’Will You Marry Me...in December?’
—
Tax-Induced Wedding Date Shifting and Mismatching in Long-Term Relationships*

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Abstract

We use administrative micro-level data on the full population of all 2,537,713 divorce cases in Germany over the 2006 to 2020 period to empirically show that marriages with weddings at year end last considerably shorter than does the average (median) marriage. Specifically the average (median) difference (conditional on divorce) between marriages with December weddings and marriages with weddings in all remaining months is 466.1 (534) days with overall length of marriage being 5275.7 (4542) days. We attribute this empirical observation to the German marriage tax benefit which is granted for the entire calendar year if the couple is married for at least one day therein. In response to this incentive, couples use forward shifting of the ’legal’ wedding date as a tax planning strategy to collect the marriage tax benefit for the year(s) prior to their ’counterfactual’ (i.e. in the absence of any tax benefit) date of the wedding. We theoretically model this decision and argue that, in essence, couples forego sufficient courtship time to collect the marriage tax benefit, and hence, mismatching in long-term relationships results.

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1 Introduction

Since Becker's (1973; 1974) pathbreaking articles on the theory of marriage, economists have been interested in studying the driving forces of the formation and dissolution of couples. At the latest since Alm and Whittington's series of papers starting around 1995 one key factor that has received more attention is the differential tax treatment of single and married individuals. The lack of marriage neutrality in the income tax scheme changes the combined tax liabilities of two individuals after they marry. Depending on the specifics of the tax scheme in a country the married couple may either face a 'marriage tax benefit' implying a lower combined tax liability, or a 'marriage tax penalty' implying a higher tax liability after marriage. The former as well as latter change the gains from marriage and have an influence on the formation and dissolution of couples (see Alm, Dickert-Conlin and Whittington 1999 for an overview).

In Germany, married couples profit from a marriage tax benefit. The marriage tax benefit enables married individuals to transfer tax thresholds and tax exemption limits between one another, and hence, unused excess amounts are less likely. Moreover, married couples can apply a beneficial tax rate schedule. Notably, the full annual marriage tax benefit is granted for each calender year in which the couple was married for at least one day. Given these benefits, it is empirically well established that the German marriage tax benefit impacts on the choice of wedding dates. Specifically, it creates incentives to use forward shifting of the wedding date as a tax planning strategy. However, albeit peculiar, wedding date shifting is widely viewed as a rather minor distortion to welfare. Contrary to this, we provide empirical evidence that wedding date shifting is in fact indicative of mismatching in long-term relationships (measured as lower duration of marriage).

This paper makes several contributions to the literature. First, we provide new evidence on the unintended consequences of a distortionary marriage tax benefit in Germany. So far, the literature has concentrated on analyzing the effects of distortionary income taxes (be it a marriage tax benefit or a marriage tax penalty) separately on the decision to marry and to divorce. To our knowledge we are the first who show empirically that a marriage tax benefit is associated with a mismatching of couples as measured by lower marriage duration. Second, we estimate the magnitude of these effects in a large full population dataset. Finally, our results are interesting for policy-makers who typically aim at encouraging marriage and at preventing divorce. We demonstrate that offering a marriage tax benefit is a delicate endeavor that can lead to welfare losses, if it is not designed appropriately.

The paper is organized as follows: section 2 provides a short literature review and describes the relevant institutional details of the German income tax scheme. Section 3 establishes a simple theoretical framework that shows how a marriage tax benefit can lead to hasty marriages. Section 4 discusses empirical strategy. Section 5 presents the data and section 6 shows the main results. Finally, section 7 provides an array of robustness tests before section 8 concludes the paper.

2 Literature Review and Institutional Details

2.1 Literature Review

Alm and Whittington (1995; 1999) are among the first who studied how taxes affect the probability of marriage. They use data for the US where, in contrast to Germany, historically a marriage tax penalty is applied. They find evidence that the larger the marriage tax penalty on a specific individual, the less likely this individual is to marry. Michelmore (2018) recently confirms this result for single low-income mothers. Specifically, she shows that these low-income women on average face a marriage tax penalty of USD 1,300 for the year immediately after marriage and are 2.7 percentage points less likely to marry their partners and 2.5 percentage points more likely to cohabit compared to single mothers who do not face a marriage tax penalty.

A tax system that distorts the decision to get married likely also distorts the decision to divorce. Alm and Whittington (1997a) and Dickert-Conlin (1999) present evidence for this and show that in the US couples with an economically higher benefit from separating are more likely to divorce.

The influence of the income tax scheme on the *timing* of marriage is analyzed by Sjoquist and Walker (1995), Gelardi (1996) and Alm and Whittington (1997b). All papers find for different counties a significant positive relationship between the size of the marriage penalty in a year and the probability of delaying marriage until the following year. This effect was recently confirmed by Frazier and McKeehan (2018). Fink (2020) specifically investigates the effect of marriage on the timing of marriage for Germany. His findings indicate that couples in Germany respond to the marriage tax benefit by shifting their wedding date forward.

Also the effect of tax schemes on child birth and subsequent labor force availability has been investigated. Dickert-Conlin and Chandra (1999) as well as LaLumia, Sallee and Turner (2015) reveal that the (not prorated) child-related tax benefits in the US increase the probability of a late-December birth. Moreover, Wingender and LaLumia (2017) show that these child benefits induce mothers of December born children compared to those with January born children to cut back labor supply due to the positive income effect of the child benefit. Moreover, LaLumia, Sallee and Turner (2015) document a large reporting response of self-employment income because a newborn changes the location of a household's Earned Income Tax Credit (EITC) schedule. Similarly, Gans and Leigh (2009) show that in Australia the (unexpected) introduction of a USD 3,000 "Baby Bonus" for Babies born on or after July 1*st* 2004 caused over 1,000 births to be moved backwards after the respective date. Most of the effect was due to changes in cesarean procedures and in birth inductions. Finally, not only the timing of birth has been found to be influenced by financial incentives but also the timing of death. Kopczuk and Slemrod (2003) find that changes in the US estate-tax system caused people to prepone or postpone their death in order to reduce their heirs tax liability.

2.2 Marriage Tax Benefit

The design of the German marriage tax benefit creates incentives to use forward shifting of the wedding date as a tax planning strategy. Specifically, the marriage tax benefit is granted for each calender year in which the couple was married for at least one day. The marriage tax benefit allows spouses to transfer tax thresholds and tax exemption limits between one another, and hence, unused excess amounts are less likely. Moreover, liquidity benefits can arise temporarily during the calendar year if parameters are optimized between the spouses that impact on wage withholding tax. Finally, married couples can apply a beneficial tax rate schedule.

Figure 1 shows the income tax rate schedule for Germany for the year 2020. The solid line depicts the marginal income tax rate while the dashed line depicts the average income tax rate. The marginal income tax rate for individuals is zero up to the tax exemption limit which was EUR 9,408 and then increases up to 45% for incomes higher than EUR 270,501. Due to the tax exemption limit and the increasing marginal tax rate, the German income tax scheme is clearly progressive.

[Insert Figure 1 about here]

Married couples can choose between separate and joint assessment. Joint assessment represents the default option. If couples choose the separate assessment, each spouse's yearly gross income (Y_j with $j = f, m$) is taxed according to the income tax schedule $T(Y_j)$ as illustrated in Figure 1. Abstracting from possible deductions, their common tax burden with separate taxation simply amounts to $T(Y_f)+T(Y_m)$ which equals the sum of taxes they would have paid when not married. In other words, with separate assessment there is no marriage tax benefit. Only under very rare circumstances can separate assessment be more beneficial for the married couple. This includes certain cases of losses with one spouse or of tax free income that nonetheless impacts on the tax rate of taxable income (exemption with progression). Empirically, the number of married couples with separate assessment is negligible.

If, instead, the couple opts for joint assessment, then the couple's common income tax burden is given by $2 \cdot T(0.5(Y_f + Y_m))$. So the tax rate schedule applies to half of the sum of the couples' gross income; and the tax burden for this amount is then paid twice. Since the income tax scheme is progressive, joint assessment in almost all cases comes with a lower overall tax burden. The marriage tax benefit is nil only when the marginal tax rates do not differ between spouses in separate assessment. Otherwise, the couple profits in that income is automatically shifted to a lower income tax rate.

In cases with different income of spouses, the marriage tax benefit ceteris paribus increases in the difference of spouses' income. However, the marginal increase in overall marriage tax benefits also decreases with higher overall income of the couple. The maximum tax benefit, for instance in 2020, asymptotically approaches EUR 17,080. This maximum tax benefit is obtained when one spouse earns zero and the other spouse earns EUR 541,002 (or more), i.e. when the couple first enters the bracket of the highest marginal tax rate. However, EUR 541,002 is a high income in the German income distribution. Altering the income of the earning spouse to EUR 47,700, which is the German average wage income in 2020 (Statista (2022)), the marriage tax benefit is EUR 4,475. Both amounts are arguably sufficient to alter couple's behavior towards wedding date forward shifting. Note that the amounts and rationale are similar to what has been found in prior literature on *timing* of birth of an expected child by Dickert-Conlin and Chandra (1999), LaLumia, Sallee and Turner (2015) and Gans and Leigh (2009). However, it is unlikely that either of the two amounts would be sufficient to induce couples to enter into a marriage in which the misfit between the spouses is known.

Utilization of the marriage tax benefit in year t has no impact on the tax benefit in year $t + 1$, and hence, couples do not face an intertemporal decision problem. For couples at the beginning of their marriage, the institutional framework is such that the exact wedding date in year t is irrelevant for a couple's tax burden in that year. Specifically, the full marriage tax benefit for year t is granted if the couple was married for at least one day therein. I.e. the same marriage tax benefit can be collected when the couple marries on January 1*st* in year t, and when it waits and marries on December 31*st* in year t, or any time in between - and hence shifting the wedding date within a year is irrelevant from an income tax perspective. However, postponing the wedding date from t to $t + 1$ can, of course, come with tax losses. Specifically, the couple forgoes the option for joint assessment in year t and can not collect the marriage tax benefit for that year. Acting according to the well-known saying *"so test therefore, who join forever"* by Friedrich Schiller may thus cause tax losses. Ultimately, when December 31*st* nears, couples may fear to lose the marriage tax benefit for the current year and decide to marry before the year end threshold cliff. This may distort the couple's optimal courtship time decision. We refer to this behavior as 'wedding date (forward) shifting'.

