15 reproduces the analysis featured in Table 9, but restricts attention to municipalities where the Turkish community represents a relatively modest proportion of the total population.[29] Table 15 suggests that the effects of the reform are slightly stronger in these municipalities: estimated coefficients are larger than in the overall sample, especially for women. Thus, exposed women are 13 percentage points more likely than exposed men to be married to an imported spouse at 27 (column 5), while the corresponding effect amounts to 7 percentage points for the overall sample (Table 9, column 5).

Turning now to the second approach, Table 16 displays the estimated coefficients of the sub-hazard of marrying an imported spouse. While the estimated coefficients are not statistically significant for all the chosen definitions of exposure, the results obtained with linear estimations are broadly confirmed: the reform decreases men's propensity to marry an imported spouse whereas women's propensity increases compared to men. Table 17 reports the results when the sample is reduced to municipalities where the share of the population of Turkish origin is relatively low. The impact of the reform is again much stronger in these municipalities, regardless of the definition of exposure: following the reform, women's propensity to engage in an imported spouse marriage significantly increases relative to men's. Because individual coefficients do not directly reveal how the reform affects the *overall propensity* to engage in spouse import but only the direction of the effects of each covariate on the overall incidence (for more details on the subtle interpretation of estimated coefficients in competing risk models, see Austin and Fine, 2017), we also report cumulative incidence curves in Figures 12 and 13 (corresponding to the models used in Tables 16, column 1, and 17, column 1). The cumulative incidence indicates the proportion of individuals who make an imported spouse marriage, accounting for the fact that some marry a non-migrant spouse and thus leave the pool of individuals "at risk of marriage". We plot the incidence curves separately for men and women and for individuals exposed and not exposed to the reform. In the whole sample (Figure 12), while women's overall propensity to import a spouse

[28] According to the administrative service in charge of data extraction, information about the spouse is more likely to be missing when the couple has not been registered as "household head and spouse of head" at their address or when they have not lived toghether (or for less than one year). The first situation is more likely in the case of a spouse import, where the couple is more likely to reside with the parents of the spouse residing in Belgium (Timmerman et al., 2009).

[29] Note that we only know about the municipality in which the individual was registered in 2018. Therefore, we are implicitly assuming that they grew up in the same commune.

seems unaffected by the reform, men's propensity clearly decreases. When we restrict attention to municipalities with a relatively low proportion of migrants, women's propensity to marry an imported spouse increases while that of men decreases. Thus, the gender contrast again appears stronger than in the overall sample.

First-hand data If the first-hand data has the advantage of providing a more exact definition of arranged marriage, the sample size is smaller than in the administrative data and it is limited to two municipalities (with a high concentration of migrants). Using the same empirical strategy as for the administrative data, we estimate the differential impact of the reform on women's and men's propensity to make an arranged marriage. If we focus on spouse import, exposure to the reform does not appear to significantly affect men or women's propensity to import a spouse (Table 18), although the coefficients on $exposed*women$ are large (15 percentage point in column 6 for example). If, instead, we use a more precise definition of arranged marriage, one based on the respondent's assessment of the involvement of the family in the spousal choice, exposure has a strong and significant effect on women compared to men (Table 19). More precisely, exposed women are 28 percentage points more likely to make an arranged marriage than exposed men (column 4). While the reform appears to discourage men from making an arranged marriage (albeit not significantly), it has the opposite effect on women.

If we estimate a duration model with competing risk (Table 20), the direction of the effects of exposure and its interaction with gender are similar to those obtained with the linear model, but the estimated coefficients are not significantly different from zero. The cumulative incidence of arranged marriages depicted in Figure 14 suggests that the reform has increased the overall incidence of arranged marriages for women, but has reduced it for men.

6.2 No-fault divorce and divorces

Table 21 reports the results of OLS estimations after 3, 4 and 5 years following marriage. In the first column, for example, the dependent variable takes value 1 if the individual experienced divorce during the first three years after marriage, restricting attention to marriages at least 3 years old. What do we see? For men, divorce within 3 to 5 years after marriage seems to go down after the reform and the decrease is significantly different from zero after 4 and 5 years of marriage (3 and 5 percentage points, respectively). Again, the gender contrast is significant: the coefficient on $exposed * woman$ is positive, significant and slightly larger than the coefficient on *exposed*, suggesting that women's overall propensity to divorce is unaffected by the reform (or has slightly increased). Results reported in Table 22 indicate that the same conclusion holds when most measures of exposure are used: the effect appears actually strong for several alternative measures. The estimation of duration models (Table 23) confirms that men exposed to the reform have a lower average hazard of divorce than non-exposed men. Compared to exposed men, exposed women have a higher hazard of divorce. Unfortunately, we cannot directly compare the magnitudes of a coefficient estimated by the duration model and a coefficient estimated by the OLS. The reason is that the effect of a correlate on the instantaneous hazard does not directly inform us on its effect on the overall probability to experience the event. In this respect, the cumulative hazard ratio plotted in Figure 15 is more informative. It shows an effect of the same order of magnitude as the one reported in the linear regression (see the results reported in the first column of Table 23). Exposure appears to decrease men's propensity to divorce after 5 years of marriage (month 60) by about 4 percentage points. Interestingly, women's propensity to divorce increases in absolute terms, at about the same rate.[30]

To sum up, in line with the predictions of our theoretical model (Proposition 4(ii)), the reform has differentiated impacts on female and male descendants of Turkish migrants. While exposed men seem to engage in more stable unions than non-exposed men, this is not the case for women whose marriages are more likely to end in divorce after the reform.

7 Conclusion

What have we learned about the evolution of Turkish culture in the immigrant community of Brussels, particularly with respect to marriage rules and practices? First, there is a time trend pointing to a gradual decline of arranged marriages, and it is accompanied by rising rates of divorces, most of which are initiated by women. In the conventional approach, there is a causal relationship between arranged marriage and divorce, and causality runs from the former to the latter. Because the probability of a marriage breakdown is higher when the partner has not been freely chosen and the match is rather poor as a result, a lower incidence of arranged marriages is expected to lead to fewer divorces. Since we observe a rise and not a fall in marriage disruptions, there are obviously wider forces at work that are also felt at the level of non-arranged marriages. These forces operate through the exposure of residents of Turkish origin to the mores of the host population and to its institutional environment,

[30]We do not present estimates on the sub-sample of low-concentration muniscipalities because of marriages old enough to lead to divorce is number of divorces for cohorts exposed to the reform is rou

which includes a generous welfare system providing for the needs of single women. This being reckoned, our central contribution in this paper is to argued that the causality behind the relationship between arranged marriage and divorce may be the opposite of what is conventionally assumed. This becomes evident when we consider that potential partners, women in particular, may act strategically in the following sense: when divorce becomes easier, thereby providing a less costly exit out of an unsuccessful union, forward-looking women have a stronger incentive to accept an arranged marriage.

Our theory of arranged marriage is novel, and two of its underlying assumptions are worth singling out: (i) the choice of spouse is an outcome of bargaining between the bride/groom to-be and their families; (ii) men, but not women, are able to exit a union (and find a new partner) without formally ending the marriage, so that the cost of a bad marriage match is higher for women than for men.

Suggested by anthropological observations of migrant women's behaviour, and framed as a micro-founded theoretical prediction, the hypothesis of strategic participation in arranged marriage and the resulting gender-differentiated effect of a lower divorce cost has been put to systematic testing, and borne out, by exploiting a change in the divorce law enacted in Belgium in 2007. Our empirical exercise therefore indicates that women's interest in arranged marriage is affected by two contradictory forces: a general trend that works against this practice and legal changes that have the effect of lowering the cost of divorce and encourage the same practice, at least on the women's side. Because legal changes are one-shot shocks, however, they can only retard the declining trend of arranged marriages as determined by the "modernizing" influences emanating from the host society.

Second, there are several reasons why women's welfare is probably increasing in our study area: (i) women (and men) have a greater say in marriage decisions even when it is arranged (an arranged marriage is not authoritatively imposed by the parents against their child's will); (ii) a woman-initiated divorce is not (no more) severely punished by the parents and the community, and (iii) easier divorces presumably help women escape the predicament of extra-marital relationships, which is deeply gender-asymmetric. Moreover, after divorcing, women often remarry and freely choose their new partner. The important point is that because this emancipatory drive is based on an accommodating strategy on the part of women, it does not confront patriarchal values head-on. As a result, the painful disjunction experienced by migrants who are torn away between two cultural worlds is being minimized. From the policy-maker's point of view, an approach that avoids antagonizing the family-related norms of a migrant culture (say, through legal prohibitions), and instead uses incentives to influence behavior indirectly (say, through social welfare interventions and divorce legislation), may be the most effective way to prompt these norms to evolve and to concomitantly reduce gender-based inequalities.

The above approach, it must be stressed, is reformist rather than revolutionary since its gains will necessarily accrue (to women, in particular) in a gradual and incomplete manner. This is most evident from the fact that, when a decline in divorce cost leads to the persistence of arranged first marriages, women run the risk of enduring considerable pains before being able to have a better life in the course of a second marriage. The problem is that the first-best solution is not available, at least immediately. Under these conditions, women tend to consider that an arranged marriage with a prospect of divorce is less costly for them than the alternative option of a non-arranged marriage that would antagonize their parents. The same can be said of parents who accept divorces in order to preserve the practice of arranged marriage and the associated possibility of transmitting traditional values to their grandchildren. In conclusion, because it requires a change in one the deepest layers of what constitutes a patriarchal culture, women's emancipation or empowerment can only be a stepwise process in which women themselves act strategically with a full awareness of the constraints they are facing. Therefore, any attempt to cut this emancipatory process short is susceptible of causing backlash effects or may prove ineffective.

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Figures and Tables

Table 1: Descriptive statistics - administrative data

	(1)				
	mean	sd	min	max	count
Year of birth	1983.65	4.84	1975.00	1991.00	9291
=1 if second-generation migrant	0.97	0.18	0.00	1.00	9291
=1 if ever married	0.76	0.43	0.00	1.00	9291
=1 if married when turned 27	0.64	0.48	0.00	1.00	9291
=1 if married when turned 28	0.67	0.47	0.00	1.00	9291
=1 if married when turned 29	0.70	0.46	0.00	1.00	9291
=1 if married when turned 30	0.72	0.45	0.00	1.00	9291
Age at first marriage	23.20	3.88	14.25	41.50	7049
=1 if spouse registered in Belgium after marriage	0.44	0.50	0.00	1.00	6146
=1 if spouse left Turkey after turning 16	0.48	0.50	0.00	1.00	6146
=1 if ever divorced	0.20	0.40	0.00	1.00	7049
=1 if divorced within first 3 years of marriage	0.05	0.22	0.00	1.00	7049
=1 if divorced within first 4 years of marriage	0.07	0.26	0.00	1.00	7049
=1 if divorced within first 5 years of marriage	0.09	0.29	0.00	1.00	7049
Proportion of population of Turkish origin in municipality	0.08	0.06	0.00	0.21	9291

Table 2: Descriptive statistics by gender - administrative data

	(1) women		(2) men		(3) difference	
	mean	sd	mean	sd	b	t
Year of birth	1983.64	4.84	1983.65	4.84	0.01	(0.11)
=1 if second-generation migrant	0.97	0.18	0.96	0.18	-0.00	(-0.32)
=1 if ever married	0.82	0.38	0.70	0.46	-0.13***	(-14.73)
=1 if married when turned 27	0.74	0.44	0.54	0.50	-0.20***	(-20.47)
=1 if married when turned 28	0.76	0.42	0.59	0.49	-0.18***	(-18.40)
=1 if married when turned 29	0.78	0.41	0.62	0.48	-0.16***	(-17.53)
=1 if married when turned 30	0.80	0.40	0.65	0.48	-0.15***	(-15.96)
Age at first marriage	22.26	3.72	24.24	3.80	1.98***	(22.07)
=1 if spouse registered in Belgium after marriage	0.47	0.50	0.40	0.49	-0.07***	(-5.81)
=1 if spouse left Turkey after turning 16	0.53	0.50	0.42	0.49	-0.11***	(-8.49)
=1 if ever divorced	0.22	0.41	0.18	0.39	-0.03***	(-3.33)
=1 if divorced within first 3 years of marriage	0.05	0.22	0.05	0.22	-0.00	(-0.10)
=1 if divorced within first 4 years of marriage	0.08	0.27	0.07	0.25	-0.01	(-1.30)
=1 if divorced within first 5 years of marriage	0.10	0.30	0.09	0.29	-0.01	(-1.02)
Proportion of population of Turkish origin in municipality	0.08	0.06	0.08	0.06	0.00	(1.39)

Table 3: Descriptive statistics: first-hand data

	(1)		
	mean	sd	count
Year of birth	1980.92	5.85	865
Relative birth rank	0.47	0.37	865
Family size	4.49	1.68	865
=1 if second-generation migrant	0.92	0.27	865
=1 if ever married	0.81	0.39	865
=1 if married when turned 25	0.68	0.47	793
=1 if married when turned 26	0.72	0.45	793
Age at first marriage	22.09	3.69	627
=1 if parents suggested the spouse	0.47	0.50	626
=1 if marriage implied a migration (spouse import)	0.41	0.49	626
=1 if spouses met less than 5 times before marriage	0.20	0.40	120
=1 if parents asked for their approval over spouse choice	0.94	0.24	120
=1 if divorced from first spouse	0.17	0.37	532

The sample includes all extended family members of second or third generation (respondents, their siblings, parents or children), born between 1970 and 1990.
Relative birth rank is the ratio (birth order-1)/(family size-1), where family size is the total number of siblings.
The variables on encounters before marriage and parents' approval are only available for respondents.
The information on divorce is only available for respondents and their siblings

Table 4: Descriptive statistics by gender: first-hand data

	(1)		(2)		(3)	
	women		men		difference	
	mean	sd	mean	sd	b	t
Year of birth	1980.90	5.78	1980.94	5.94	3.07	(0.56)
Relative birth rank	0.44	0.37	0.50	0.38	0.07**	(2.94)
Family size	4.67	1.75	4.29	1.59	-0.30**	(-3.04)
=1 if second-generation migrant	0.91	0.28	0.93	0.25	-0.01	(-0.47)
=1 if ever married	0.87	0.34	0.74	0.44	-0.15***	(-5.47)
=1 if married when turned 25	0.75	0.43	0.61	0.49	-0.16***	(-5.50)
=1 if married when turned 26	0.79	0.41	0.65	0.48	-0.15***	(-5.24)
Age at first marriage	21.63	3.72	22.67	3.59	1.29***	(4.82)
=1 if parents suggested the spouse	0.49	0.50	0.45	0.50	-0.01	(-0.36)
=1 if marriage implied a migration (spouse import)	0.41	0.49	0.41	0.49	0.01	(0.24)
=1 if spouses met less than 5 times before marriage	0.18	0.39	0.24	0.44	0.06	(0.77)
=1 if parents asked for their approval over spouse choice	0.92	0.27	1.00	0.00	0.03	(0.67)
=1 if divorced from first spouse	0.19	0.39	0.14	0.35	-0.03	(-1.04)

The sample includes all extended family members of second or third generation (respondents, their siblings, parents or children), born between 1970 and 1990.
Relative birth rank is the ratio (birth order-1)/(family size-1), where family size is the total number of siblings.
The last 2 variables are only available for respondents.

Table 5: Links to Turkey by generation, respondent sample: first-hand data

	(1) G1		(2) G2		(3) G3	
	mean	sd	mean	sd	mean	sd
=1 if some family in same municipality	0.60	0.49	0.74	0.44	0.68	0.47
=1 if speaks Turkish at home	0.99	0.09	0.94	0.24	0.97	0.17
=1 if speaks only Turkish at home	0.68	0.47	0.22	0.41	0.16	0.37
share of TV time in Turkish	0.71	0.23	0.60	0.26	0.55	0.33
=1 if goes to Turkey at least once a year	0.73	0.44	0.70	0.46	0.70	0.46
=1 if pays to be burried in Turkey	0.84	0.37	0.81	0.40	0.62	0.49
=1 if is a strong believer in God	0.29	0.45	0.13	0.34	0.13	0.34
=1 if is a believer (but not a strong believer)	0.70	0.46	0.85	0.36	0.83	0.38
=1 if does not believe in God	0.01	0.11	0.02	0.12	0.04	0.21
=1 if practices prayers	0.60	0.49	0.39	0.49	0.32	0.47
=1 if fasts for Ramadan	0.73	0.44	0.66	0.47	0.75	0.43
=1 if went to Koranic school	0.58	0.50	0.58	0.50	0.50	0.71
Observations	230		190		69	

Table 6: Involvement of grand-parents in the education of their grand-children, by type of marriage: first-hand data.

	(1) frequent contacts	(2) frequent contacts	(3) frequent contacts	(4) look after grd-children	(5) look after grd-children	(6) look after grd-children
Spouse import	0.215***	0.201***	0.283***	0.096	0.096	0.199**
	(0.065)	(0.061)	(0.101)	(0.063)	(0.062)	(0.085)
Spouse-import*daughter			-0.163			-0.204**
			(0.128)			(0.101)
Birth year	0.006	0.001	0.001	0.004	0.001	0.002
	(0.004)	(0.006)	(0.006)	(0.005)	(0.005)	(0.005)
Age of eldest grand-child		-0.009	-0.009		-0.003	-0.003
		(0.006)	(0.006)		(0.006)	(0.006)
Daughter		-0.140**	-0.082		-0.011	0.061
		(0.056)	(0.052)		(0.056)	(0.066)
Observations	190	190	190	190	190	190

Standard errors in parentheses
We use information provided by respondents about their relationships with their grand-children.
The dependent variable in columns 1-3 takes value 1 if the grand-parents see their grand-children more than once per week.
The dependent variable in column 4-6 takes value 1 if the grand-parents look(ed) after the grand-children daily or weekly.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: Spouse import as a function of birth rank, sample of respondants and siblings: first-hand data.

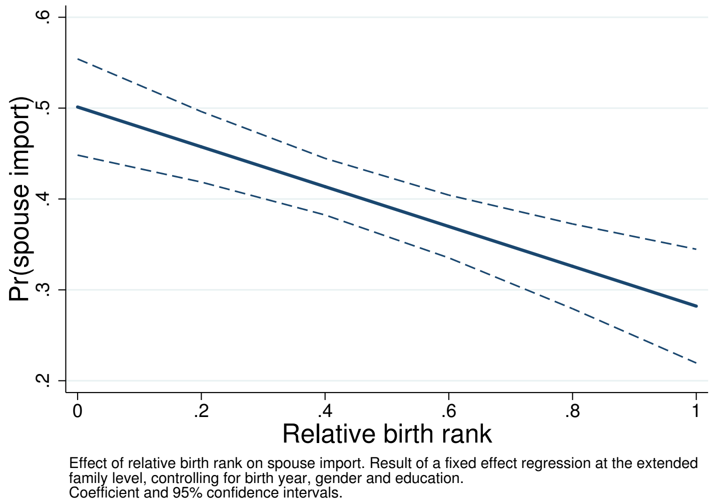


Table 7: Education of children, by type of marriage: first-hand data.

	(1) siwms at school	(2) goes out only w/ family	(3) veiled	(4) has pocket money	(5) leaves school alone	(6) koranic school
Spouse import	-0.061	0.048	0.084	0.067	0.086	0.059
	(0.052)	(0.068)	(0.055)	(0.117)	(0.129)	(0.103)
Spouse import*daughter	-0.100*	0.286*		-0.225*	-0.075	0.239**
	(0.060)	(0.163)		(0.129)	(0.094)	(0.118)
Daughter	0.033	0.048		0.163	0.035	-0.201**
	(0.027)	(0.136)		(0.112)	(0.075)	(0.097)
Birth year	0.010	0.013**	-0.005	0.036***	-0.000	0.007
	(0.008)	(0.005)	(0.007)	(0.010)	(0.004)	(0.005)
Observations	186	163	93	141	187	331

Standard errors in parentheses

We use information provided by G2 respondents about the education of their children

The dependent variable in columns 1 takes value 1 if the child is(was) allowed to participate in swimming at school.

The dependent variable in columns 2 takes value 1 if the child is(was) allowed to leave the house alone.

The dependent variable in columns 3 takes value 1 if the daughter is(was) veiled.

The dependent variable in columns 4 takes value 1 if the child has(had) pocket money.

The dependent variable in columns 5 takes value 1 if the child is(was) allowed to leave school alone.

The dependent variable in columns 6 takes value 1 if the child goes(went) to koranic school.

We restrict attention to children above 14, except for koranic school (children above 6)

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 2: Number of marriages as per the time elapsed since marriage date: administrative data.

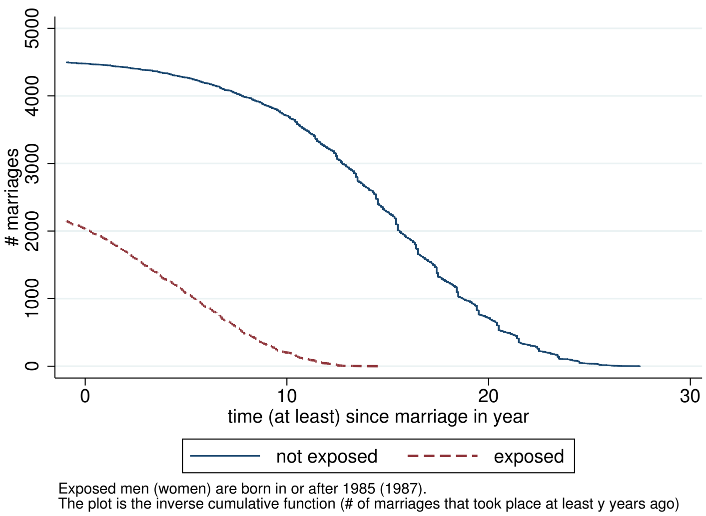


Figure 3: Proportion of cohort not yet married at the reform: administrative data

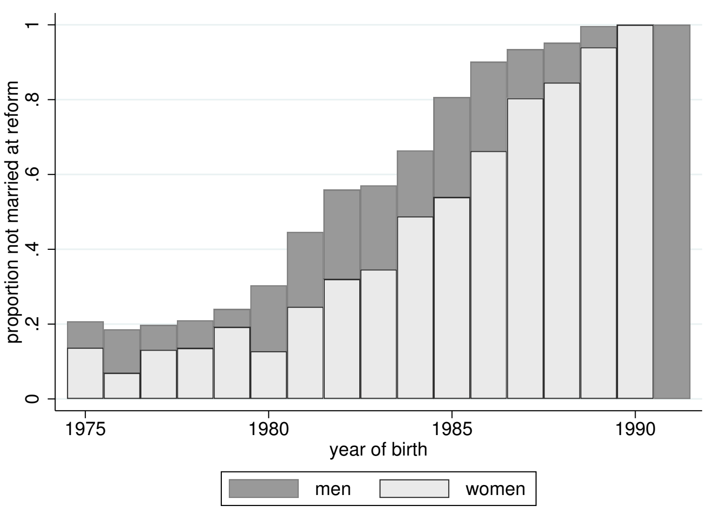


Figure 4: Proportion of cohort not yet married at the reform: first-hand data

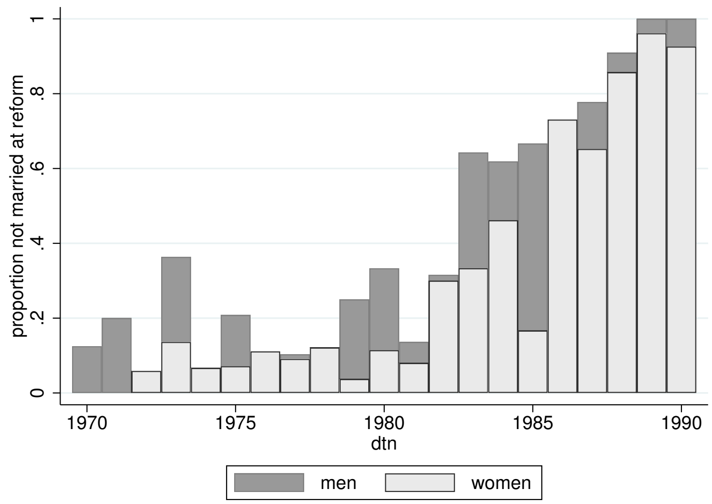


Figure 5: Women's propensity to make an imported spouse marriage, by year of birth: administrative sample

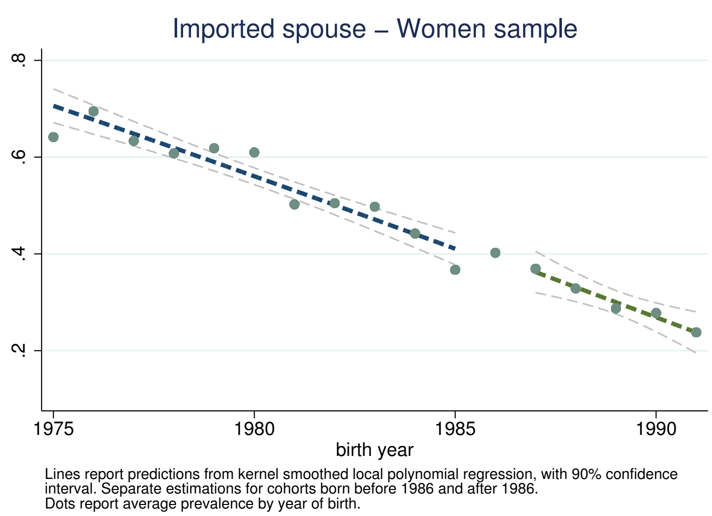


Figure 6: Men's propensity to make an imported spouse marriage, by year of birth: administrative sample

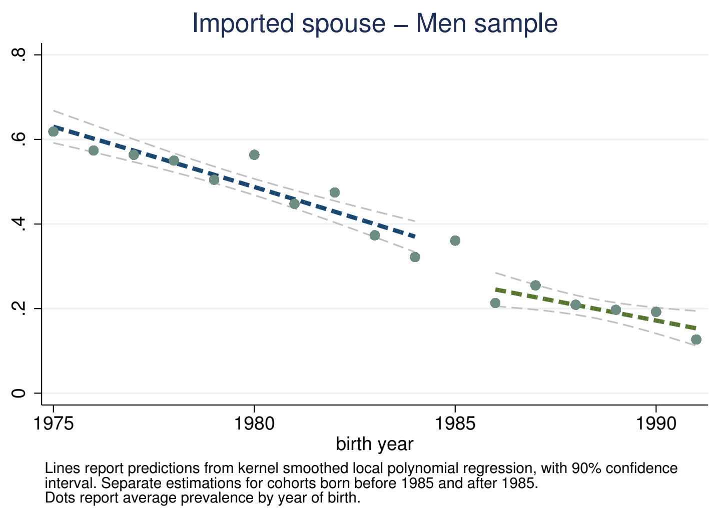


Figure 7: Women's propensity to make an arranged marriage, by year of birth: first-hand data