Sections 3.1 and 3.2 below show with a simple theoretical model how a hasty marriage in order to collect the marriage tax benefit can affect a couple's matching quality and thus their divorce probability.

2.3 Wedding Month Distribution

It is well investigated in the literature that couples react to the marriage tax benefit by shifting their 'legal' wedding dates forward (relative to their unobservable 'counterfactual' wedding date in the absence of tax benefits). This leads to tax avoidance as it allows these couples to collect the full marriage tax benefit for one additional year. As shown by Fink (2020), wedding date forward shifting occurs mostly into December. In this case, the relative amount of time shifted is lowest and hence the costs of shifting (i.e. foregone courtship time) are lowest. Anecdotally, it is common for couples that use wedding date shifting to have the 'legal' wedding only in a small scale setup while postponing the larger 'real' wedding celebration into the next year. It follows that the costs of inconvenience that result from wedding date shifting are low. A 'legal' wedding can be performed in the civil registry immediately on the day of application, when all documents are in order, at costs of about EUR 200.

To show that wedding date shifting occurs, we use administrative data from the National Office of Statistics on all 'legal' weddings over the period of 1991 to 2020.[1] Henceforth, we refer to this dataset as 'wedding data'. We convert the monthly number of weddings into fractions per year and report the available data in Table 1.

[Insert Table 1 about here]

We then treat the wedding data as cross-sectional, by summing the number of weddings per month over all years, and create a histogram in Panel A of Figure 2. We additionally include the median and its non-parametric binomial interpolated 95% CI for the monthly values of fraction per month over all years. As the German wedding month distribution in the absence of the marriage tax benefit is unobservable, Figure 2 also includes in Panel B the histogram for Germany's culturally similar neighbor country Austria,[2] where married couples are taxed individually since 1973 (Schratzenstaller and Wagener (2009)).

[Insert Figure 2 about here]

We report that differences between median and mean are non-significant for all months in both panels. Considered jointly, Table 1 and Panel A of Figure 2 show that the distribution of German wedding dates across all years is as expected from 'common sense', i.e. that the majority of weddings occur in summer and early fall. However, we also observe a notable peak in number of weddings in December (9.89%) compared to Austria in Panel B (4.40%). This peak is strongly indicative of wedding date shifting in Germany, particularly of wedding date forward shifting. The pattern submerges virtually identical in all individual years in our wedding data and is well investigated in the literature (for an overview of wedding date shifting in Germany see the dissertation of Scholz (2015)). Wedding date shifting is unanimously attributed by researchers to the German marriage tax benefit (see for example Fink (2020)). However, the extend of wedding date shifting is not the topic of this paper. Instead, we ask if wedding date shifting has an impact on long-term relationships.

[1] Data made available by the Federal Statistical Office and Statistical Office of the German States (data project identification code: EVAS 12611).

[2] Data provided by Statistics Austria, available at: https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bevoelkerung/eheschliessungen/index.html.

3 A Stylized Three-Period Model

3.1 The Setup

Assume the following 3-period model. A couple meets in period t. They do not yet know about their matching quality $\theta \in \{\theta_\ell, \theta_h\}$ which can be either low $\theta = \theta_\ell < 0$ or high $\theta = \theta_h > 0$. The matching quality is revealed at the beginning of period $t+1$ and $t+2$. If the matching quality is high the couple stays together. If, on the other hand, it is low it is always optimal for the couple to separate in the respective period.[3] In period $t+1$ the probability for a negative matching quality is π_1 while in period $t+2$ it is $\pi_2 < \pi_1$. In other words, the probability for a bad match decreases over time conditional the couple is married.

Denote the net income of the female partner y_f and the net income of the male partner y_m. Precisely, we define $y_j = Y_j - T(Y_j)$ for $j = f, m$. In other words, net income is the income of each spouse if they were individually taxed. Marriage (with joint taxation) comes with a tax benefit B given by:

$$B = T(Y_f) + T(Y_m) - 2 \cdot T(0.5(Y_f + Y_m)) \geq 0, \tag{1}$$

that is the difference in taxes the couple has to pay when they were individually taxed and the taxes they have to pay with joint assessment.

Each partner derives utility from consumption of a numeraire commodity x. Partners make all decisions cooperatively, that is they maximizes their common utility $u_f + u_m$ which is simply a linear function of their consumption and the matching quality, that is $u_j = x_j + \theta$. A couple's intertemporal preferences at time t are given by:

$$U_t = u_{f,t} + u_{m,t} + \sum_{\tau=t+1}^{3} \delta^{\tau-1}[u_{f,\tau} + u_{m,\tau}] \tag{2}$$

where $\delta \in [0, 1]$ reflects the degree of a couple's patience.

The timing is as follows: in period t the couple decides if they want to marry, or if they prefer to postpone marriage to the next period. In period $t+1$ the couple receives the information about their matching quality. If the couple married in period t, they either remain married, or opt for a divorce. If the couple did not marry in period t, they either get married, or separate. In case the couple opts for a divorce they have to pay the divorce costs c. These costs include the costs of a lawyer, possible costs for alimony, or psychological and stigma costs. In period $t+2$ the couple again receives a signal about the matching quality and has to decide about their marital status.

The following game tree in Figure 3 illustrates the couple's decision problem.

[Insert Figure 3 about here]

[3]Later we show what condition θ_ℓ needs to fulfill so that it is indeed optimal for the couple to separate.

3.2 Couple's Optimization Problem

The game needs to be solved backwards so that we first have to analyze a couple's optimization problem in period $t+2$.

Period $t+2$**.** Assume the couple is married, then their common utility in period $t+2$ if they observe a high matching quality and stay married is given by:

$$U_{t+2}^{M} = y_f + y_m + B + 2\theta. \tag{3}$$

The couple obtains their net incomes, the marriage benefit and each partner enjoys the matching quality. If, on the other hand, the couple receives a low matching quality they opt for a divorce and their common utility is:

$$U_{t+2}^{D} = y_f + y_m - c. \tag{4}$$

In this case the couple does not obtain the marriage benefit and has to pay the cost of divorce.

A couple will divorce if doing so gives them a larger joint utility than remaining married.[4] Thus, a divorce occurs if:

$$U_{t+2}^{D} > U_{t+2}^{M} \quad \Leftrightarrow \quad -2\theta > c + B. \tag{5}$$

which we assume to be always true for the negative matching quality, that is $-2\theta_\ell > c + B$.

Period $t+1$**.** Assume the couple obtains a good signal and is married in period $t+1$. Their discounted common utility then is:

$$U_{t+1}^{M} = y_f + y_m + B + 2\theta + \delta[\pi_2 U_{t+2}^{D} + (1-\pi_2)U_{t+2}^{M}]. \tag{6}$$

In period $t+1$ they obtain their net incomes, the marriage benefit and enjoy the good matching. In period $t+2$ the couple receives a negative signal with probability π_2 so that their utility is given by (4) while with probability $1-\pi_2$ they remain married and enjoy utility as given by (3).

If, after observing the signal, they decide to divorce their discounted common utility amounts to:

$$U_{t+1}^{D} = y_f + y_m - c + \delta[y_f + y_m]. \tag{7}$$

They have to pay the cost of divorce in the current period and they receive their net incomes in the future. Again, a divorce occurs if:

$$U_{t+1}^{D} > U_{t+1}^{M} \quad \Leftrightarrow \quad -2\theta > \frac{1-\delta\pi_2}{1+\delta(1-\pi_2)}c + B. \tag{8}$$

Note that the above inequality is true whenever (5) is true. This is intuitive since in case of a divorce in period $t+1$ the couple forgoes the marriage benefit not only in the current period but also with probability π_2 in the future period.

[4] Peters (1986) provides evidence that couples divorce if it is efficient to do so.

Now assume the couple did not marry in period t, but postponed their decision to period $t+1$. Then, after they have received the signal they decide wether to marry, or to separate. If the couple marries their utility in period $t+1$ is again given by Expression (3). In case the couple splits up, their common utility simply amounts to:

$$U_{t+1}^{S} = y_f + y_m + \delta[y_f + y_m]. \tag{9}$$

When the couple splits up the marriage tax benefit and the (negative) matching quality are lost, but unlike in the case of a divorce they do not have to pay the additional costs. A couple splits up in period $t+1$ if it is optimal to do so, that is if:

$$U_{t+1}^{S} > U_{t+1}^{M} \quad \Leftrightarrow \quad -2\theta > \frac{-\delta\pi_2}{1+\delta(1-\pi_2)}c + B. \tag{10}$$

Again, the above condition is always true when (5) is true.

Period t. Lets turn to the couple's period t decision problem. In this period the couple has not yet any information about their matching quality. First, assume the couple "tests before joining forever". If they do not marry but only cohabitate in period t their expected joint utility is given by:

$$U_t^{C} = y_f + y_m + \delta\big[\pi_1 U_{t+1}^{S} + (1-\pi_1)U_{t+1}^{M}\big]. \tag{11}$$

With probability π_1 the matching quality turns out negative and the couple splits up in period $t+1$, while with probability $1-\pi_1$ the matching quality is positive and the couple marries in period $t+1$.