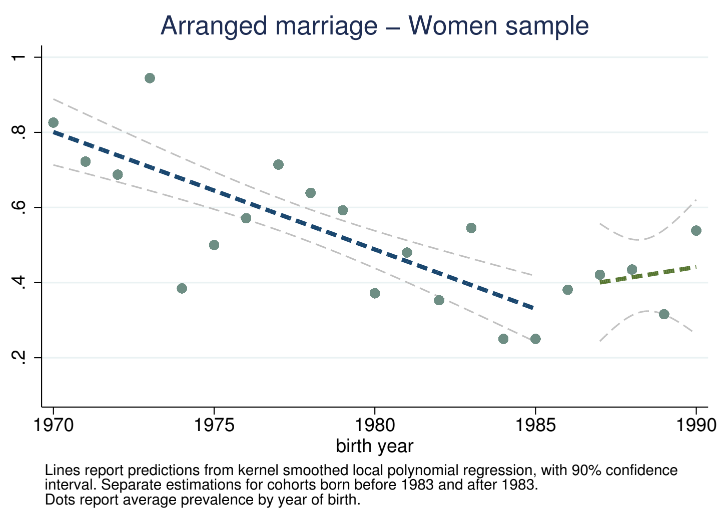


Figure 8: Men's propensity to make an arranged marriage, by year of birth: first-hand data

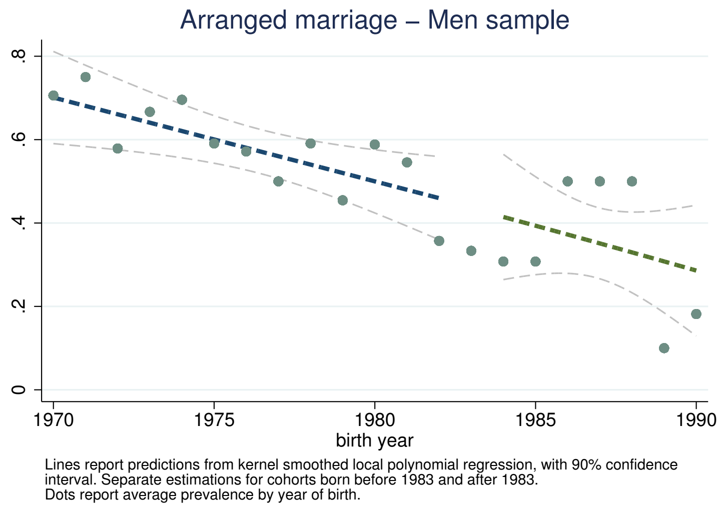


Figure 9: Women's propensity to be divorced after 5 years of marriage, by year of birth: administrative sample

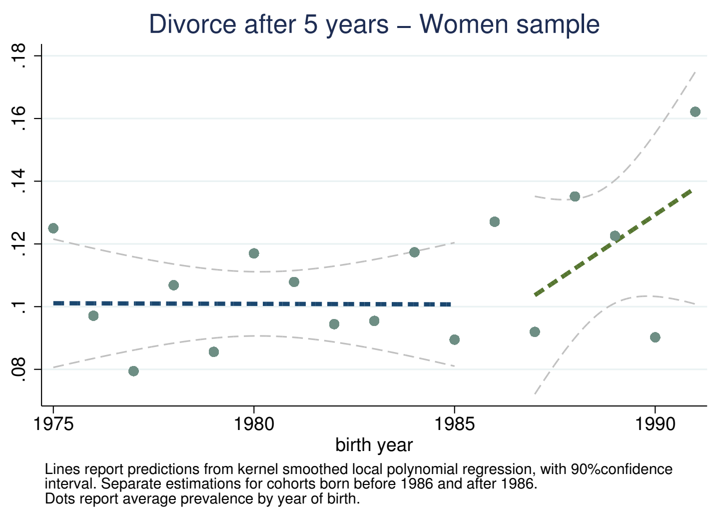


Figure 10: Men's propensity to be divorced after 5 years of marriage, by year of birth: administrative sample

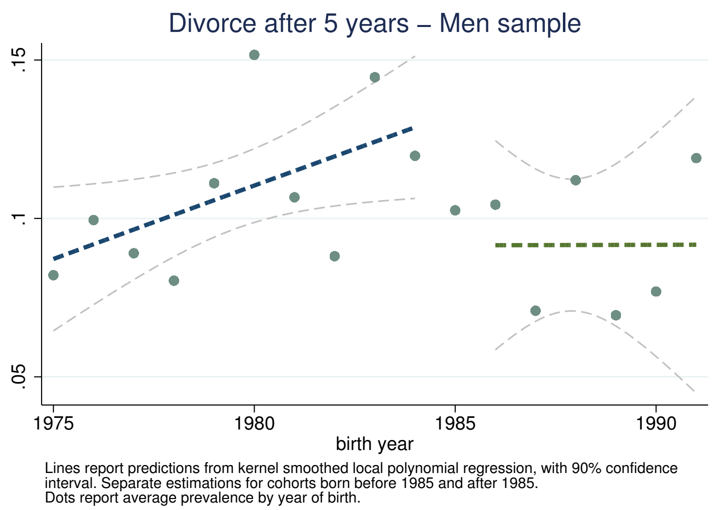


Table 8: Probability to be married at a given age, donut estimation: administrative data

	(1) at 27	(2) at 28	(3) at 29	(4) at 30
exposed	-0.058	-0.061	-0.067	-0.096**
	(0.035)	(0.051)	(0.040)	(0.033)
exposed*woman	0.073*	0.068	0.031	0.033
	(0.041)	(0.054)	(0.038)	(0.036)
woman	0.199***	0.150***	0.161***	0.147***
	(0.022)	(0.028)	(0.025)	(0.029)
dob	-0.024***	-0.019***	-0.020***	-0.017***
	(0.005)	(0.005)	(0.004)	(0.004)
exposed*dob	0.020**	0.010	0.029**	0.045***
	(0.008)	(0.015)	(0.012)	(0.010)
dob*woman	0.009*	0.004	0.007	0.008
	(0.004)	(0.005)	(0.004)	(0.005)
expo*dob*woman	-0.028**	-0.007	-0.004	-0.025
	(0.010)	(0.012)	(0.012)	(0.020)
G2	-0.049***	-0.033	-0.001	0.041
	(0.016)	(0.022)	(0.023)	(0.032)
_cons	0.607***	0.667***	0.637***	0.585***
	(0.071)	(0.074)	(0.073)	(0.062)
N	8760	8034	7354	6766

Standard errors in parentheses

Samples include individuals who reached the age considered in 2018.

One cohort is dropped from the analysis.

Exposed men (women) are born in or after 1985 (1987).

Non exposed men (women) are born in or before 1983 (1985).

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Probability to be married to an imported spouse, donut estimation: administrative data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	at 27	at 28	at 29	at 30	at 27 w/singles	at 28 w/singles	at 29 w/singles	at 30 w/singles
exposed	-0.108**	-0.127**	-0.141**	-0.121**	-0.049*	-0.070**	-0.079**	-0.083**
	(0.046)	(0.049)	(0.052)	(0.056)	(0.025)	(0.031)	(0.031)	(0.033)
exposed*woman	0.111*	0.130**	0.168**	0.165**	0.068*	0.088**	0.097**	0.098*
	(0.054)	(0.055)	(0.060)	(0.075)	(0.035)	(0.039)	(0.040)	(0.047)
woman	0.002	0.001	-0.002	0.013	0.089**	0.063*	0.069**	0.072**
	(0.050)	(0.048)	(0.046)	(0.043)	(0.033)	(0.034)	(0.032)	(0.031)
dob	-0.022***	-0.022***	-0.023***	-0.025***	-0.027***	-0.025***	-0.027***	-0.027***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.003)	(0.003)	(0.004)	(0.004)
exposed*dob	-0.007	0.001	0.006	0.011	0.012**	0.012	0.019*	0.024*
	(0.008)	(0.011)	(0.015)	(0.021)	(0.005)	(0.007)	(0.009)	(0.011)
dob*woman	-0.004	-0.005	-0.005	-0.004	-0.003	-0.006	-0.004	-0.003
	(0.007)	(0.007)	(0.006)	(0.006)	(0.005)	(0.006)	(0.005)	(0.005)
expo*dob*woman	-0.010	-0.017	-0.037*	-0.057	-0.017**	-0.014	-0.028**	-0.043*
	(0.009)	(0.014)	(0.020)	(0.039)	(0.006)	(0.009)	(0.013)	(0.022)
G2	-0.017	-0.008	-0.029	-0.072	-0.017	-0.008	-0.019	-0.039
	(0.036)	(0.039)	(0.046)	(0.054)	(0.019)	(0.021)	(0.029)	(0.033)
_cons	0.546***	0.513***	0.566***	0.603***	0.268***	0.272***	0.313***	0.335***
	(0.114)	(0.116)	(0.115)	(0.119)	(0.069)	(0.077)	(0.083)	(0.086)
N	4928	4874	4750	4557	8078	7383	6718	6160

Standard errors in parentheses

Samples include individuals who reached the age considered in 2018.

One cohort is dropped from the analysis.

Exposed men (women) are born in or after 1985 (1987).

Non exposed men (women) are born in or before 1983 (1985).

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 11: Predicted propensity to be married to an imported spouse at 29 (including singles), by gender and exposition: administrative data

Table 10: Probability spouse grew up in Turkey, donut estimation: administrative data

	(1) at 27	(2) at 28	(3) at 29	(4) at 30	(5) at 27 w/singles	(6) at 28 w/singles	(7) at 29 w/singles	(8) at 30 w/singles
exposed	-0.118***	-0.126**	-0.134***	-0.104**	-0.057**	-0.073**	-0.078**	-0.079**
	(0.040)	(0.045)	(0.044)	(0.047)	(0.023)	(0.030)	(0.028)	(0.029)
exposed*woman	0.092	0.108	0.161**	0.135*	0.056	0.076	0.094**	0.078
	(0.056)	(0.062)	(0.059)	(0.073)	(0.039)	(0.044)	(0.041)	(0.047)
woman	0.044	0.045	0.044	0.060	0.123***	0.098**	0.107**	0.112***
	(0.054)	(0.054)	(0.052)	(0.048)	(0.037)	(0.038)	(0.036)	(0.035)
dob	-0.019***	-0.020***	-0.021***	-0.023***	-0.026***	-0.024***	-0.026***	-0.026***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)
exposed*dob	-0.009	-0.007	0.001	0.001	0.011**	0.009	0.017**	0.020**
	(0.007)	(0.010)	(0.011)	(0.016)	(0.005)	(0.007)	(0.008)	(0.009)
dob*woman	-0.003	-0.003	-0.004	-0.002	-0.002	-0.005	-0.003	-0.001
	(0.008)	(0.008)	(0.007)	(0.006)	(0.006)	(0.006)	(0.005)	(0.005)
expo*dob*woman	-0.008	-0.013	-0.053**	-0.052	-0.017**	-0.013	-0.040***	-0.042
	(0.009)	(0.019)	(0.020)	(0.048)	(0.007)	(0.012)	(0.013)	(0.028)
G2	-0.017	-0.014	-0.010	-0.051	-0.018	-0.010	-0.007	-0.023
	(0.031)	(0.034)	(0.042)	(0.042)	(0.015)	(0.016)	(0.026)	(0.027)
_cons	0.567***	0.547***	0.574***	0.609***	0.281***	0.291***	0.316***	0.335***
	(0.104)	(0.112)	(0.113)	(0.114)	(0.059)	(0.070)	(0.077)	(0.080)
N	4928	4874	4750	4557	8078	7383	6718	6160

Standard errors in parentheses
Samples include individuals who reached the age considered in 2018.
One cohort is dropped from the analysis.
Exposed men (women) are born in or after 1985 (1987).
Non exposed men (women) are born in or before 1983 (1985).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Probability to be married to an imported spouse at 29, various definitions of exposure, donut estimations: administrative data

	(1) donnut 2	(2) donnut 2 w/singles	(3) big donnut 1	(4) big donnut 1 w/singles	(5) big donnut 2	(6) big donnut 2 w/singles
exposed	-0.102	-0.070	-0.089*	-0.031	-0.180***	-0.102**
	(0.064)	(0.041)	(0.045)	(0.028)	(0.057)	(0.038)
exposed*woman	0.129**	0.089**	0.089*	0.023	0.180***	0.099**
	(0.058)	(0.037)	(0.045)	(0.029)	(0.051)	(0.037)
woman	-0.057	0.023	0.047	0.121***	0.016	0.105***
	(0.045)	(0.033)	(0.043)	(0.027)	(0.043)	(0.030)
dob	-0.018***	-0.024***	-0.023***	-0.027***	-0.018**	-0.024***
	(0.006)	(0.004)	(0.005)	(0.004)	(0.006)	(0.004)
exposed*dob	-0.021	0.002	-0.021**	0.002	0.001	0.015
	(0.014)	(0.009)	(0.008)	(0.006)	(0.015)	(0.009)
dob*woman	-0.010	-0.007	-0.002	-0.001	-0.007	-0.003
	(0.007)	(0.005)	(0.005)	(0.004)	(0.006)	(0.005)
expo*dob*woman	-0.011	-0.012	-0.014	-0.014	-0.025*	-0.028**
	(0.018)	(0.013)	(0.014)	(0.011)	(0.013)	(0.011)
G2	-0.021	-0.015	-0.024	-0.021	-0.037	-0.027
	(0.043)	(0.028)	(0.048)	(0.031)	(0.053)	(0.033)
_cons	0.582***	0.334***	0.542***	0.286***	0.609***	0.325***
	(0.115)	(0.086)	(0.124)	(0.089)	(0.140)	(0.101)
N	4744	6735	4460	6226	4434	6248

Standard errors in parentheses

Samples include individuals at least 29 years old in 2018.