Now, assume the couple "rushes into marriage" in period t, then their expected utility amounts to:

$$U_t^{M} = y_f + y_m + B + \delta\big[\pi_1 U_{t+1}^{D} + (1-\pi_1)U_{t+1}^{M}\big]. \tag{12}$$

The couple immediately obtains the marriage benefit, but with probability π_1 they are a bad matching and have to pay the costs of divorce in the following period. The couple thus rushes into marriage in period t if:

$$U_t^{M} \geq U_t^{C} \quad \Leftrightarrow \quad B \geq \delta\pi_1 c. \tag{13}$$

From the above condition we can state the following proposition:

Proposition 1 (Marriage timing) *: An early marriage is more likely*

(i) the higher the marriage tax benefit, B,

(ii) the lower δ, that is the less patient the specific couple is,

(iii) the lower the costs of divorce, c, and

(iv) the lower the probability of a bad matching quality (in the population), π_1.

Obviously, a higher marriage benefit makes an early marriage more likely since otherwise B is lost. A less patient couple values this marriage benefit more relative to the possible costs of divorce in case the matching quality turns out negative the following period. Lower expected costs of divorce also increase the profitability of an early marriage since it becomes less costly to dissolve marriage in case of bad matching.

Note that with $B = 0$ all couples, independent of their patience, would find it optimal to wait until their matching quality realizes. So only with a distortionary income tax scheme, that is with $B > 0$, some couples rush into marriage. The share π_1 of these couples turn out to be a bad match and divorce the following period. Since $\pi_1 > \pi_2$ short-term marriages are more likely for an early marriage than for a later marriage. In other words, a distortionary income tax scheme increases the number of marriages, but at the same time reduces the average length of marriage due to badly matched couples who rushed into marriage.

We ultimately formulate the following two hypotheses to test in our data:

H1: December marriages are significantly more likely to be divorced than are marriages with wedding dates in all other months.

H2: December marriages are significantly shorter than are marriages with wedding dates in all other months.

4 Empirical Strategy

For the investigation of H1 we use descriptive analyses. Most of these descriptive analyses are trivial graphical consolidations of the data while also including depictions of simple pairwise group comparison tests. We use this graphical approach because i) arguably the research question is straightforward and ii) the data can be used in obvious ways to show the effects of H1. Graphical analyses also enable us to probe for potential drivers of the effects.

For the investigation of H2, we rely on survival analysis. Specifically, our baseline covers different specifications of the following Accelerated Failure Time Model:

$$ln(t_i) = \beta_1 DecWed_i + \sum_{k=1}^{N} \mu_k \, Control_{ki} + ln(\tau_i) \tag{14}$$

where t refers to the marriage length ($LMarriage$), i.e. the number of days between the date of the legal marriage and the date of the final judgement of divorce. We assume a Weibull and alternatively a generalized gamma distribution for τ_i. As our main independent variable of interest, we include a dichotomous variable $DecWed$, which takes value one if the divorce case is a December marriage, i.e.

has a wedding in December, and zero otherwise. Consistent with H2, we expect $\beta_1 < 0$, indicating that $DecWed$ is associated with decreased $LMarriage$.

Various covariates are used as controls. Following prior research (Tzeng (1992)), we include the couple's $AgeDiff$, but divided into three groups of equal size: $LowAgeDiff$, $MediumAgeDiff$ and $HighAgeDiff$. Second, we use $Children$, which holds the number of joint children (biological or adopted) that are below the age of 18 at the date of divorce, regardless if they live in the couple's household. We inlcude $Children_1$ that equals one for couples with one child and zero otherwise and $Children_2+$ that equals one for couples with two or more children and zero otherwise. Also, we include $DifNationality$ that equals one if the nationalities of the spouses at time of divorce differ and zero otherwise, as immigrant-native couples have a higher risk for divorce according to prior research (Milewski and Kulu (2013)). Finally, we include in some model specifications fixed effects for couple's $State$ to control for regional differences such as religiousness as well as the $Decade\ of\ YearWed$ to absorb potential cohort effects.

5 Data

We use administrative family court data on the full population of divorce cases over the period of 2006 to 2020[5]. Henceforth, we refer to this dataset as 'divorce data'. In Germany, a marriage can only be divorced by family court decision, and thus, our dataset includes all possible cases of divorce in Germany. The only other possibility for a marriage to be terminated is by death of one spouse; and these cases are not included in the divorce data. Our raw data spans $YearWed$ 1942 to 2020. However, we drop 1,128 observations with $YearWed$ before 1958, since today's form of the marriage tax benefit was only introduced in 1958. We further delete 7 observations where the gender of spouse 1 (spouse 2) is unequal male (female), as the gender entry divers was only introduced in 2018, and we drop 853 same-sex marriages as these have only been permitted in Germany since 2017. Our final sample consits of 2,537,713 divorced marriages.

We have available the exact date of legal wedding, the exact date of legal divorce and the exact date of birth of the two spouses. We use these variables to compute $LMarriage$ and $DecWed$. Finally, we take all remaining variables presented in section 4 directly from the divorce data or calculate them based on the divorce data. The divorce data is reported directly by the civil registry or the family court, and hence, self reporting effects cannot occur.

We point out that the divorce data does not have panel structure. Nonetheless, we do have data available for multiple years with the time variable being the year of the court decision. This data naturally includes also a wide range of years of wedding dates $YearWed$. We are unable to merge financial data and the wedding data to individual court cases in the divorce data because of legal limitations in

[5]Data made available by the Federal Statistical Office and Statistical Office of the German States (data project identification code: EVAS 12631).

data usage. We are also unable to merge court cases across individual spouses. Hence, it is possible that we unknowingly observe multiple divorces of individual spouses in our data. Finally, we point out that all our results in the divorce data are naturally conditional on divorce.

We show in Table 2 descriptive statistics of December marriages (Panel A), jointly for all marriages between January and November (Panel B) and jointly for all marriages (Panel C).

[Insert Table 2 about here]

We observe that roughly 9.5% of weddings in the divorce data occur in December. We also find that - without including any covariates - the average (median) difference between December marriages and marriages with weddings in all remaining months is 466.1 (534) days with overall $LMarriage$ on average (median) being 5275.7 (4542) days. Already this naive descriptive investigation indicates that differences in $LMarriage$ might be substantial between wedding months. Performing a two-tailed t-test, we find that the differences in mean of $LMarriage$ across Panel A and Panel B are statistically significant at the 1 percent level.

We also look at the average (median) $LMarriage$ separately per wedding month (untabulated) and report that the average (median) lengths in all other months range from 5116.1 (4263) days to 5543.3 (4923) days. Thus, December marriages still have the lowest average (median) $LMarriage$ when the remaining months are analyzed separately.

We also note that mean (median) age of the spouses, i.e. $MAgeWed$ and $FAgeWed$, is considerably larger in December marriages relative to marriages with weddings in all remaining months. Corresponding differences are naturally also found with $MAgeDiv$ and $FAgeDiv$. The distribution of all the age related variables appears symmetric around the mean (median), albeit slightly less so, i.e. with mean greater than median, for age at wedding than for age at divorce. Given that our divorce data is conditional on divorce, this implies that spouses in the right tail of the distribution of $MAgeDiv$ or $FAgeDiv$ are more likely to have a lower $LMarriage$. Also the absolute age difference of the spouses ($AgeDiff$), is 142.1 days larger in December marriages relative to marriages with weddings in all remaining months. Over all months $AgeDiff$ equals 1713.5 days. Finally, the variables $Children$, $MForeign$ and $FForeign$ show no stark differences conditional on wedding month.

For further descriptive insight into the data, we create histograms of $LMarriage$ conditional on wedding months in Figure 4. Each bin covers 1095 days, i.e. approximately three years.

[Insert Figure 4 about here]

We observe in Figure 4 that the distributions are right skewed and of rather similar shape for all wedding months. However, December marriages have a higher maximum with a relatively lower right tail compared to marriages in all other months. We also note differences in sample size per wedding month which speaks to wedding date forward shifting as already discussed with reference to the wedding data in section 2.3. Also, it seems that the distributions for all wedding months have something that might represent a ”let's try again belly” around $LMarriage$ of about 7500 days.

6 Results

6.1 Probability of Divorce Conditional on Wedding Month

To investigate our first hypothesis H1, we use the wedding data as described in section 2.3 to compute fractions of weddings per wedding month. Correspondingly, we also compute fractions of weddings per wedding month for the divorce data. We then plot the median of fraction of weddings in a given wedding month over all years in the wedding data against its corresponding value in the divorce data. The idea of this graphical analysis is to compare the number of all weddings (observed in the wedding data) with the number of already divorced marriages (observed in the divorce data). We treat data as cross sectional and do not weigh for number of weddings or divorces in any given year. Figure 5 shows the results. A dot above (below) the diagonal indicates that weddings in the respective months are observed more (less) often in the divorce data set than in the wedding data, and hence, that divorces are more (less) probable for this wedding month.

[Insert Figure 5 about here]

For the months January, February and March, we observe a statistically significant higher fraction of marriages in the divorce data than in the wedding data. For the month September we observe a statistically significant lower fraction of marriages in the divorce data than in the wedding data. Hence, we report that marriages with the former (latter) wedding month(s) are significantly more (less) likely to be divorced. We do not observe a statistically significant result for the other months.

Specifically with regard to H1, we report that the dot for December marriages is located slightly below the diagonal, indicating that the fraction of December marriages among the divorced marriages is lower than among all marriages, but this is not statistically significant. Hence, the data does not speak to the directional hypotheses H1. Given the large sample size the data even provides some weak indication that the Null of H1 is true.

6.2 Length of Marriage Conditional on Wedding Month

6.2.1 Graphical Analysis

We begin our investigation of H2 using graphical analyses of the divorce data.

First, we show descriptive Kaplan-Meier survival curves separately by wedding month in Figure 6.

[Insert Figure 6 about here]

We observe that the survival curve for December marriages is steeper than the survival curves for marriages in all other months. Consistent with H2, this indicates that December marriages have shorter $LMarriage$, i.e. are divorced faster, than marriages with wedding in all other months. Performing a log-rank test (Harrington and Fleming (1982)), we report that the difference in survival between December marriages and marriages with weddings in all other months is statistically significant at the 1 percent level.

Investigating the distribution further, we separate our entire dataset into 3-day intervals conditional on wedding date within year. We plot the Median (and its 95% CI) of each 3-day interval in Figure 7, vertically standardized to the unconditional median (dashed horizontal line), i.e. the median over all observations regardless of wedding date.

[Insert Figure 7 about here]

We observe that $LMarriage$ fluctuates with large dispersion around the unconditional median. However, specifically for December marriages, we observe that observations are significantly lower than the unconditional median. Considering particularly observations near the year end threshold, we observe that of the 20 last observations before year end, 19 are significantly negative and none are significantly positive. This is indicative of wedding date forward shifting not only into December but even into November of the previous year(s). Moreover, medians for adjacent 3-day intervals at year end are relatively close to one another, indicating systematic effects. Replicating Figure 7 with the 25% quartile (Figure 11) and the 75% quartile (Figure 12) instead of the median generates similar patterns.

6.2.2 Regression Analysis

We report results of our baseline regression in Table 3. These include different specifications of control variables and fixed effects. Positive (negative) coefficient values indicate a delay (acceleration) of time until divorce, i.e. are associated with increased (decreased) $LMarriage$. We recall that we are particularly interested in the dichotomous variable $DecWed$ which indicates marriages with weddings that occurred in December.

[Insert Table 3 about here]

Considering first columns (1) to (5) of Table 3 where we employ a Weibull distribution, we find for the most naive specification in column (1) that $LMarriage$ for $DecWed$ couples is 8.4% shorter compared with couples with weddings in all other months.[6] As we include additional control variables we observe that effects for $DecWed$ decrease in absolute economic magnitude, but remain statistically significant. In terms of economic magnitude, in the most extensive specification in column (5) we find that $DecWed$ is associated with a 2.6% shorter $LMarriage$.

Employing the generalized gamma distribution in columns (6) to (10), the results across all model specifications are almost identical, both in terms of the direction as well as the economic magnitude.

Overall, our results indicate that December marriages are significantly shorter than are marriages with wedding dates in all other months. We thus confirm H2.

7 Robustness and Caveats

7.1 Cox Proportional Hazard Model

To show the robustness of our results in Section 6.2.2 based on Accelerated Failure Time Models, we use different specifications of the following Cox proportional hazard model (Cox (1972)):

$$h_i(t) = h_0(t) \cdot exp(\beta_1 DecWed_i + \sum_{k=1}^{N} \mu_k \, Control_{ki}) \,, \tag{15}$$

where t refers to $LMarriage$ and $h_0(t)$ to the unspecified baseline hazard when all independent variables are equal to zero. The Cox proportional hazard model is more robust than the Accelerated Failure Time Models previously applied as the baseline hazard $h_0(t)$ remains unspecified. However, the results are reported in the proportional hazard metric and therefore the effect of the covariates on $LMarriage$ cannot be interpreted directly. The results are reported as hazard ratios in Table 4.

[Insert Table 4 about here]

[6] The percent delay result in column (1) is estimated as follows: 100(exp(-0.0882)-1).

Consistent with H2, we find statistically significant hazard ratios greater than one for $DecWed$ for all Columns (1) to (5) indicating that $DecWed$ is associated with an increased hazard for divorce and decreased $LMarriage$.[7]

7.2 Divorce Month Distribution

While wedding date (forward) shifting has been well investigated, couples might also consider divorce date (backward) shifting as a tax planning strategy. The full marriage tax benefit can be obtained for the calendar year of divorce if the couple did not live permanently separated for at least one day therein. Hence, delaying the divorce until the next year enables utilization of the marriage tax benefit for one more year. However, couples are arguably less likely to coordinate tax planning during divorce proceedings. Moreover, timing of divorce depends on court date availability and on the length of a potential cool off period before divorce proceedings can be initiated. Figure 8 shows that the unconditional divorce date distribution is almost perfectly uniform over all calendar month, with fluctuation being driven only by the average number of business days (i.e. court days) per month.

[Insert Figure 8 about here]

7.3 December Marriage Couples in the Wedding Data

We use the wedding data (as described in section 2.3) to study in more detail the full population of December marriage couples.

First, we have a look at the descriptive statistics of the wedding data and find that December marriage couples are, on average, older, have a 112.2 days larger $AgeDiff$ and already have a higher number of $Children$ at the time of the wedding, compared to couples with weddings in the remaining months.

Second, we compare the wedding month distribution for different subgroups in Figure 9.

[Insert Figure 9 about here]

In general, the fraction of December weddings is much higher for weddings in West Germany (Panel A) than in East Germany (Panel B). This is not surprising since the gender wage gap is remarkable larger in West Germany than in East Germany, (20% vs. 6% in 2020, National Office of Statistics (2022)) and thus

[7]For example, the hazard ratio for $DecWed$ of 1.1448 in column (1) indicates that without further controls, the hazard rate of having a divorce is 14.48% higher for December marriages compared to the hazard rate of marriages in all other months.

also the marriage tax benefit. The high fraction of December weddings of couples in West Germany seems to be driven by couples who already have joint minor children at the time of the wedding. In East Germany, however, there is almost no difference in the fraction of December weddings of couples with joint minor children and without joint minor children. This can be attributed to the fact that parenthood has a much stronger and longer-lasting effect on the extent of mothers' participation in the labor force, and therefore also on income differences between spouses, in West Germany than in East Germany (WSI (2020)).

It could be concluded from this analysis that the group of December marriage couples might be divided roughly into two subgroups: On the one hand, there may be couples that rush into marriage and due to the foregone courtship time, they did not realize before marriage that their matching quality is low. This subgroup of December marriages is likely to be associated with a higher divorce probability and a shorter marriage lengths. On the other hand, there seem to be couples that (also) have high tax incentives to marry, e.g. couples from West Germany with children, but who wanted to get married at some point in any case. The latter are expected to have a high matching quality, resulting in relative stable and (longer) lasting marriages. We assume that the latter subgroup is underrepresented in the divorce data, which could be the reason that we did not find support for our first hypothesis H1 that December marriages are significantly more likely to be divorced than are marriages with wedding dates in all other months.

7.4 Remaining Caveats

We argue that couples shift their 'legal' wedding date forward from $t+1$ into the last months of t to collect one more year of the marriage tax benefit. However, shifting into the later months of $t+1$ can also occur from earlier months in that same year for the reason that couples have no tax related costs from such wedding date backward shifting if the wedding date does not surpass the year end threshold. Couples that use wedding date backward shifting might also be systematically different from those that don't. We are ultimately unable to distinguish between wedding date backward shifting and wedding date forward shifting.

We observe the date of the 'legal' wedding, which can be performed at negligible costs. However, the date of the 'real' wedding is unobservable. In an ideal setting, we would like to use variation in costs of 'legal' wedding or in the difference between 'real' and 'legal' wedding as proxies for the costs of using wedding date shifting.

8 Conclusion

We show that December marriages last considerably shorter than does the average (median) marriage. Specifically the average (median) difference (conditional on divorce) between December marriages and marriages with weddings in all remaining months is 466.1 (534) days with overall length of marriage being 5275.5

(4542) days. When controlling for potential confounders, we find that December marriages are associated with decreased marriage lengths, compared to marriages in all other months.

We attribute this empirical observation to the German marriage tax benefit which is granted for the entire calendar year if the couple is married for at least one day therein. We argue that this marriage tax benefit creates incentives for couples to marry prematurely, i.e. to forego sufficient courtship time in exchange for the marriage tax benefit of one additional year. Our results indicate that wedding date shifting occurs particularly into December, i.e. that couples feel pressured to marry when they see the year end threshold cliff approaching.

One policy advice that derives from our analysis could be that marriage tax benefits should not have a year end threshold cliff. Having such a stark incentive induces couples to rush into marriage to avoid foregoing an entire year of marriage tax benefit. If the marriage tax benefit was instead granted, for instance, pro rata for each month in the year of wedding, such an institutional setup would provide a much smoother incentive scheme. Ultimately, an improved institutional setting would lead to less tax-induced wedding date shifting, and thus, to less mismatching in long-term relationships.