In columns 1 and 2, exposed men (women) are born in or after 1985 (1987), non exposed men (women) are born in or before 1983 (1985). In column 3 to 6 two cohorts are dropped. In columns 3 and 4, exposed men and women are born in or after 1987, non exposed men and women are born in or before 1984. In column 5 and 6, exposed men and women are born in or after 1986, non exposed men and women are born in or before 1983.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 12: Probability to be married to an imported spouse at 29, various definitions of exposure, not dropping any cohort: administrative data

	(1) simple 1	(2) simple 1 w/singles	(3) simple 2	(4) simple 2 w/singles	(5) simple 3	(6) simple 3 w/singles	(7) simple 4	(8) simple 4 w/singles
exposed	-0.084*	-0.062*	-0.069	-0.051	-0.069	-0.051	-0.130***	-0.071**
	(0.045)	(0.030)	(0.059)	(0.036)	(0.059)	(0.036)	(0.043)	(0.025)
exposed*woman	0.113**	0.089**	0.099*	0.078**	0.091	0.062**	0.152***	0.081**
	(0.039)	(0.031)	(0.048)	(0.033)	(0.052)	(0.028)	(0.046)	(0.027)
expo*dob	-0.020**	-0.000	-0.016	0.006	-0.016	0.006	0.007	0.020**
	(0.008)	(0.005)	(0.013)	(0.009)	(0.013)	(0.009)	(0.014)	(0.008)
expo*woman*dob	-0.000	-0.008	-0.005	-0.014	-0.016	-0.016	-0.039*	-0.030**
	(0.010)	(0.007)	(0.014)	(0.011)	(0.018)	(0.012)	(0.019)	(0.012)
woman	-0.047	0.029	0.004	0.073**	-0.019	0.050*	0.014	0.084***
	(0.039)	(0.029)	(0.040)	(0.028)	(0.038)	(0.026)	(0.028)	(0.020)
dob	-0.018***	-0.024***	-0.023***	-0.027***	-0.023***	-0.027***	-0.024***	-0.028***
	(0.006)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.003)	(0.003)
dob*woman	-0.011	-0.007	-0.006	-0.004	-0.005	-0.003	-0.003	-0.002
	(0.007)	(0.005)	(0.006)	(0.005)	(0.006)	(0.004)	(0.004)	(0.003)
G2	-0.035	-0.023	-0.035	-0.023	-0.036	-0.023	-0.032	-0.021
	(0.050)	(0.032)	(0.050)	(0.032)	(0.050)	(0.032)	(0.049)	(0.032)
_cons	0.632***	0.376***	0.580***	0.331***	0.579***	0.330***	0.540***	0.293***
	(0.117)	(0.087)	(0.117)	(0.083)	(0.117)	(0.084)	(0.117)	(0.084)
N	5057	7203	5057	7203	5057	7203	5057	7203

Standard errors in parentheses

In columns 1 and 2, exposed men (women) are born in or after 1984 (1986).

In columns 3 and 4, exposed men (women) are born in or after 1985 (1986).

In columns 5 and 6, exposed men (women) are born in or after 1985 (1987).

In columns 7 and 8, exposed men (women) are born in or after 1986 (1987).

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 13: Probability to be married to an imported spouse at 29, assuming that all marriages for which spouse information is missing are "spouse import": administrative data

	(1) at 27	(2) at 28	(3) at 29	(4) at 30	(5) at 27 w/singles	(6) at 28 w/singles	(7) at 29 w/singles	(8) at 30 w/singles
exposed	-0.105**	-0.106**	-0.103*	-0.067	-0.063**	-0.075*	-0.073*	-0.066
	(0.044)	(0.047)	(0.052)	(0.061)	(0.028)	(0.036)	(0.037)	(0.040)
exposed*woman	0.107**	0.125**	0.142**	0.113	0.083**	0.104**	0.096*	0.078
	(0.046)	(0.052)	(0.065)	(0.083)	(0.032)	(0.043)	(0.048)	(0.055)
woman	-0.029	-0.032	-0.031	-0.013	0.072**	0.043	0.051*	0.056*
	(0.038)	(0.037)	(0.037)	(0.035)	(0.028)	(0.029)	(0.028)	(0.027)
dob	-0.019***	-0.018***	-0.019***	-0.022***	-0.026***	-0.024***	-0.025***	-0.026***
	(0.005)	(0.005)	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)
exposed*dob	0.004	-0.000	0.002	-0.005	0.017**	0.010	0.017	0.018
	(0.009)	(0.010)	(0.014)	(0.024)	(0.006)	(0.009)	(0.010)	(0.016)
dob*woman	-0.007	-0.008	-0.008	-0.006	-0.004	-0.007	-0.005	-0.003
	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)	(0.004)	(0.004)
expo*dob*woman	-0.008	-0.010	-0.020	-0.017	-0.015**	-0.010	-0.015	-0.019
	(0.008)	(0.013)	(0.022)	(0.040)	(0.006)	(0.011)	(0.015)	(0.023)
G2	-0.012	-0.001	0.007	-0.008	-0.021	-0.009	0.004	0.010
	(0.028)	(0.030)	(0.028)	(0.039)	(0.014)	(0.015)	(0.016)	(0.023)
_cons	0.700***	0.703***	0.706***	0.667***	0.428***	0.471***	0.475***	0.423***
	(0.080)	(0.078)	(0.078)	(0.092)	(0.073)	(0.073)	(0.083)	(0.080)
N	5610	5525	5386	5163	8760	8034	7354	6766

Standard errors in parentheses
When information is missing, we assume the spouse is imported.
Samples include individuals who reached the age considered in 2018.
One cohort is dropped from the analysis.
Exposed men (women) are born in or after 1985 (1987).
Non exposed men (women) are born in or before 1983 (1985).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 14: Probability to be married to an imported spouse at 29, assuming that none of the marriages for which spouse information is missing are "spouse import": administrative data

	(1) at 27	(2) at 28	(3) at 29	(4) at 30	(5) at 27 w/singles	(6) at 28 w/singles	(7) at 29 w/singles	(8) at 30 w/singles
exposed	-0.087**	-0.103**	-0.125***	-0.114**	-0.044*	-0.062**	-0.073**	-0.078**
	(0.038)	(0.038)	(0.040)	(0.042)	(0.023)	(0.027)	(0.027)	(0.028)
exposed*woman	0.079	0.094*	0.140**	0.147**	0.053	0.071*	0.084**	0.089*
	(0.052)	(0.053)	(0.052)	(0.063)	(0.037)	(0.039)	(0.038)	(0.044)
woman	0.033	0.031	0.025	0.032	0.091**	0.068*	0.073**	0.074**
	(0.050)	(0.048)	(0.044)	(0.042)	(0.034)	(0.035)	(0.033)	(0.032)
dob	-0.021***	-0.021***	-0.021***	-0.022***	-0.024***	-0.023***	-0.024***	-0.024***
	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
exposed*dob	-0.007	0.003	0.009	0.015	0.010**	0.011	0.017**	0.022**
	(0.007)	(0.008)	(0.011)	(0.017)	(0.004)	(0.006)	(0.008)	(0.010)
dob*woman	-0.002	-0.003	-0.004	-0.003	-0.002	-0.004	-0.003	-0.002
	(0.008)	(0.008)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)	(0.005)
expo*dob*woman	-0.011	-0.017	-0.042**	-0.063*	-0.017**	-0.014	-0.029**	-0.046**
	(0.009)	(0.013)	(0.016)	(0.034)	(0.007)	(0.009)	(0.012)	(0.020)
G2	-0.019	-0.007	-0.036	-0.095	-0.016	-0.007	-0.022	-0.049
	(0.037)	(0.043)	(0.053)	(0.059)	(0.020)	(0.023)	(0.031)	(0.036)
_cons	0.353***	0.305***	0.361***	0.438***	0.196***	0.184***	0.220***	0.263***
	(0.096)	(0.089)	(0.098)	(0.092)	(0.057)	(0.059)	(0.065)	(0.064)
N	5610	5525	5386	5163	8760	8034	7354	6766

Standard errors in parentheses
When information is missing, we assume the spouse is not imported.
Samples include individuals who reached the age considered in 2018.
One cohort is dropped from the analysis.
Exposed men (women) are born in or after 1985 (1987).
Non exposed men (women) are born in or before 1983 (1985).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 15: Probability to be married to an imported spouse, municipalities with a low proportion of migrants in the population, donut estimation: administrative data

	(1) at 27	(2) at 28	(3) at 29	(4) at 30	(5) at 27 w/singles	(6) at 28 w/singles	(7) at 29 w/singles	(8) at 30 w/singles
exposed	-0.097	-0.144**	-0.139**	-0.144**	-0.055	-0.081**	-0.076**	-0.086**
	(0.058)	(0.049)	(0.050)	(0.059)	(0.032)	(0.032)	(0.035)	(0.035)
exposed*woman	0.145	0.176**	0.220***	0.199**	0.133**	0.157***	0.156***	0.127**
	(0.086)	(0.075)	(0.073)	(0.081)	(0.049)	(0.047)	(0.049)	(0.049)
woman	-0.048	-0.044	-0.057	-0.037	0.031	0.006	0.019	0.028
	(0.087)	(0.076)	(0.075)	(0.079)	(0.048)	(0.046)	(0.051)	(0.048)
dob	-0.022**	-0.021**	-0.021**	-0.024**	-0.026***	-0.025***	-0.026***	-0.027***
	(0.009)	(0.007)	(0.007)	(0.008)	(0.006)	(0.006)	(0.007)	(0.007)
exposed*dob	-0.018	-0.001	-0.012	0.002	0.007	0.012	0.010	0.016
	(0.012)	(0.012)	(0.013)	(0.024)	(0.007)	(0.007)	(0.008)	(0.013)
dob*woman	-0.014	-0.015	-0.017*	-0.014	-0.013*	-0.016**	-0.014*	-0.012
	(0.011)	(0.010)	(0.009)	(0.010)	(0.007)	(0.007)	(0.007)	(0.007)
expo*dob*woman	0.012	-0.002	-0.022	0.001	-0.005	-0.003	-0.021*	0.002
	(0.014)	(0.013)	(0.016)	(0.029)	(0.008)	(0.010)	(0.010)	(0.016)
G2	-0.031	-0.077	-0.121	-0.186	-0.020	-0.039	-0.058	-0.068
	(0.050)	(0.071)	(0.083)	(0.116)	(0.020)	(0.033)	(0.041)	(0.058)
_cons	0.560***	0.582***	0.665***	0.720***	0.279***	0.306***	0.353***	0.365***
	(0.113)	(0.127)	(0.125)	(0.141)	(0.053)	(0.064)	(0.075)	(0.077)
N	2349	2333	2294	2207	4057	3697	3372	3090

Standard errors in parentheses
Samples include individuals who reached the age considered in 2018.
One cohort is dropped from the analysis.
Exposed men (women) are born in or after 1985 (1987).
Non exposed men (women) are born in or before 1983 (1985).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 16: Duration model for the propensity to marry an imported spouse (competing risk model), various definitions of exposure: administrative data

	(1) donnut 1	(2) donnut 2	(3) big donnut 1	(4) big donnut 2	(5) simple 1	(6) simple 2	(7) simple 3	(8) simple 4
eq1								
exposed	-0.246	-0.431**	-0.242**	-0.514**	-0.153	-0.176	-0.176	-0.398*
	(0.187)	(0.219)	(0.107)	(0.226)	(0.128)	(0.178)	(0.178)	(0.209)
exposed*woman	0.215	0.401*	0.118	0.450**	0.208*	0.232	0.145	0.367*
	(0.180)	(0.243)	(0.106)	(0.226)	(0.119)	(0.161)	(0.169)	(0.221)
woman	0.199*	0.369***	0.560***	0.494***	0.202*	0.363***	0.272***	0.401***
	(0.121)	(0.118)	(0.097)	(0.104)	(0.104)	(0.103)	(0.097)	(0.073)
dob	-0.088***	-0.098***	-0.098***	-0.087***	-0.087***	-0.098***	-0.098***	-0.102***
	(0.013)	(0.012)	(0.012)	(0.013)	(0.012)	(0.012)	(0.012)	(0.009)
exposed*dob	-0.131***	-0.083	-0.181***	-0.095*	-0.124***	-0.120***	-0.120***	-0.079
	(0.034)	(0.056)	(0.015)	(0.055)	(0.019)	(0.033)	(0.033)	(0.054)
dob*woman	-0.005	0.005	0.016	0.010	-0.005	0.005	0.006	0.010
	(0.019)	(0.017)	(0.016)	(0.019)	(0.019)	(0.018)	(0.016)	(0.013)
expo*dob*woman	0.030	-0.020	0.067**	-0.018	0.026	0.023	0.018	-0.024
	(0.044)	(0.060)	(0.026)	(0.056)	(0.027)	(0.040)	(0.043)	(0.059)
G2	-0.005	-0.033	-0.050	-0.069	-0.042	-0.043	-0.043	-0.036
	(0.155)	(0.151)	(0.161)	(0.157)	(0.157)	(0.157)	(0.157)	(0.157)
N	7925	7914	7430	7446	8388	8388	8388	8388

Standard errors in parentheses

In column 1, exposed men (women) are born in or after 1986 (1987), non exposed men (women) are born in or before 1984 (1985).

In column 2, exposed men (women) are born in or after 1985 (1987), non exposed men (women) are born in or before 1983 (1985).

In column 3 and 4 two cohorts are dropped: in columns 3, exposed men and women are born in or after 1987, non exposed men and women are born in or before 1984.

In column 4, exposed men and women are born in or after 1986, non exposed men and women are born in or before 1983.

In columns 5 to 8, all cohorts are included. In column 5, exposed men (women) are born in or after 1984 (1986).

In column 6, exposed men (women) are born in or after 1985 (1986).

In column 7, exposed men (women) are born in or after 1985 (1987).