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A Tables

		Fraction of Weddings (Percent)											
Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1991	433450	3.13	3.91	6.46	6.52	14.79	10.01	9.61	12.46	10.70	8.63	5.59	8.19
1992	440135	3.23	4.23	5.85	7.79	12.06	11.13	11.24	11.14	10.84	8.60	5.47	8.42
1993	437149	2.99	3.77	5.85	7.29	12.79	10.97	11.20	11.28	11.23	8.27	5.34	9.00
1994	434617	3.05	3.76	6.47	6.58	13.44	11.12	10.89	11.26	12.14	6.88	5.28	9.12
1995	430534	3.07	3.66	6.32	6.45	13.73	12.70	9.99	11.21	11.65	7.32	4.91	8.99
1996	427295	2.75	3.82	5.92	6.26	13.70	11.45	9.90	12.80	10.34	8.35	5.55	9.15
1997	422774	3.30	3.97	5.28	6.88	13.25	10.65	11.20	12.77	9.89	8.45	5.14	9.19
1998	417417	3.12	3.79	5.32	7.26	11.61	9.95	12.10	12.70	10.31	8.55	5.50	9.80
1999	430672	2.90	3.63	5.40	6.53	11.23	9.80	11.09	10.86	15.59	7.78	5.38	9.80
2000	418553	2.75	5.13	5.52	6.20	11.63	11.99	10.58	11.77	11.34	7.47	5.23	10.41
2001	389582	2.98	3.83	5.71	6.37	11.13	11.64	9.71	12.79	9.69	7.79	6.61	11.77
2002	391961	2.61	6.10	5.32	5.93	12.72	10.23	9.85	13.11	9.33	8.25	5.76	10.79
2003	382911	2.94	3.87	6.05	6.21	11.99	10.66	10.19	13.06	9.78	8.55	5.45	11.26
2004	395992	2.65	3.64	4.70	8.15	10.89	10.12	11.38	11.12	10.02	8.45	5.91	12.96
2005	388451	2.92	3.55	4.77	5.84	14.69	9.61	11.30	11.53	11.58	7.05	5.35	11.80
2006	373680	2.43	3.26	5.08	5.73	10.48	14.39	10.42	12.07	11.69	7.66	5.22	11.56
2007	368922	2.26	3.39	5.19	5.48	10.00	11.31	15.66	12.40	10.46	7.75	5.69	10.42
2008	377055	2.14	3.83	4.47	5.79	11.61	9.83	9.93	18.45	9.58	8.21	5.18	10.96
2009	378438	2.21	3.37	4.46	6.46	11.55	10.78	11.70	13.03	12.53	8.31	5.12	10.47
2010	382047	2.37	3.15	4.59	6.37	11.73	10.73	13.12	12.48	10.54	10.29	4.98	9.65
2011	377816	2.30	3.21	4.08	6.54	10.42	12.40	13.18	12.06	11.42	7.32	7.34	9.73
2012	305664	2.13	3.31	4.65	6.28	11.49	12.79	11.37	13.53	10.63	7.51	4.96	11.36
2013	293758	2.09	2.88	5.37	5.86	12.53	11.43	11.84	14.49	10.96	8.11	4.90	9.55
2014	385952	2.30	3.54	4.08	7.53	11.47	11.51	11.50	14.46	10.46	8.49	5.12	9.54
2015	400115	2.36	3.17	4.50	6.37	13.36	10.68	12.07	12.99	10.74	9.00	5.22	9.55
2016	410421	2.38	3.22	4.40	6.78	10.84	12.56	12.67	12.19	12.06	8.19	5.17	9.54
2017	407461	2.35	3.08	4.87	6.14	10.47	11.68	14.45	11.99	12.33	8.14	5.37	9.12
2018	416561	2.48	3.13	4.81	6.31	10.90	11.91	10.93	15.74	11.07	8.30	5.71	8.71
2019	402298	2.52	3.36	4.83	6.54	11.65	11.61	11.00	12.85	12.37	9.03	5.84	8.39
2020	363833	2.90	5.73	4.78	4.56	8.88	10.69	11.72	13.29	11.84	11.39	5.44	8.79

'Year' shows the year of the wedding. 'Total' shows the total number of weddings in the respective year. Months 'Jan' to 'Dec' show the fraction of weddings per month in the respective year (in percent).

Table 1: Wedding Month Distribution per Wedding Year (Wedding Data)

	N	Mean	StDev	p5	p10	p25	p50	p75	p90	p95
Panel A: December										
LMarriage	240213	4853.7	3238.9	1016	1424	2349	4065	6685	9417	11198
MAgeWed	240213	11913.6	3201.1	7801	8338	9558	11322	13651	16303	18087
FAgeWed	240213	10869.8	2984.6	7072	7529	8636	10329	12498	14960	16641
MAgeDiv	240213	16767.3	3749.0	10887	11945	14077	16651	19169	21619	23316
FAgeDiv	240213	15723.5	3667.5	9988	10948	13015	15659	18147	20432	21951
AgeDiff	240213	1842.2	1793.8	103	216	581	1317	2516	4147	5413
Children	240213	0.817	0.977	0	0	0	1	1	2	3
DifNationalities	240213	0.130	0.336	0	0	0	0	0	1	1
Panel B: January - November										
LMarriage	2297500	5319.8	3460.7	1020	1461	2497	4599	7553	10181	11821
MAgeWed	2297500	11208.8	2930.0	7679	8135	9131	10592	12592	15155	17014
FAgeWed	2297500	10241.6	2732.0	6988	7386	8288	9651	11497	13947	15730
MAgeDiv	2297500	16528.6	3670.3	10768	11771	13871	16450	18910	21219	22807
FAgeDiv	2297500	15561.4	3605.0	9932	10858	12866	15514	17978	20163	21623
AgeDiff	2297500	1700.1	1700.6	94	196	530	1201	2291	3818	5062
Children	2297500	0.795	0.968	0	0	0	0	1	2	2
DifNationalities	2297500	0.126	0.332	0	0	0	0	0	1	1
Panel C: All Months										
LMarriage	2537713	5275.7	3443.1	1020	1457	2482	4542	7477	10120	11773
MAgeWed	2537713	11275.5	2963.9	7687	8151	9161	10652	12697	15287	17143
FAgeWed	2537713	10301.0	2763.0	6994	7398	8315	9707	11596	14066	15839
MAgeDiv	2537713	16551.2	3678.5	10779	11786	13890	16469	18934	21256	22857
FAgeDiv	2537713	15576.8	3611.3	9937	10866	12880	15527	17994	20188	21655
AgeDiff	2537713	1713.5	1710.1	94	198	534	1211	2312	3851	5098
Children	2537713	0.797	0.969	0	0	0	0	1	2	2
DifNationalities	2537713	0.126	0.332	0	0	0	0	0	1	1

Table 2: Descriptives (Divorce Data)

	Weibull					*Generalized Gamma*				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
DecWed	-0.0882 ***	-0.0711 ***	-0.0274 ***	-0.0687 ***	-0.0268 ***	-0.0910 ***	-0.0661 ***	-0.0273 ***	-0.0645 ***	-0.0266 ***
	(-65.43)	(-55.44)	(-35.25)	(-53.48)	(-34.50)	(-64.51)	(-52.49)	(-34.64)	(-51.15)	(-33.79)
MediumAgeDiff		-0.0297 ***	-0.0055 ***	-0.0296 ***	-0.0057 ***		-0.0268 ***	-0.0056 ***	-0.0269 ***	-0.0057 ***
		(-35.70)	(-10.61)	(-35.45)	(-10.89)		(-33.68)	(-10.51)	(-33.65)	(-10.75)
HighAgeDiff		-0.1906 ***	-0.0267 ***	-0.1898 ***	-0.0268 ***		-0.1788 ***	-0.0266 ***	-0.1787 ***	-0.0266 ***
		(-214.48)	(-47.81)	(-213.21)	(-47.85)		(-199.53)	(-47.08)	(-199.23)	(-47.08)
DifNationalities		-0.2891 ***	-0.0653 ***	-0.2910 ***	-0.0673 ***		-0.2688 ***	-0.0675 ***	-0.2714 ***	-0.0695 ***
		(-230.65)	(-84.30)	(-228.98)	(-85.74)		(-202.83)	(-86.66)	(-202.29)	(-88.11)
$Children_1$		-0.2498 ***	0.0133 †††	-0.2492 ***	0.0132 †††		-0.2712 ***	0.0198 †††	-0.2702 ***	0.0197 †††
		(-284.65)	(22.81)	(-282.74)	(22.57)		(-284.02)	(32.41)	(-279.85)	(32.17)
$Children_{2+}$		-0.2130 ***	0.0766 †††	-0.2106 ***	0.0766 †††		-0.2571 ***	0.0887 †††	-0.2538 ***	0.0888 †††
		(-266.67)	(127.13)	(-259.02)	(126.84)		(-216.68)	(131.94)	(-208.68)	(131.63)
Cons	8.6904 †††	8.9040 †††	9.7201 †††	8.8672 †††	9.7213 †††	8.6181 †††	8.9752 †††	9.7174 †††	8.9379 †††	9.7185 †††
	(2.0e+04)	(1.2e+04)	(1.2e+04)	(4571.03)	(7129.77)	(1.1e+04)	(1.2e+04)	(1.2e+04)	(3838.09)	(7078.44)
FE Included										
State	NO	NO	NO	YES	YES	NO	NO	NO	YES	YES
Decade of YearWed	NO	NO	YES	NO	YES	NO	NO	YES	NO	YES
N	2537713	2537713	2537713	2537713	2537713	2537713	2537713	2537713	2537713	2537713
AIC	5596434	5383331	2567168	5380349	2565455	5584891	5376578	2562628	5374112	2560918

Notes: In columns (1) through (5), we employ a Weibull distribution, whereas in columns (6) through (10) we employ a generalized gamma distribution. Coefficients are reported in accelerated failure time form. The z-statistics based on robust standard errors are in parentheses. Coefficients smaller than 0 are associated with decreased $LMarriage$, * p<0.1, ** p<0.05, *** p<0.01. Coefficients greater than 0 are associated with increased $LMarriage$, † p<0.1, †† p<0.05, ††† p<0.01.

Table 3: Accelerated Failure Time Regressions

	Cox Proportional Hazard				
	(1)	(2)	(3)	(4)	(5)
DecWed	1.1448 ***	1.1239 ***	1.0966 ***	1.1195 ***	1.0954 ***
	(60.41)	(53.08)	(39.47)	(51.20)	(38.92)
MediumAgeDiff		1.0513 ***	1.0216 ***	1.0510 ***	1.0221 ***
		(34.36)	(12.79)	(34.10)	(13.11)
HighAgeDiff		1.3794 ***	1.1058 ***	1.3777 ***	1.1060 ***
		(207.66)	(58.53)	(206.46)	(58.60)
DifNationalities		1.6135 ***	1.2035 ***	1.6186 ***	1.2105 ***
		(225.44)	(83.03)	(223.57)	(84.33)
Children_1		1.5877 ***	1.0770 ***	1.5865 ***	1.0777 ***
		(295.43)	(42.57)	(293.73)	(42.90)
Children_{2+}		1.5055 ***	0.9429 †††	1.4999 ***	0.9432 †††
		(280.28)	(-33.01)	(273.85)	(-32.70)
FE Included					
State	NO	NO	NO	YES	YES
Decade of YearWed	NO	NO	YES	NO	YES
N	2537713	2537713	2537713	2537713	2537713
AIC	6.98e+07	6.95e+07	6.64e+07	6.95e+07	6.64e+07

Notes: We employ the Cox Proportional Hazard Model. This table contains the hazard ratios. The z-statistics based on robust standard errors are in parentheses. Hazard ratios greater than 1 are associated with increased hazard for divorce and decreased $LMarriage$, * p<0.1, ** p<0.05, *** p<0.01. Hazard ratios smaller than 1 are associated with decreased hazard for divorce and increased $LMarriage$, † p<0.1, †† p<0.05, ††† p<0.01.