In column 8, exposed men (women) are born in or after 1986 (1987).

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 17: Duration model for the propensity to marry an imported spouse (competing risk model), various definitions of exposure, low concentration municipalities: administrative data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			big	big				
	donnut 1	donnut 2	donnut 1	donnut 2	simple 1	simple 2	simple 3	simple 4
eq1								
exposed	-0.279	-0.508***	-0.480**	-0.606***	-0.157	-0.197	-0.197	-0.454***
	(0.182)	(0.172)	(0.226)	(0.185)	(0.140)	(0.167)	(0.167)	(0.153)
exposed*woman	0.406**	0.635***	0.508**	0.637***	0.284**	0.324**	0.323**	0.580***
	(0.179)	(0.204)	(0.243)	(0.225)	(0.133)	(0.156)	(0.159)	(0.156)
woman	0.045	0.219	0.403**	0.319	0.078	0.242	0.130	0.273**
	(0.159)	(0.173)	(0.187)	(0.207)	(0.140)	(0.154)	(0.141)	(0.117)
dob	-0.080***	-0.092***	-0.092***	-0.079***	-0.080***	-0.093***	-0.093***	-0.099***
	(0.021)	(0.020)	(0.020)	(0.022)	(0.021)	(0.020)	(0.020)	(0.018)
exposed*dob	-0.170***	-0.114*	-0.172**	-0.129**	-0.161***	-0.157***	-0.157***	-0.105*
	(0.050)	(0.063)	(0.079)	(0.064)	(0.040)	(0.050)	(0.050)	(0.062)
dob*woman	-0.035	-0.023	-0.013	-0.025	-0.035	-0.023	-0.022	-0.016
	(0.022)	(0.023)	(0.024)	(0.029)	(0.022)	(0.023)	(0.021)	(0.017)
expo*dob*woman	0.087**	0.029	0.074	0.055	0.098***	0.094**	0.073*	0.022
	(0.042)	(0.046)	(0.061)	(0.049)	(0.032)	(0.041)	(0.042)	(0.043)
G2	-0.144	-0.181	-0.274*	-0.237	-0.150	-0.150	-0.145	-0.137
	(0.179)	(0.160)	(0.155)	(0.158)	(0.180)	(0.181)	(0.180)	(0.181)
N	3997	3981	3727	3749	4234	4234	4234	4234

Standard errors in parentheses
In column 1, exposed men (women) are born in or after 1986 (1987), non exposed men (women) are born in or before 1984 (1985).
In column 2, exposed men (women) are born in or after 1985 (1987), non exposed men (women) are born in or before 1983 (1985).
In column 3 and 4 two cohorts are dropped: in columns 3, exposed men and women are born in or after 1987,
non exposed men and women are born in or before 1984.
In column 4, exposed men and women are born in or after 1986, non exposed men and women are born in or before 1983.
In columns 5 to 8, all cohorts are included. In column 5, exposed men (women) are born in or after 1984 (1986).
In column 6, exposed men (women) are born in or after 1985 (1986).
In column 7, exposed men (women) are born in or after 1985 (1987).
In column 8, exposed men (women) are born in or after 1986 (1987).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 12: Cumulative incidence curve of spouse import, competing risk model: administrative data

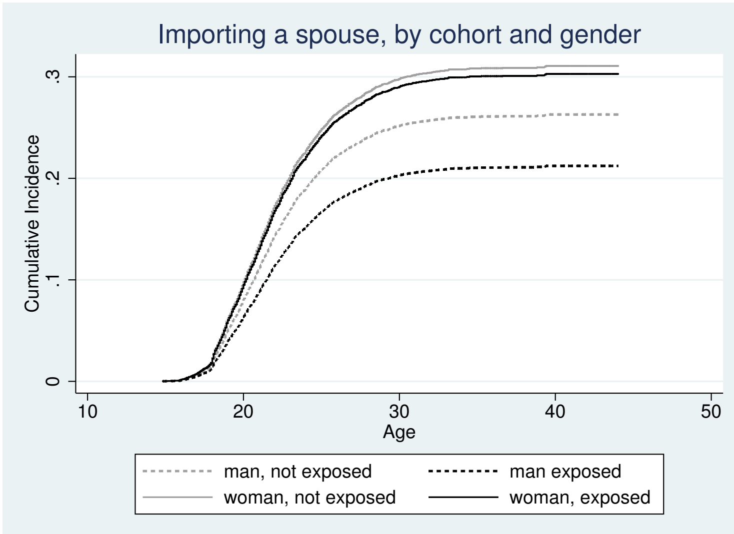


Figure 13: Cumulative incidence curve of spouse import, competing risk model, low concentration municipalities: administrative data

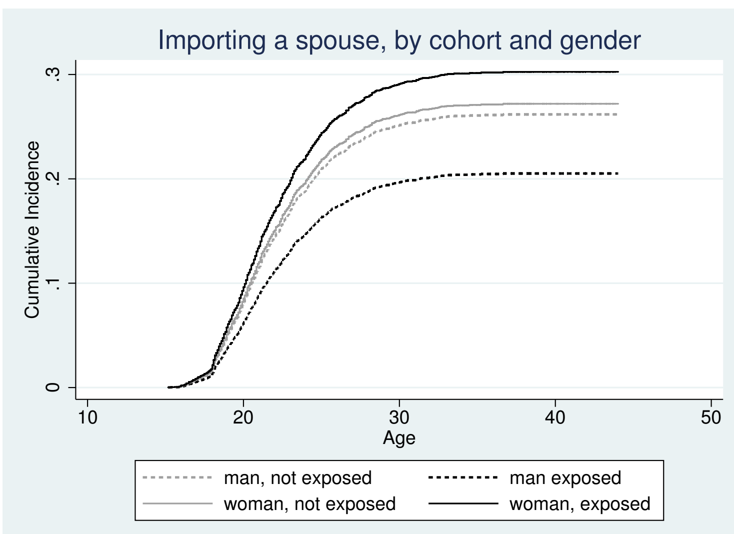


Table 18: Propensity to be married and to be married to an imported spouse at a given age: first-hand data

	(1) married at 25	(2) married at 26	(3) import 25	(4) import 26	(5) import at 25 w/ singles	(6) import at 26 w/ singles
exposed	-0.18*	-0.14	0.15	0.06	-0.00	-0.02
	(0.10)	(0.11)	(0.14)	(0.14)	(0.09)	(0.09)
exposed*woman	0.20	0.06	0.10	0.12	0.20	0.15
	(0.14)	(0.14)	(0.18)	(0.18)	(0.12)	(0.13)
woman	0.04	0.09	-0.27***	-0.27***	-0.20**	-0.19**
	(0.08)	(0.08)	(0.10)	(0.10)	(0.08)	(0.09)
dob	-0.00	-0.01	-0.00	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
exposed*dob	-0.02	-0.01	-0.06**	-0.03	-0.03**	-0.02
	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)	(0.02)
dob*woman	-0.00	0.00	-0.04***	-0.04***	-0.03***	-0.03***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
expo*woman*dob	-0.03	0.00	0.04	0.07	0.02	0.05
	(0.04)	(0.05)	(0.04)	(0.06)	(0.03)	(0.05)
relative birth rank	-0.00	-0.05	-0.08	-0.10*	-0.06	-0.09**
	(0.04)	(0.04)	(0.06)	(0.06)	(0.04)	(0.05)
family size	-0.01	-0.01	0.01	0.01	-0.00	-0.00
	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)
G	-0.05	0.00	-0.02	-0.03	-0.01	-0.02
	(0.07)	(0.08)	(0.09)	(0.10)	(0.05)	(0.07)
_cons	0.86***	0.81***	0.46**	0.50**	0.35**	0.41**
	(0.17)	(0.18)	(0.22)	(0.24)	(0.15)	(0.18)
N	793	736	542	549	793	736

Standard errors in parentheses

Samples include individuals born after 1970, who turned 25 or 26 years old before the survey (2015).

Estimations reported in columns 5 and 6 include singles.

In columns 1 and 2, the dependent variable takes value 1 if the individual was single at the age considered

In columns 3 to 6, the dependent variable takes value 1 if the marriage induced the migration of a spouse

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 19: Propensity to be in an arranged marriage at a given age: first-hand data

	(1) arranged at 25	(2) arranged at 26	(3) arranged at 25 w/ singles	(4) arranged at 26 w/ singles
exposed	-0.00	-0.11	-0.09	-0.12
	(0.14)	(0.14)	(0.09)	(0.09)
exposed*woman	0.20	0.34*	0.25*	0.28**
	(0.19)	(0.19)	(0.13)	(0.14)
woman	-0.23**	-0.25**	-0.16*	-0.16*
	(0.10)	(0.11)	(0.09)	(0.09)
dob	-0.01	-0.00	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)
exposed*dob	-0.03	-0.00	-0.02	-0.01
	(0.03)	(0.03)	(0.02)	(0.02)
dob*woman	-0.03**	-0.03**	-0.02**	-0.02**
	(0.01)	(0.01)	(0.01)	(0.01)
expo*woman*dob	0.05	-0.01	0.01	-0.01
	(0.05)	(0.06)	(0.03)	(0.05)
relative birth rank	-0.17***	-0.16***	-0.11***	-0.14***
	(0.05)	(0.05)	(0.04)	(0.04)
family size	0.01	0.02	0.00	0.01
	(0.02)	(0.02)	(0.01)	(0.01)
G	-0.01	-0.02	-0.02	-0.02
	(0.10)	(0.11)	(0.06)	(0.09)
_cons	0.52**	0.52*	0.43**	0.45**
	(0.25)	(0.27)	(0.17)	(0.21)
N	542	549	793	736

Standard errors in parentheses

Samples include individuals born after 1970, who turned 25 or 26 years old before the survey (2015).

Estimations reported in columns 3 and 4 include singles.

The dependent variable takes value 1 if the spouse was suggested by the parents or if the spouse is a first cousin.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 20: Duration model for the propensity to make an arranged marriage (competing risk model): first-hand data

	(1) imported spouse	(2) arranged marriage
eq1		
exposed	0.10	-0.20
	(0.36)	(0.36)
exposed*woman	0.50	0.50
	(0.54)	(0.51)
woman	-0.73**	-0.31
	(0.32)	(0.28)
dob	-0.02	-0.04
	(0.03)	(0.03)
exposed*dob	-0.23***	-0.14*
	(0.08)	(0.08)
dob*woman	-0.10***	-0.05
	(0.04)	(0.03)
expo*woman*dob	0.11	0.10
	(0.16)	(0.15)
relative birth rank	-0.45***	-0.48***
	(0.17)	(0.15)
family size	-0.00	0.02
	(0.05)	(0.04)
G	-0.09	-0.05
	(0.35)	(0.30)
N	793	793

Standard errors in parentheses
Samples include individuals born after 1970, who turned 25 or 26 years old before the survey (2015).
In columns 1 and 2, the dependent variable takes value 1 if the marriage induced the migration of a spouse. In columns 3 and 4, the dependent variable takes value 1 if the spouse was suggested by the parents or if the spouse is a first cousin. In columns 2 and 4, the slope of the time trend is constrained to be the same before and after the reform
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 14: Cumulative incidence curve of arranged marriage, competing risk model: first-hand data

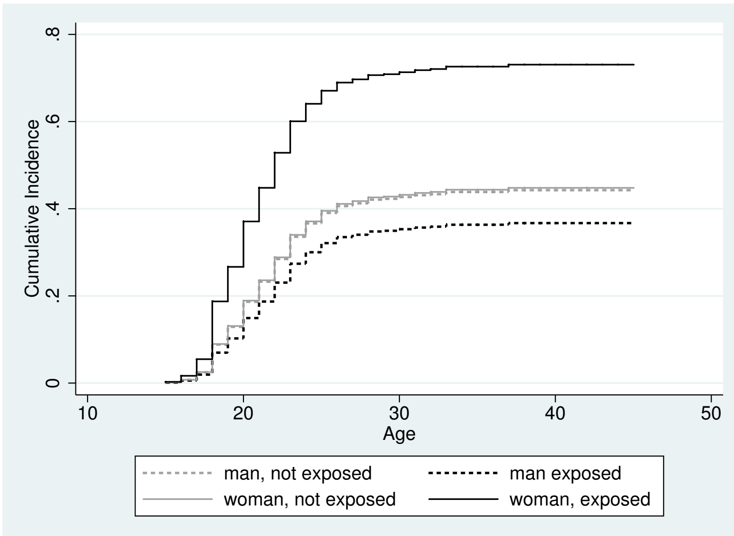


Table 21: Propensity to divorce within 3, 4 or 5 years of marriage, donut estimations: administrative data

	(1) after 3 years	(2) after 4 years	(3) after 5 years
exposed	-0.012	-0.029*	-0.047*
	(0.015)	(0.014)	(0.023)
exposed*woman	0.035	0.041*	0.056**
	(0.022)	(0.023)	(0.025)
woman	-0.042*	-0.033*	-0.035*
	(0.020)	(0.018)	(0.017)
dob	0.003*	0.004**	0.005**
	(0.002)	(0.002)	(0.002)
exposed*dob	-0.008**	-0.006*	-0.003
	(0.003)	(0.003)	(0.007)
dob*woman	-0.006**	-0.005*	-0.005*
	(0.003)	(0.003)	(0.003)
expo*dob*woman	0.011**	0.007	0.005
	(0.004)	(0.005)	(0.009)
G2	0.014	0.024	-0.013
	(0.010)	(0.016)	(0.017)
_cons	0.227***	0.247***	0.318***
	(0.040)	(0.051)	(0.048)
N	6286	5981	5701

Standard errors in parentheses
Samples include individuals married for at least 3, 4 or 5 years in 2018.
Exposed men (women) are born in or after 1986 (1987),
non exposed men (women) are born in or before 1984 (1985).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 22: Propensity to divorce within 5 years of marriage, various definitions of exposure, donut estimations: administrative data

	(1) donnut 2	(2) big donnut 1	(3) big donnut 2	(4) simple 1	(5) simple 2	(6) simple 3	(7) simple 4
exposed	-0.041*	-0.066**	-0.050	-0.020	-0.038**	-0.038**	-0.036
	(0.023)	(0.023)	(0.028)	(0.021)	(0.018)	(0.018)	(0.022)
exposed*woman	0.050*	0.070**	0.071**	0.040	0.058***	0.040	0.038
	(0.027)	(0.024)	(0.024)	(0.026)	(0.019)	(0.025)	(0.025)
woman	-0.033	-0.035*	-0.041*	-0.028	-0.030*	-0.022	-0.016
	(0.021)	(0.019)	(0.022)	(0.018)	(0.015)	(0.016)	(0.014)
dob	0.005*	0.005**	0.005*	0.005*	0.005**	0.005**	0.003*
	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)
exposed*dob	-0.005	0.002	-0.004	-0.008	-0.004	-0.004	-0.002
	(0.005)	(0.009)	(0.008)	(0.005)	(0.005)	(0.005)	(0.007)
dob*woman	-0.005	-0.004	-0.005	-0.005	-0.005*	-0.004	-0.002
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
expo*dob*woman	0.006	-0.001	0.003	0.007	0.003	0.005	0.002
	(0.008)	(0.010)	(0.007)	(0.006)	(0.006)	(0.008)	(0.008)
G2	-0.011	-0.018	-0.021	-0.018	-0.018	-0.018	-0.017
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
_cons	0.300***	0.339***	0.322***	0.311***	0.313***	0.312***	0.306***
	(0.050)	(0.047)	(0.049)	(0.051)	(0.050)	(0.050)	(0.055)
N	5690	5396	5329	6038	6038	6038	6038

Standard errors in parentheses

Samples include individuals married for at least 5 years in 2018.

In column 1, exposed men (women) are born in or after 1985 (1987), non exposed men (women) are born in or before 1983 (1985).

In column 2 and 3 two cohorts are dropped.

In column 2, exposed men and women are born in or after 1987 , non exposed men and women are born in or before 1984.

In column 3, exposed men and women are born in or after 1986 , non exposed men and women are born in or before 1983.

In column 4, exposed men (women) are born in or after 1984 (1986).

In column 5, exposed men (women) are born in or after 1985 (1986).

In column 6, exposed men (women) are born in or after 1985 (1987).

In column7, exposed men (women) are born in or after 1986 (1987).

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 23: Duration model of the propensity to divorce (Cox model), during the first 5 years of marriage: administrative data

	(1) donnut 1	(2) donnut 2	(3) big donnut 1	(4) big donnut 2	(5) simple 1	(6) simple 2	(7) simple 3	(8) simple 4
exposed	-0.348**	-0.339*	-0.450**	-0.383*	-0.156	-0.310**	-0.310**	-0.243*
	(0.159)	(0.184)	(0.184)	(0.216)	(0.176)	(0.132)	(0.132)	(0.147)
exposed*woman	0.358*	0.344	0.384*	0.600**	0.369	0.523**	0.199	0.132
	(0.192)	(0.228)	(0.198)	(0.244)	(0.266)	(0.214)	(0.211)	(0.174)
woman	-0.337*	-0.326	-0.308	-0.381*	-0.280*	-0.293**	-0.180	-0.114
	(0.174)	(0.199)	(0.188)	(0.203)	(0.169)	(0.150)	(0.171)	(0.147)
dob	0.042**	0.046*	0.042**	0.047*	0.047*	0.042**	0.042**	0.027
	(0.017)	(0.024)	(0.017)	(0.024)	(0.024)	(0.017)	(0.017)	(0.016)
exposed*dob	-0.071*	-0.066*	-0.062	-0.079*	-0.093**	-0.063**	-0.063**	-0.056
	(0.042)	(0.037)	(0.056)	(0.045)	(0.038)	(0.031)	(0.031)	(0.042)
dob*woman	-0.048*	-0.052	-0.039	-0.053*	-0.053*	-0.048*	-0.033	-0.018
	(0.026)	(0.031)	(0.028)	(0.032)	(0.031)	(0.026)	(0.027)	(0.024)
expo*dob*woman	0.123***	0.120**	0.104***	0.067	0.080	0.051	0.100*	0.093**
	(0.041)	(0.055)	(0.033)	(0.049)	(0.060)	(0.054)	(0.052)	(0.040)
G2	-0.017	0.006	-0.061	-0.086	-0.058	-0.053	-0.050	-0.049
	(0.191)	(0.193)	(0.186)	(0.180)	(0.182)	(0.183)	(0.184)	(0.185)
N	6650	6646	6281	6242	7049	7049	7049	7049

Standard errors in parentheses

In column 1, exposed men (women) are born in or after 1986 (1987), non exposed men (women) are born in or before 1984 (1985).

In column 2, exposed men (women) are born in or after 1985 (1987), non exposed men (women) are born in or before 1983 (1985).

In column 3 and 4 two cohorts are dropped.

In column 3, exposed men and women are born in or after 1987, non exposed men and women are born in or before 1984.

In column 4, exposed men and women are born in or after 1986 , non exposed men and women are born in or before 1983.

In column 5, exposed men (women) are born in or after 1984 (1986).

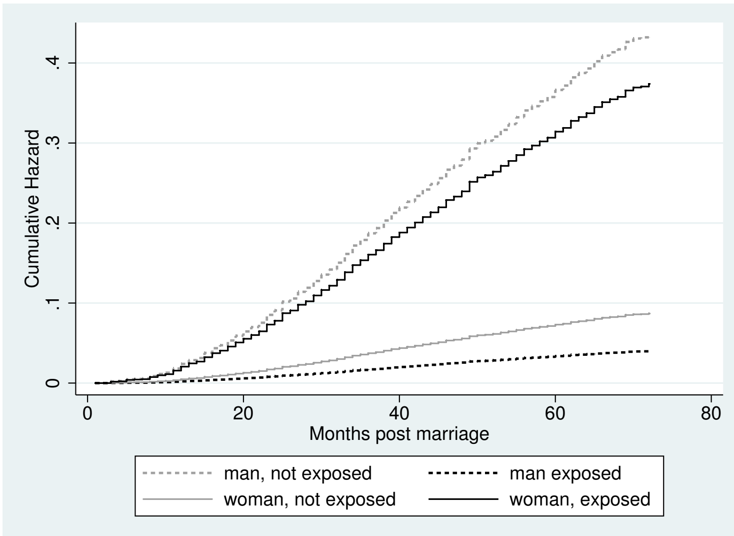
In column 6, exposed men (women) are born in or after 1985 (1986).

In column 7, exposed men (women) are born in or after 1985 (1987).

In column 8, exposed men (women) are born in or after 1986 (1987).

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 15: Cumulative hazard of divorce, Cox model: administrative data



Theoretical appendix

7.1 The Case of Transferable Utility

Here, we consider the case where spouses can transfer utility to one another. A transfer may take the form of, say, a cash transfer or taking a greater share of the burden of household chores. In the case of transferable utility, the marriage status quo can be sustained in the second period as long as the *sum* of utilities to the bride and groom from marriage in the second period is greater than the corresponding sum from all other alternatives. Similarly, extra-marital relations in the second period will arise if the sum of utilities to the bride and groom from this option is greater than the corresponding sum from the alternatives.

Using the table above, we can calculate the sum of utilities from each option as follows:

Outcome	Sum of Utilities
marriage (status quo)	$M(\mathbf{X}_b, \mathbf{X}_g) + M(\mathbf{X}_b, \mathbf{X}_g) + 2\epsilon$
divorce	$M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right) + M\left(\mathbf{X}_{g_r(b)}, \mathbf{X}_b\right) - 2C$
extra-marital: groom only	$M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right)$

In the table above, we ignore the options which involve an extra-marital relation by the bride based on the assumption, as above, that this is too costly for the bride to pursue.

Suppose that, initially, the divorce cost C is sufficiently high such that the (sum of) utilities from the alternative involving an extra-marital relationship by the groom within marriage involves a higher expected utility:

$$M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right) \geq M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right) + M\left(\mathbf{X}_{g_r(b)}, \mathbf{X}_b\right) - 2C \tag{9}$$

Then, divorce will not be pursued. Then the two choices available are the status quo (marriage) and an extra-marital relationship pursued by the groom. Here, we observe that if ϵ is sufficiently high such that

$$M\left(\mathbf{X}_b, \mathbf{X}_g\right) + M\left(\mathbf{X}_b, \mathbf{X}_g\right) + 2\epsilon \geq M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right)$$

then the wife can compensate the groom within the marriage so that he prefers continuing with the marital relationship rather than pursuing an extra-marital relationship. Therefore, the groom pursues an extra-marital relationship if and only if

$$\epsilon < \frac{1}{2}\left\{M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right) - M\left(\mathbf{X}_b, \mathbf{X}_g\right) - M\left(\mathbf{X}_b, \mathbf{X}_g\right)\right\}$$

If the cost of divorce declines sufficiently such that (9) is violated, then the groom's extra-marital relationship is no longer a viable outcome. Then, for a sufficiently low realisation of ϵ, the bride will always file for divorce in the second period, thus preventing the groom from pursuing an extra-marital relationship within the marriage. The arguments regarding the expected utility from arranged marriage for men and women continue to apply as above.

7.2 Marriage Choice in the Two-Period Model

In this section, we establish that in the case of two-period model, the show that the qualitative results established in Section 4.2 continue to hold. As in the one-period model, expected utility from a match is increasing in the level of mutual compatibility and, *ceteris paribus*, agents prefer prospective brides/grooms who share their values in the two-period model. Therefore, the arguments in Lemmas 1-5 will continue to apply in the case of the two-period model. Recall, from the analysis in Section 4.2, that the bride will always marry either one of these two individuals: $g_f(b)$, the potential groom with the highest level of mutual compatibility with b among those who share the parents' values; or $\hat{g}(b)$, the bride's preferred outcome. Therefore, the same holds true in the case of the two-period model.

The cultural transmission terms $\left(V^{ii} - V^{ij}\right)$, $\left(V^{jj} - V^{ji}\right)$, and $\left(P^{ii} - \tilde{P}^i\right)$, and the parameter λ_f, do not affect the second-period decision. For N_b sufficiently large, changes in N_b also do not affect the second-period decision. Therefore, in the two-period model, these will affect the relative attractivenes of the prospective grooms $g_f(b)$ and $\hat{g}(b)$ in the same direction as described in Propositions 1 and 2. Therefore, the results in these propositions will continue to hold in the case of the two-period model.

Following the same reasoning, we can establish identifical results for the prospective groom.

7.3 Theoretical Results and Proofs

Lemma 6 *Under Assumptions 1 and 2, given two prospective grooms g and g' for a bride b, if $v(\mathbf{X}_g) = v(\mathbf{X}_b) \neq v(\mathbf{X}_{g'})$, and $M(\mathbf{X}_b, \mathbf{X}_g) = M(\mathbf{X}_b, \mathbf{X}_{g'})$, then $U_b(\mathbf{X}_b, \mathbf{X}_g) > U_b(\mathbf{X}_b, \mathbf{X}_{g'})$.*

Proof. Let $v(\mathbf{X}_g) = v(\mathbf{X}_b) = i$, $v(\mathbf{X}_{g'}) = k$ and $j \neq i$. Then

$$\begin{aligned}
& P^{ii}V^{ii} + P^{ij}V^{ij} \\
= \quad & P^{ii}V^{ii} + \left(1 - P^{ii}\right)V^{ij} \\
> \quad & \tilde{P}^{i}V^{ii} + \left(1 - \tilde{P}^{i}\right)V^{ij} \text{ by Assumption 2} \\
= \quad & \tilde{P}^{i}V^{ii} + \tilde{P}^{j}V^{ki} \text{ since } \tilde{P}^{i} + \tilde{P}^{j} = 1 \text{ and } V^{ki} = V^{ij} \text{ by Assumption 1}
\end{aligned}$$

Then, since $M(\mathbf{X}_b, \mathbf{X}_g) = M(\mathbf{X}_b, \mathbf{X}_{g'})$, we must have $U_b(\mathbf{X}_b, \mathbf{X}_g) > U_b(\mathbf{X}_b, \mathbf{X}_{g'})$. ■

Proof. of Lemma 1: We provide a proof by contradiction. Suppose $\tilde{g}(b) \neq \hat{g}(b)$. Then $\exists g \in G(b)$ such that

$$\begin{aligned}
& \left[W_b(\mathbf{X}_b, \mathbf{X}_g) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}(\mathbf{X}_b, \mathbf{X}_g) - W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right] \\
> \quad & \left[W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) - W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]
\end{aligned}$$

By construction, $\left[W_b(\mathbf{X}_b, \mathbf{X}_g) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right] \leq \left[W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]$. Therefore, we must have $W_{fb}(\mathbf{X}_b, \mathbf{X}_g) > W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$. Therefore, $U_{fb}(\mathbf{X}_b, \mathbf{X}_g) > U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$. Because $v\left(\mathbf{X}_{\hat{g}(b)}\right) = v_f(\mathbf{X}_b)$, it follows that $\lambda_f M(\mathbf{X}_b, \mathbf{X}_g) > \lambda_f M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$. Therefore, $U_{fb}(\mathbf{X}_b, \mathbf{X}_g) > U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$. If $v(\mathbf{X}_b) = V_f(\mathbf{X}_b)$, then $U_{fb}(\mathbf{X}_b, \mathbf{X}_g) > U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) \Longrightarrow U_b(\mathbf{X}_b, \mathbf{X}_g) > U_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$ which leads to a contradiction. If $v(\mathbf{X}_b) \neq v_f(\mathbf{X}_b)$, then $v(\mathbf{X}_b) \neq v\left(\mathbf{X}_{\hat{g}(b)}\right)$. Therefore, as $M(\mathbf{X}_b, \mathbf{X}_g) > M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$, it must be that $U_b(\mathbf{X}_b, \mathbf{X}_g) > U_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$ which leads to the same contradiction. ■