Table 4: Cox Proportional Hazard Regressions

B Figures

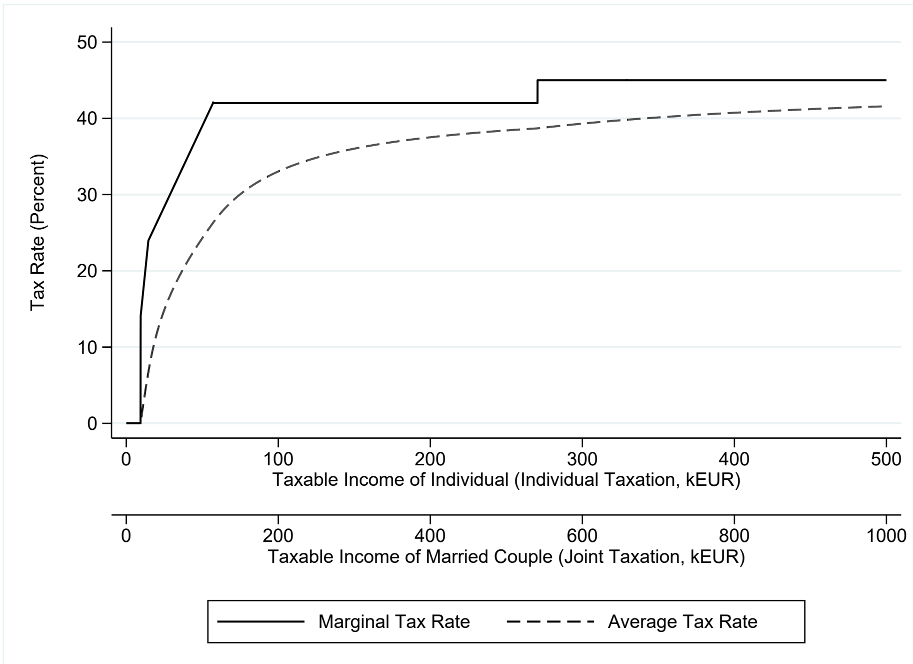

Figure 1: Tax Rate Schedule for Individual Taxation vs. Joint Taxation for Year 2020

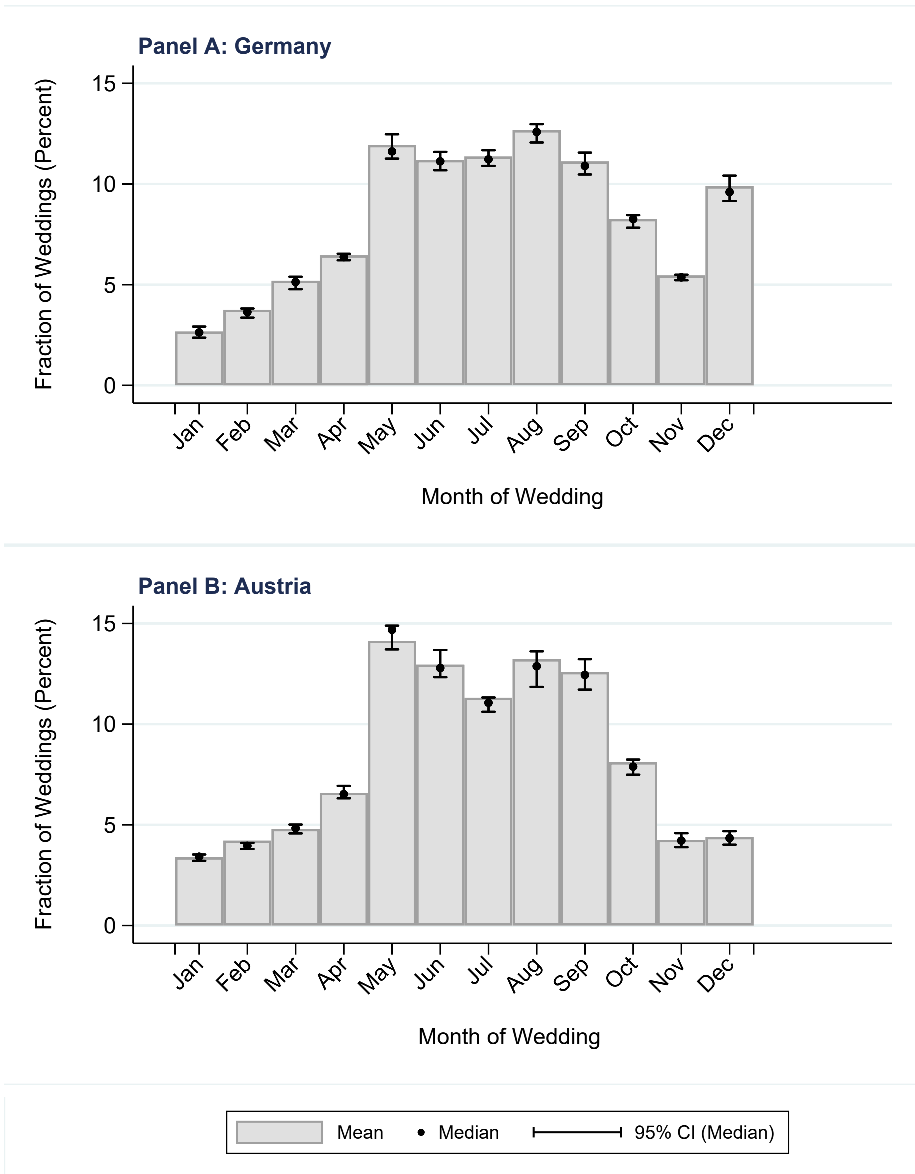

Figure 2: Wedding Month Distribution for Germany and Austria

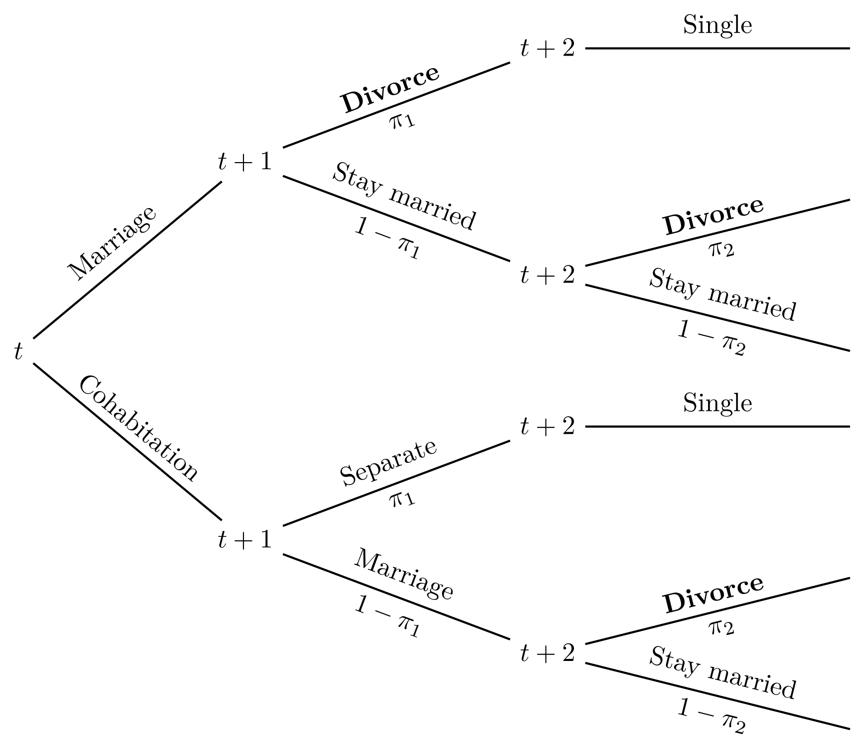

Figure 3: Couple's Decision Problem as Game Tree

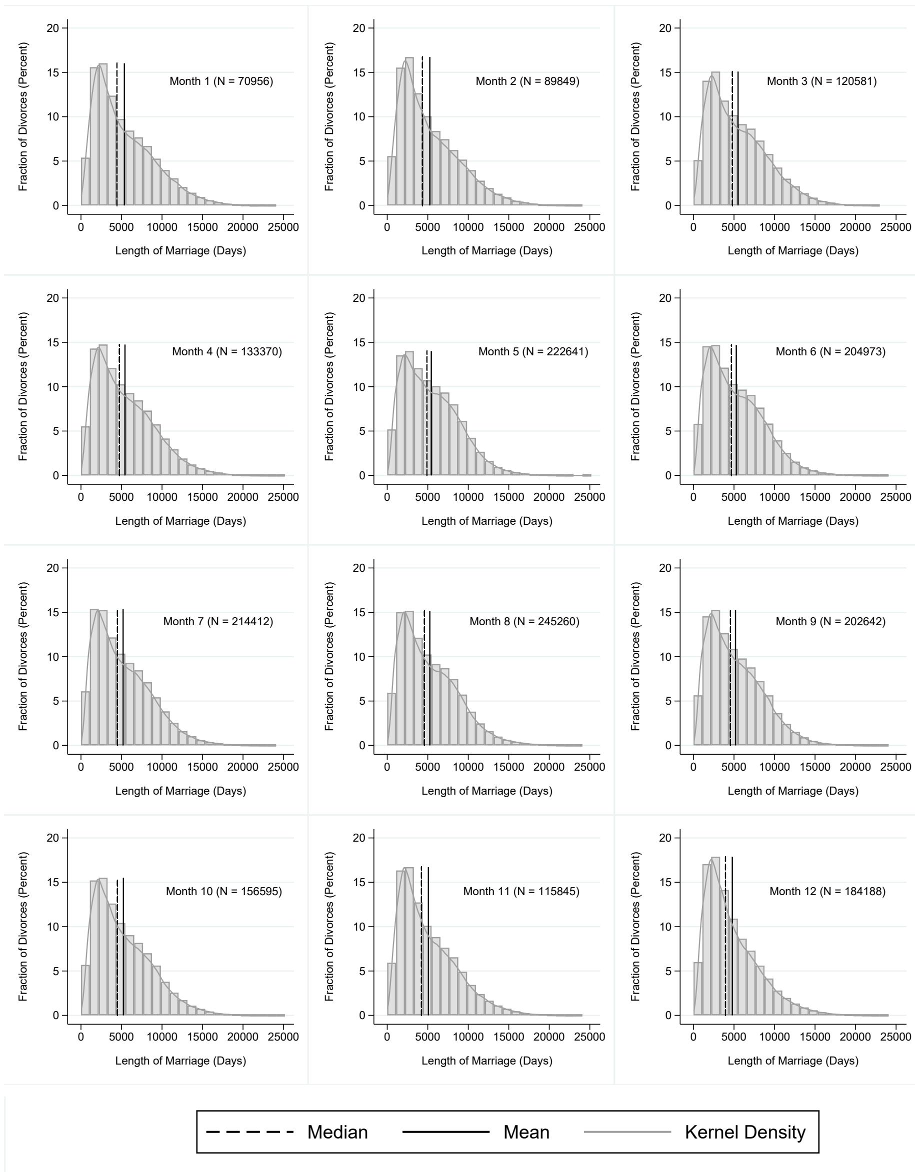

Figure 4: Distribution of $LMarriage$ Conditional on Wedding Month

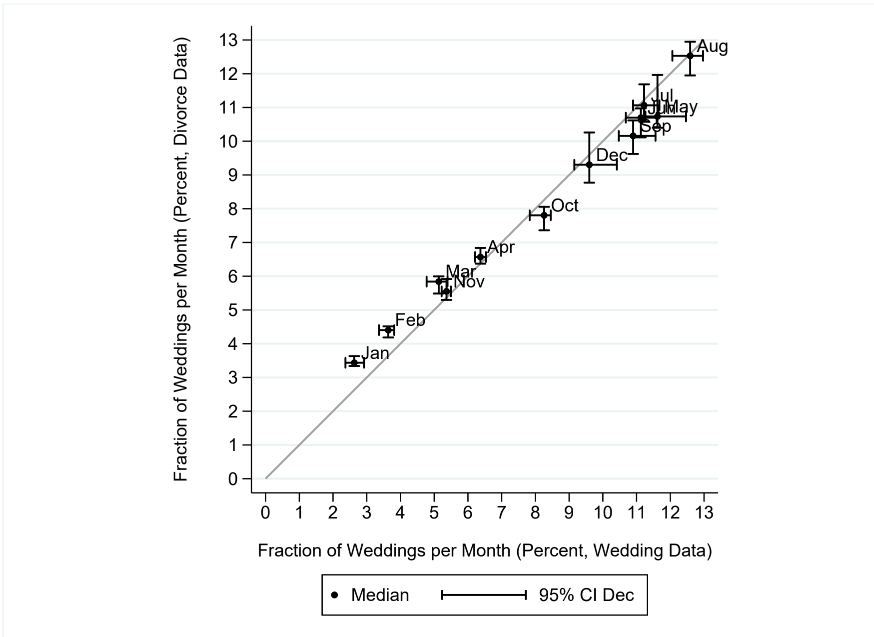

Figure 5: Median Scatter Plot of Fraction of Weddings Conditional on Wedding Month (Wedding Data vs. Divorce Data)