Proof. of Lemma 2: We provide a proof by contradiction. Suppose $\tilde{g}(b) \neq \hat{g}(b)$. Then

$$\begin{aligned} & \left[W_b\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) - W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right] \\ > & \left[W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) - W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right] \end{aligned}$$

By construction, $W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) \geq W_b\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right)$. Therefore, we must have $W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$. Since $v\left(\mathbf{X}_{\tilde{g}(b)}\right) = v\left(\mathbf{X}_{\hat{g}(b)}\right)$ by assumption, we must have $M\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$. Then, it follows that $W_b\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$, which is contrary to the definition of $\hat{g}(b)$. Therefore, we must have $\tilde{g}(b) = \hat{g}(b)$. ■

Corollary 4 *of Lemma 1: If $\tilde{g}(b) \neq \hat{g}(b)$, then $v_f(\mathbf{X}_b) \neq v\left(\mathbf{X}_{\hat{g}(b)}\right)$.*

Proof. If $v_f(\mathbf{X}_b) = v\left(\mathbf{X}_{\hat{g}(b)}\right)$, then Lemma 1 applies and $\tilde{g}(b) = \hat{g}(b)$. Therefore, if $\tilde{g}(b) \neq \hat{g}(b)$, it must be that $v_f(\mathbf{X}_b) \neq v\left(\mathbf{X}_{\hat{g}(b)}\right)$. ■

Corollary 5 *of Lemma 2: If $\tilde{g}(b) \neq \hat{g}(b)$, then $v\left(\mathbf{X}_{\tilde{g}(b)}\right) \neq v\left(\mathbf{X}_{\hat{g}(b)}\right)$.*

Proof. If $v\left(\mathbf{X}_{\tilde{g}(b)}\right) = v\left(\mathbf{X}_{\hat{g}(b)}\right)$, then Lemma 2 applies and $\tilde{g}(b) = \hat{g}(b)$. Therefore, if $\tilde{g}(b) \neq \hat{g}(b)$, it must be that $v\left(\mathbf{X}_{\tilde{g}(b)}\right) \neq v\left(\mathbf{X}_{\hat{g}(b)}\right)$. ■

Proof. of Lemma 3: We provide a proof by contradiction. Suppose $v\left(\mathbf{X}_{\tilde{g}(b)}\right) \neq v_f(\mathbf{X}_b)$. It follows from the corollary to Lemma 2 that if $\tilde{g}(b) \neq \hat{g}(b)$, then $v\left(\mathbf{X}_{\tilde{g}(b)}\right) \neq v\left(\mathbf{X}_{\hat{g}(b)}\right)$. So it must be that $v\left(\mathbf{X}_{\hat{g}(b)}\right) = v_f(\mathbf{X}_b)$. By construction, we must have

$$U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) \tag{10}$$

(If not, $\tilde{g}(b)$ cannot be the Nash bargaining solution in (12)).

$$\Longrightarrow M\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) \tag{11}$$

If $v(\mathbf{X}_b) = v\left(\mathbf{X}_{\tilde{g}(b)}\right)$, then it follows from (11) that

$$U_b\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > U_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$$

which is a contradiction. If $v(\mathbf{X}_b) = v\left(\mathbf{X}_{\hat{g}(b)}\right) = v_f(\mathbf{X}_b)$, then it follows from (10) and (11) that

$$U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$$

which is again a contradiction. Therefore, we must have $v\left(\mathbf{X}_{\tilde{g}(b)}\right) = v_f\left(\mathbf{X}_b\right)$. ■

Proof. of Lemma 4: If $\tilde{g}(b) \neq \hat{g}(b)$, then

$$\begin{aligned} & \left[W_b\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) - W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right] \\ > & \left[W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) - W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right] \end{aligned}$$

By construction, $W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) \geq W_b\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right)$. Therefore, we must have $W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$. Therefore,

$$U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$$

Suppose $M\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) \geq M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$. Then,

$$U_b\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > U_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$$

By assumption, $v_f\left(\mathbf{X}_b\right) = v\left(\mathbf{X}_b\right)$. Therefore, it follows that

$$U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) > U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$$

which is contrary to the definition of $\hat{g}(b)$. Therefore, we must have $M\left(\mathbf{X}_b, \mathbf{X}_{\tilde{g}(b)}\right) < M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)$.

■

Proof. of Lemma 5: (i) Suppose $v\left(\mathbf{X}_{\tilde{g}(b)}\right) = v\left(\mathbf{X}_b\right)$. By construction,

$$U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) = \max_{g \in G(b)} U_{fb}\left(\mathbf{X}_b, \mathbf{X}_g\right) \tag{12}$$

$$\Longrightarrow M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) = \max_{g \in \{G(b): v(\mathbf{X}_g) = v(\mathbf{X}_b)\}} M\left(\mathbf{X}_b, \mathbf{X}_g\right)$$

Then, for each $g \in \{G(b) : v\left(\mathbf{X}_g\right) = v\left(\mathbf{X}_b\right)\}$, we have

$$U_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) \geq U_{fb}\left(\mathbf{X}_b, \mathbf{X}_g\right) \tag{13}$$

It follows from (12) and (13) that

$$\hat{g}(b) = \arg \max_{g \in \{G(b): v(\mathbf{X}_g) = v(\mathbf{X}_b)\}} \left[W_b\left(\mathbf{X}_b, \mathbf{X}_g\right) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b, \mathbf{X}_g\right) - W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right] \tag{14}$$

By assumption, $v\left(\mathbf{X}_{\tilde{g}(b)}\right)=v\left(\mathbf{X}_b\right)$. Therefore, we can write

$$\begin{aligned}\tilde{g}(b) &= \arg\max_{g\in G(b)}\left[W_b\left(\mathbf{X}_b,\mathbf{X}_g\right)+N_b-W_b\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b,\mathbf{X}_g\right)-W_{fb}\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\right] \\ &= \arg\max_{g\in\{G(b):v(\mathbf{X}_g)=v(\mathbf{X}_b)\}}\left[W_b\left(\mathbf{X}_b,\mathbf{X}_g\right)+N_b-W_b\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b,\mathbf{X}_g\right)-W_{fb}\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\right] \quad (15)\end{aligned}$$

Comparing (14) and (15), we obtain $\hat{g}(b)=\tilde{g}(b)$.

(ii) Let

$$g_m=\arg\max_{g\in\{G(b):v(\mathbf{X}_g)=v_f(\mathbf{X}_b)\}}M\left(\mathbf{X}_b,\mathbf{X}_g\right)$$

It follows from the definition of $U_{fb}(.)$ that

$$g_m=\arg\max_{g\in\{G(b):v(\mathbf{X}_g)=v_f(\mathbf{X}_b)\}}U_{fb}\left(\mathbf{X}_b,\mathbf{X}_g\right)$$

$$=\arg\max_{g\in\{G(b):v(\mathbf{X}_g)=v_f(\mathbf{X}_b)\}}U_b\left(\mathbf{X}_b,\mathbf{X}_g\right)$$

$$=\arg\max_{g\in\{G(b):v(\mathbf{X}_g)=v(\mathbf{X}_b)\}}\left[W_b\left(\mathbf{X}_b,\mathbf{X}_g\right)+N_b-W_b\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b,\mathbf{X}_g\right)-W_{fb}\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\right] \quad (16)$$

By assumption, $v\left(\mathbf{X}_{\tilde{g}(b)}\right)=v_f\left(\mathbf{X}_b\right)$. Therefore, we can write

$$\begin{aligned}\tilde{g}(b) &= \arg\max_{g\in G(b)}\left[W_b\left(\mathbf{X}_b,\mathbf{X}_g\right)+N_b-W_b\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b,\mathbf{X}_g\right)-W_{fb}\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\right] \\ &= \arg\max_{g\in\{G(b):v(\mathbf{X}_g)=v_f(\mathbf{X}_b)\}}\left[W_b\left(\mathbf{X}_b,\mathbf{X}_g\right)+N_b-W_b\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b,\mathbf{X}_g\right)-W_{fb}\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\right] \quad (17)\end{aligned}$$

Comparing (16) and (17), we obtain $\tilde{g}(b)=g_m=\arg\max_{g\in\{G(b):v(\mathbf{X}_g)=v_f(\mathbf{X}_b)\}}M\left(\mathbf{X}_b,\mathbf{X}_g\right)$. ■

Proof. of Proposition 1: By assumption, $v_f\left(\mathbf{X}_b\right)=v\left(\mathbf{X}_b\right)=i\neq j$; i.e. the bride and her parents have the same type of values. Define

$$g_f(b)=\max_{g\in\{G(b):v(\mathbf{X}_g)=v_f(\mathbf{X}_b)\}}M\left(\mathbf{X}_b,\mathbf{X}_g\right)$$

Thus, $g_f(b)$ is the potential groom with the highest level of mutual compatibility with b among those who share the parents' values. Using Lemmas 1, 2 and 5, the bargaining outcome must be either $\hat{g}(b)$ or $g_f(b)$. Therefore, we need only compare the value of the objective function in (3) for these two potential grooms. By construction, the objective function is equal to zero for the groom choice $\hat{g}(b)$.

In the case of the groom choice $g_f(b)$, the objection function can be written as

$$
\begin{aligned}
& \left[W_b\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) + N_b - W_b\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]\left[W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) - W_{fb}\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right] \\
= & \left[M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) + N_b - M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) + \Phi\left(P^{ii}, \tilde{P}^i, V^{ii}, V^{ij}\right)\right] \\
& \times\left[\lambda_f M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) - \lambda_f M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) + \Phi\left(P^{ii}, \tilde{P}^i, V^{ii}, V^{ij}\right)\right]
\end{aligned}
$$

The expression is greater than zero if and only if the following two conditions hold:

$$
\begin{aligned}
\Phi\left(P^{ii}, \tilde{P}^i, V^{ii}, V^{ij}\right) + N_b &> M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) - M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) \\
\Phi\left(P^{ii}, \tilde{P}^i, V^{ii}, V^{ij}\right) &> \lambda_f\left[M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) - M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right)\right]
\end{aligned}
$$

Combining the two inequalities, we obtain

$$M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) - M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) < \min\left\{\Phi(.) + N_b, \Phi(.)/\lambda_f\right\}$$

$$\Longrightarrow \Delta(b) < \min\left\{\Phi(.) + N_b, \Phi(.)/\lambda_f\right\}$$

where $\Phi(.) = \left(P^{ii} - \tilde{P}^i\right)\left(V^{ii} - V^{ij}\right)$. Therefore, an arranged marriage occurs (with $g_f(b)$) if the condition above holds. Otherwise, b marries $\hat{g}(b)$. By Assumption 3, $\Delta(b) \sim F_{ij}(.)$. Therefore the probability of arranged marriage is given by $F_{ij}(\min\{\Phi(.) + N_b, \Phi(.)/\lambda_f\})$. As $F_{ij}(.)$ is a c.d.f., it is weakly increasing in its argument $\min\{\Phi(.) + N_b, \Phi(.)/\lambda_f\}$. Therefore, the probability of arranged marriage is weakly increasing in $\left(P^{ii} - \tilde{P}^i\right)$, $\left(V^{ii} - V^{ij}\right)$ and N_b and weakly decreasing in λ_f. ■

Proof. of Proposition 2: By assumption, $v_f(\mathbf{X}_b) = j \neq i = v(\mathbf{X}_b)$; i.e. the bride and her parents have different types of values. Define

$$g_f(b) = \max_{g \in \{G(b): v(\mathbf{X}_g) = v_f(\mathbf{X}_b)\}} M(\mathbf{X}_b, \mathbf{X}_g)$$

Thus, $g_f(b)$ is the potential groom with the highest level of mutual compatibility with b among those who share the parents' values. Using Lemmas 1, 2 and 5, the bargaining outcome must be either $\hat{g}(b)$ or $g_f(b)$. Therefore, we need only compare the value of the objective function in (12) for these two potential grooms. By construction, the objective function is equal to zero for the groom choice $\hat{g}(b)$.