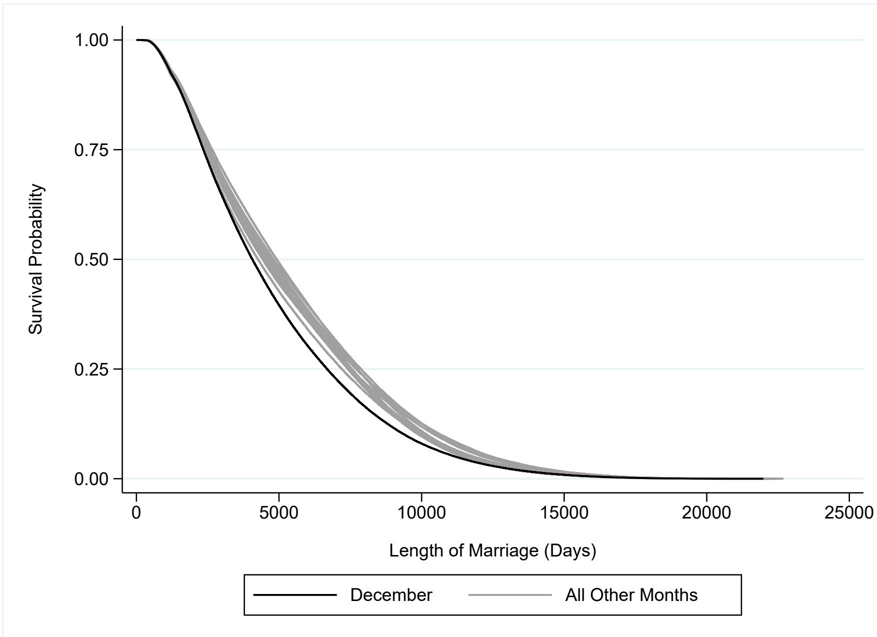

Figure 6: Kaplan-Meier Survival Curves by Wedding Month

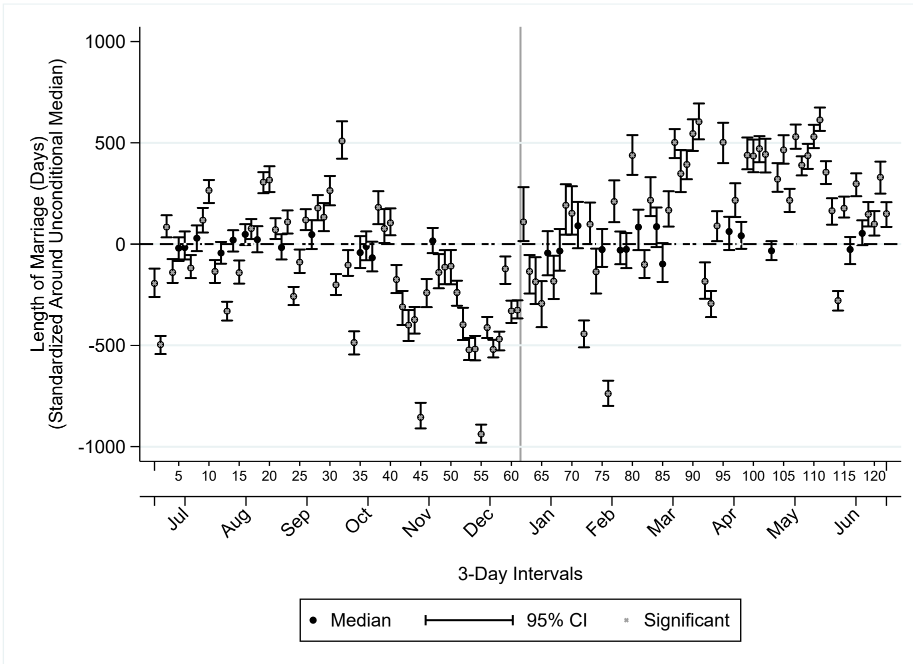

Figure 7: Median of $LMarriage$ Over 3-Day Wedding Date Intervals

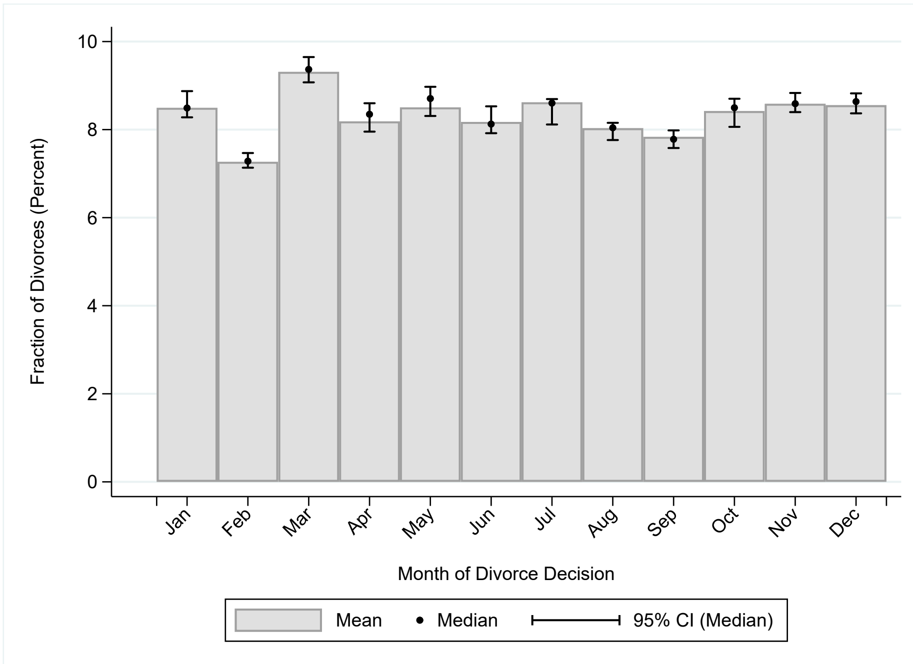

Figure 8: Divorce Month Distribution

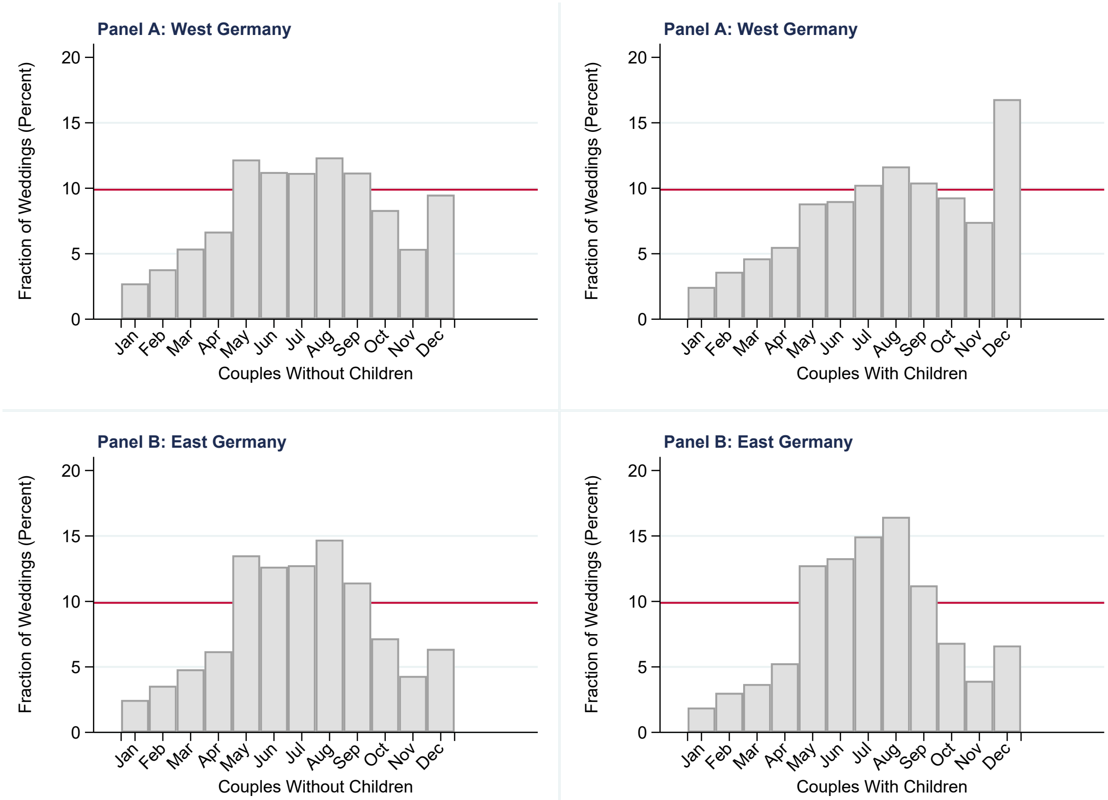

Figure 9: Wedding Month Distribution Separately for Couples from West Germany (Panel A) and East Germany (Panel B) as well as Without Children (Column 1) and With Children (Column 2). The red horizontal line indicates the overall mean fraction of December weddings in the wedding data of 9.89%.

C OnlineAppendix

Below we show alternative graphical analyses for a more in-depth documentation of the data and results.

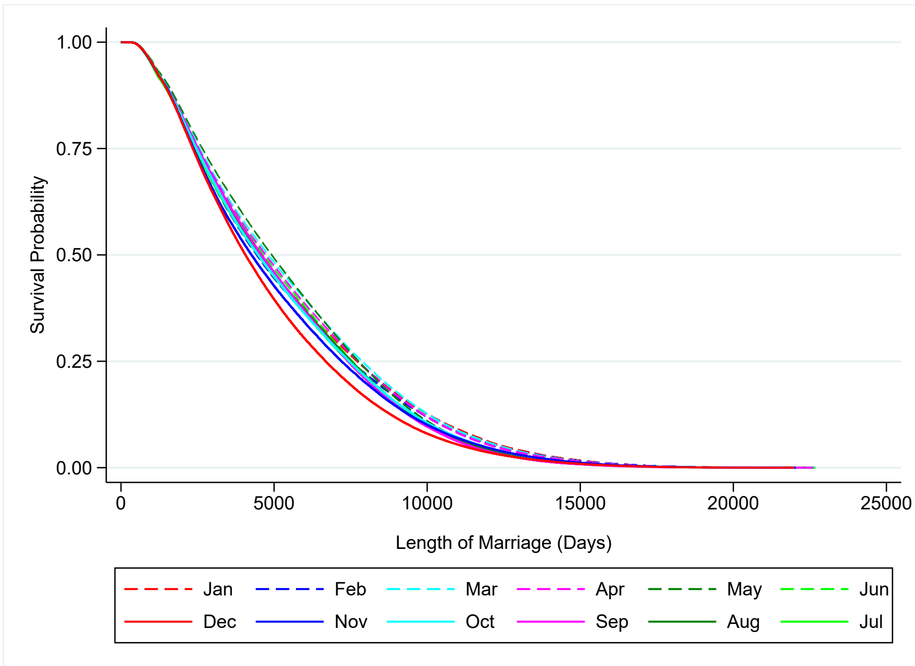

Figure 10: Replication of Figure 6

Figure 10 replicates Figure 6 with color-coding of Kaplan-Meier survival curves per wedding month.

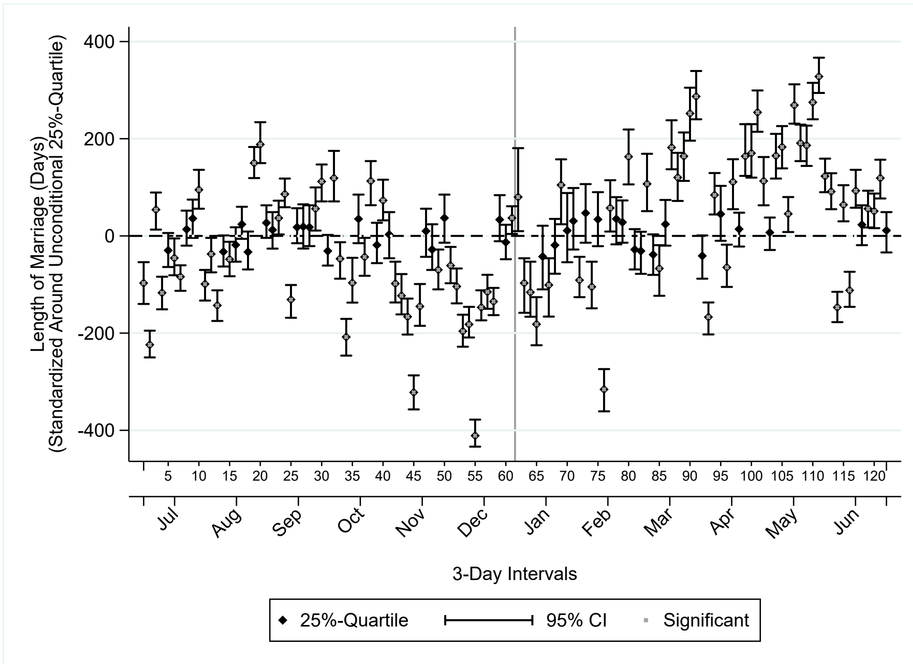

Figure 11: Replication of Figure 7 for the 25% Quartile

Figure 11 replicates Figure 7 for the 25% quartile. We observe that general patterns of distribution around the unconditional 25% quartile (dashed horizontal line), i.e. particularly December marriages (and to some extent November marriages) have a significantly lower 25% quartile than marriages in all other wedding months. However, we note that the y-axis range is smaller than in Figure 7, indicating that difference between months of wedding are relatively less pronounced in the 25% quartile.

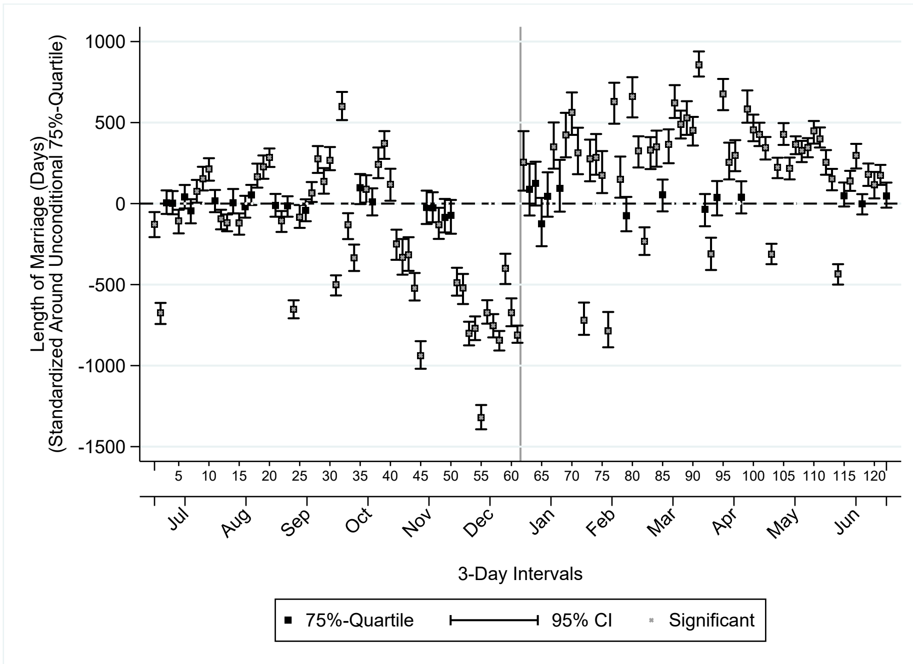

Figure 12: Replication of Figure 7 for the 75% Quartile

Figure 12 replicates Figure 7 for the 75% quartile. We observe that general patterns of distribution around the unconditional 75% quartile (dashed horizontal line), i.e. particularly December marriages (and to some extent November marriages) have a significantly lower 75% quartile than marriages in all other wedding months. However, we note that the y-axis range is larger than in Figure 7, indicating that difference between months of wedding are relatively more pronounced in the 75% quartile.