In the case of the groom choice $g_f(b)$, the objective function can be written as

$$\left[M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) + N_b - M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) - \Phi\left(P^{ii}, \tilde{P}^i, V^{ii}, V^{ij}\right)\right]$$
$$\times\left[\lambda_f M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) - \lambda_f M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) + \tilde{\Phi}\left(P^{ii}, \tilde{P}^i, V^{jj}, V^{ji}\right)\right]$$

where $v(\mathbf{X}_b) = i \neq j = v\left(\mathbf{X}_{g_f(b)}\right)$. The expression above is greater than zero if and only if both of the following two conditions hold:

$$\begin{aligned}
\Phi\left(P^{ii}, \tilde{P}^i, V^{ii}, V^{ij}\right) &< M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) - M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) + N_b \\
-\tilde{\Phi}\left(P^{ii}, \tilde{P}^i, V^{jj}, V^{ji}\right) &< \lambda_f\left[M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) - M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right)\right]
\end{aligned}$$

Combining the two inequalities, we obtain

$$M\left(\mathbf{X}_b, \mathbf{X}_{\hat{g}(b)}\right) - M\left(\mathbf{X}_b, \mathbf{X}_{g_f(b)}\right) < \min\left\{-\Phi(.) + N_b, \tilde{\Phi}(.)/\lambda_f\right\}$$

$$\Longrightarrow \Delta(b) < \min\left\{-\Phi(.) + N_b, \tilde{\Phi}(.)/\lambda_f\right\}$$

where $\Phi(.) = \left(P^{ii} - \tilde{P}^i\right)\left(V^{ii} - V^{ij}\right)$ and $\tilde{\Phi}(.) = \left(P^{ii} - \tilde{P}^i\right)\left(V^{jj} - V^{ji}\right)$. Therefore, an arranged marriage occurs (with $g_f(b)$) if and only if the condition above holds. Otherwise, b marries $\hat{g}(b)$. By Assumption 3, $\Delta(b) \sim F_{ij}(.)$. Therefore the probability of arranged marriage is given by $F_{ij}\left(\min\left\{-\Phi(.) + N_b, \tilde{\Phi}(.)/\lambda_f\right\}\right)$ where $\Phi(.) = \left(P^{ii} - \tilde{P}^i\right)\left(V^{ii} - V^{ij}\right)$ and $\tilde{\Phi}(.) = \left(P^{ii} - \tilde{P}^i\right)\left(V^{jj} - V^{ji}\right)$. As $F_{ij}(.)$ is a c.d.f., it is weakly increasing in its argument $\min\left\{-\Phi(.) + N_b, \tilde{\Phi}(.)/\lambda_f\right\}$. Therefore, the probability of arranged marriage is weakly increasing in N_b and $\left(V^{jj} - V^{ji}\right)$ and weakly decreasing in λ_f and $\left(V^{ii} - V^{ij}\right)$. The probability of arranged marriage is also increasing in $\left(P^{ii} - \tilde{P}^i\right)$ if $\tilde{\Phi}(.)/\lambda_f > -\Phi(.) + N_b$ and vice versa if $\tilde{\Phi}(.)/\lambda_f < -\Phi(.) + N_b$. ■

Proof. of Proposition 3: By assumption, N_b is sufficiently small such that for low realisations of ϵ, the groom pursues extra-marital relations but the bride does not. Let us define

$$\begin{aligned}
\bar{\epsilon}(b,g) &= \max\left\{M\left(\mathbf{X}_{b_r(g)}, \mathbf{X}_g\right) - M\left(\mathbf{X}_b, \mathbf{X}_g\right), 0 - M\left(\mathbf{X}_b, \mathbf{X}_g\right)\right\} && (18) \\
\overline{C} &= M\left(\mathbf{X}_b, \mathbf{X}_{g_r(b)}\right) && (19)
\end{aligned}$$

Then, for $C \geq \overline{C}$, there is no divorce for any realisation of ϵ. And the second period outcome is one where the groom pursues extra-marital relations if and only if $\epsilon < \bar{\epsilon}$. Then, the ex-ante expected utility from the marriage over the two periods can be written as

$$\mathbf{E}U_g\left(\mathbf{X}_b,\mathbf{X}_g\right)+\Pr\left(\epsilon\geq\overline{\epsilon}\right)\mathbf{E}\left[M\left(\mathbf{X}_b,\mathbf{X}_g\right)+\epsilon|\epsilon\geq\overline{\epsilon}\right]+\Pr\left(\epsilon<\overline{\epsilon}\right)M\left(\mathbf{X}_{b_r(g)},\mathbf{X}_g\right)\text{ for the groom} \quad (20)$$

$$\mathbf{E}U_b\left(\mathbf{X}_b,\mathbf{X}_g\right)+\Pr\left(\epsilon\geq\overline{\epsilon}\right)\mathbf{E}\left[M\left(\mathbf{X}_b,\mathbf{X}_g\right)+\epsilon|\epsilon\geq\overline{\epsilon}\right]+\Pr\left(\epsilon<\overline{\epsilon}\right)\times 0\text{ for the bride} \quad (21)$$

(where we write $\overline{\epsilon}$ for $\overline{\epsilon}(b,g)$ for ease of notation). For $C<\overline{C}$, the second period outcome is divorce if and only if $\epsilon<\overline{\epsilon}$. Then, the ex-ante expected utility from the marriage over the two periods can be written as

$$\mathbf{E}U_g\left(\mathbf{X}_b,\mathbf{X}_g\right)+\Pr\left(\epsilon\geq\overline{\epsilon}\right)\mathbf{E}\left[M\left(\mathbf{X}_b,\mathbf{X}_g\right)+\epsilon|\epsilon\geq\overline{\epsilon}\right]+\Pr\left(\epsilon<\overline{\epsilon}\right)\left\{M\left(\mathbf{X}_{b_r(g)},\mathbf{X}_g\right)-C\right\}\text{ for the groom} \quad (22)$$

$$\mathbf{E}U_b\left(\mathbf{X}_b,\mathbf{X}_g\right)+\Pr\left(\epsilon\geq\overline{\epsilon}\right)\mathbf{E}\left[M\left(\mathbf{X}_b,\mathbf{X}_g\right)+\epsilon|\epsilon\geq\overline{\epsilon}\right]+\Pr\left(\epsilon<\overline{\epsilon}\right)\left\{M\left(\mathbf{X}_b,\mathbf{X}_{g_r(b)}\right)-C\right\}\text{ for the bride} \quad (23)$$

Thus, by subtracting the expression in (20) from the expression (22), we obtain the net gain in expected utility to a groom when the cost of divorce falls below $\overline{C}$:

$$\Pr\left(\epsilon<\overline{\epsilon}\right)\left\{M\left(\mathbf{X}_{b_r(g)},\mathbf{X}_g\right)-M\left(\mathbf{X}_{b_r(g)},\mathbf{X}_g\right)-C\right\}=-C\Pr\left(\epsilon<\overline{\epsilon}\right)<0$$

Similarly, by subtracting the expression in (21) from the expression (23), we obtain the net gain in expected utility to a bride when the cost of divorce falls below $\overline{C}$:

$$\Pr\left(\epsilon<\overline{\epsilon}\right)\left\{M\left(\mathbf{X}_b,\mathbf{X}_{g_r(b)}\right)-C-0\right\}>0\text{ as }C<\overline{C}$$

Therefore, a decline in the cost of divorce increases the expected utility from the initial marriage to the bride but decreases the expected utility from the initial marriage to the groom.

By Assumption 7, $M\left(\mathbf{X}_b,\mathbf{X}_{\hat{g}(b)}\right)\geq M\left(\mathbf{X}_b,\mathbf{X}_{\tilde{g}(b)}\right)$ where we denote by $\hat{g}(b)$ the bride's preferred groom, and by $\tilde{g}(b)$ the groom chosen through the bargaining process between the bride and her family. It follows that $\overline{\epsilon}(b,\hat{g}(b))\leq\overline{\epsilon}(b,\tilde{g}(b))$, i.e. the threshold value of ϵ below which the initial marriage breaks down (resulting in divorce or extra-marital relations) is lower in the case of marriage with the preferred groom compared to the case of an arranged marriage. It follows that $\Pr\left(\epsilon<\overline{\epsilon}(b,\tilde{g}(b))\right)\left\{M\left(\mathbf{X}_b,\mathbf{X}_{g_r(b)}\right)-C\right\}\geq\Pr\left(\epsilon<\overline{\epsilon}(b,\hat{g}(b))\right)\left\{M\left(\mathbf{X}_b,\mathbf{X}_{g_r(b)}\right)-C\right\}$. Therefore, the gain in expected utility to a bride from her first marriage, when C falls from a level above $\overline{C}$ to a level below $\overline{C}$, is (weakly) greater in the case of an arranged marriage compared to the case of marriage with the preferred groom. Therefore, the decline in the cost of divorce makes arranged marriages relatively more attractive to the bride.

Similarly, by Assumption 7, $M\left(\mathbf{X}_{\hat{b}(g)}, \mathbf{X}_g\right) \geq M\left(\mathbf{X}_{\tilde{b}(g)}, \mathbf{X}_g\right)$ where we denote by $\hat{b}(g)$ the groom's preferred bride, and by $\tilde{b}(g)$ the bride chosen through the bargaining process between the groom and his family. It follows that $\bar{\epsilon}\left(\hat{b}(g), g\right) \leq \bar{\epsilon}\left(\tilde{b}(g), g\right)$. It follows that $-C \Pr\left(\epsilon < \bar{\epsilon}\left(\tilde{b}(g), g\right)\right) \leq -C \Pr\left(\epsilon < \bar{\epsilon}\left(\hat{b}(g), g\right)\right)$. Therefore, the loss in expected utility to a groom from his first marriage, when C falls from a level above $\overline{C}$ to a level below $\overline{C}$, is (weakly) greater (i.e. more negative) in the case of an arranged marriage compared to the case of marriage with the preferred bride. Therefore, the decline in the cost of divorce makes arranged marriages relatively less attractive to the groom. ■

Proof. of Corollary to Proposition 3: According to the analysis in Section 4.2, if $v(\hat{g}(b)) = v_f(\mathbf{X}_b)$, then the bride marries her preferred groom. Therefore, a necessary condition for an arranged marriage is $v(\hat{g}(b)) \neq v_f(\mathbf{X}_b)$ which, by Assumption 5, happens with exogenous probability ρ. Therefore, we need only consider how changes in the divorce cost C affects the marriage outcome in this case. (i) Let us denote by $g_f(b)$ the potential groom with the highest level of mutual compatibility with b among those who share the parents' values. So changes in divorce costs do not affect As per Proposition 3, for women, a decline in the cost of divorce (from a level above $\overline{C}$ to a level below $\overline{C}$) increases the expected utility gain from arranged marriage to $g_f(b)$ compared to marriage with the preferred groom $\hat{g}(b)$. By assumption, the bride's family obtains the same expected utility as the bride from each possible outcome in the second period. Therefore, following the reasoning in the proof of Proposition 3, the decline in the cost of divorce also increases the bride's family's expected utility gain from arranged marriage to $g_f(b)$ compared to marriage with the preferred groom.

Therefore, following the reasoning in the proof of Proposition 1, the decline in the cost of divorce increases the value of the Nash bargaining product in (3) in the case of arranged marriage to $g_f(b)$. On the other hand, the value of the Nash bargaining product in the case of the bride's preferred groom always equals zero. Therefore, following the reasoning in the proof of Proposition 1, the decline in the divorce cost increases the probability of arranged marriage among women.

Let us denote by $b_f(g)$ the potential groom with the highest level of mutual compatibility with g among those who share the parents' values. As per Proposition 3, for men, a decline in the cost of divorce (from a level above $\overline{C}$ to a level below $\overline{C}$) decreases the expected utility gain from arranged marriage to $b_f(g)$ compared to marriage with the preferred bride $\hat{b}(g)$. Then, following the reasoning above, the decline in the divorce cost decreases the probability of arranged marriage among men.

(ii) Let $i = v(\mathbf{X}_b)$ and $j = v_f(\mathbf{X}_b)$. Suppose that the cost of divorce declines from C_1 to C_2 where $C_1 > \overline{C} > C_2$. By Assumption 8, $\Delta(b; C) \sim F_{ij}(.; C)$. By Assumption 10, $F_{ij}(.; C_1)$ first-order stochastically dominates $F_{ij}(.; C_2)$. Following the reasoning in the proof of Proposition 1, the probability that b has an arranged marriage, for divorce cost C, equals $F_{ij}(\min\{\Phi(.) + N_b, \Phi(.)/\lambda_f\}; C)$. Then, using Assumption 10, $F_{ij}(\min\{\Phi(.) + N_b, \Phi(.)/\lambda_f\}; C_2) < F_{ij}(\min\{\Phi(.) + N_b, \Phi(.)/\lambda_f\}; C_1)$, i.e. the probability is lower for cost C_2 than for cost C_1 for any given value of the Nash bargaining product in (12). Therefore, the increase in the probability of arranged marriage among women obtained in part (i) above is smaller under Assumptions 8 and 10, compared to the case where the policy change has no effect on the pool of potential partners.

By similar reasoning, the decrease in the probability of arranged marriage among men obtained in part (i) above is larger under Assumptions 9 and 11, compared to the case where the policy change has no effect on the pool of potential partners. ■

Proof. of Proposition 4: Define $\overline{\epsilon}(b, g)$ and $\overline{C}$ as in (18) and (19). Suppose that the cost of divorce declines from a level above $\overline{C}$ to some $C \in (0, \overline{C})$.

(i) Consider couples who married before the decline in the cost of divorce. As per the reasoning in the proof of Proposition 3, before the decline in divorce costs, divorce is not initiated for any realisation of ϵ; and for $C < \overline{C}$, divorce is initiated if and only if $\epsilon < \overline{\epsilon}$. Comparing (20) and (22), we see that, if $C > 0$, the groom is strictly better off pursuing an extra-marital relationship than from divorce. Comparing (21) and (23), we see that, for $C < \overline{C}$, the bride is strictly better off from divorce than the situation where the groom pursues extra-marital relationships (by assumption, extra-marital relationships are not viable for women). Therefore, following the decline in divorce costs, divorce is initiated by women but not by men.

(ii) As per the reasoning in the proof of Proposition 3, the threshold value of ϵ, $\overline{\epsilon}(b, g)$, below which divorce is initiated is higher in the case of an arranged marriage compared to the case where the bride/groom marries her/his preferred partner. As per the Corollary to Proposition 3, a decline in divorce costs increases the incidence of arranged marriage among women and decreases the incidence of arranged marriage among men. Therefore, among couples who marry after the decline in divorce costs – or before the decline but with full knowledge of the forthcoming policy change – the probabily of divorce initiated by women is higher compared to those who married before the change and without any expectation of a policy change; the probability of divorce experienced by men is lower compared to those who married before the change and without any expectation of a policy change (as the reasoning in the proof of part (i) above, men do not initiative divorce themselves if $C > 0$). ■