

Demographics traits of people who increase divorce risk after the abolishment of mandatory legal separation*

Peter Fallesen (pf@rff.dk)
Stockholm University
ROCKWOOL Foundation

Matthew Lindquist provided for valuable comments. The work received financial support from the Rockwool Foundation. The usual disclaimers apply.

ABSTRACT

Most countries have mandatory periods of legal separation that couples must undergo before they can effectuate a divorce. Legal separation periods allow couples a grace-period before their final divorce decision during which they may reconcile. In this paper, we study what characterized couples who increased divorce risk after Denmark abolished legal separation periods for uncontested divorces. A 2013 reform abolished a previously existing six-month mandatory legal separation period. Using administrative population data for all married and divorced couples in Denmark 2011-2014, we use methodological framework derived from instrumental variable models to identify the average characteristics of couples who were induced to divorce by the reform. The reform increased divorce risk heterogeneously. Couples who divorced because of the reform were less likely to have college degrees and more likely to marry young compared to the general population of ever-married couples.

Keywords: administrative data, divorce, legal separation, marriage policy

INTRODUCTION

Divorce is a life-altering event that causes individuals to face new economic, social, and emotional challenges (Amato 2000; Leopold 2018; Leopold and Kalmijn 2016; Mcmanus and Diprete 2013; Smock, Manning, and Gupta 1999). Because of the emotional and heated nature of divorce decisions, most Western countries have mandatory periods of legal separation that couples undergo before they can finalize their divorces (see Moore 2016 for overview). The periods serve two main purposes. First, the separation period allows divorcing partners time to sort out their economic and practical arrangements surrounding the termination of their joint life. Second, the period allows for the cooling of tempers and the settling of emotions, wherein couples may solve the conflicts that created the want for a divorce. In such cases, a mandatory period of legal separation can keep couples together who otherwise would have divorced in the heat of the moment. Yet, we know little about what characterizes couples who remain married because of a change of heart during the mandatory separation period.

In this study, we examine what characterizes couples that increase divorce risk when a government removes the legal requirement of mandatory separation. We use data from Denmark, historically a vanguard country in terms of family policies and access to divorce (Hussain and Kangas 2009; Rosenbeck 2018; Sandström and Garðarsdóttir 2018). Halfway through 2013, the Danish parliament enacted a policy reform that made legal separation voluntary instead of mandatory for uncontested divorces. We use the policy shift together with descriptive methods normally used in instrumental variable models to construct the average sociodemographic traits of couples who would have remained together, had the mandatory legal separation period remained in place.

The study offers two main contribution. First, by describing the traits of people that change behavior when no longer forced to undergo a six-month cooling off period, we can formulate

stronger theories on who makes rash family life decisions that would be undone had the decisions been slept on. Second, legal separation periods prior to the divorce are still the legal norm in most Western countries. Thus, the study offers insight into how changes in laws governing mandatory legal separation prior to divorce affect relationship processes in the population.

BACKGROUND

Often, previous studies of divorce have examined how changes in own or spouses characteristics (Becker, Landes, and Michael 1977; e.g., Chiappori, Fortin, and Lacroix 2002; Folke and Rickne 2016; Özcan and Breen 2012; Stevenson 2008; Weiss and Willis 1997), the supply of new potential partners (e.g., McKinnish 2004, 2007; Svarer 2007), and the perceived quality of the relationship (e.g., Fallesen and Breen 2016; Kjaer et al. 2014; Kvist, Nielsen, and Simonsen 2013; Svarer and Verner 2008) change divorce risk. Studies examining changes in policies governing divorce have focused on changes in legal access to divorce (e.g., Genadek, Stock, and Stoddard 2015; Kneip, Bauer, and Reinhold 2014; van Poppel and de Beer 1993; Stevenson 2008). We instead study what characterizes individuals who increase divorce risk when time from decision to execution changes, but access to divorce remain unchanged.

Legal separation and divorce in Denmark

The Marriage Act of 1922 introduced modern legal stipulation of divorce and separation in Denmark. Previously, divorce had primarily been obtainable through royal decree. The government now granted divorce on basis of: “family violence, unfaithfulness, venereal disease, mental illness or imprisonment. (Hussain & Kangas 2009, p. 102).” Separation also became a possibility if both partners found it impossible to continue cohabitation. In 1969, unilateral divorce filings became possible with divorce following one year of legal separation. In 1989 the mandatory legal separation period was shortened to six months, with the possibility of immediate divorce in the case of family violence, bigamy, and unfaithfulness. The 2013 reform dispensed with the mandatory six months

separation period for uncontested divorces, while maintaining the six months period for unilateral divorce filings without the presence of family violence, bigamy, or unfaithfulness. Further, it was possible to file for and be granted uncontested divorce electronically, without any need for telephonic or face-to-face interactions with state or local government employees.

DATA AND METHOD

Data

To examine what characterized couples who divorced because Denmark revoked the requirement of mandatory legal separation periods for uncontested divorce filings, we use semiannual data on all Danish marriages of up to 4.5 years of length and include an indicator of when the marriages result in divorce. Figure 1 shows the semiannual divorce rate for all couples who had been married no more than 4.5 years. The dashed line indicates the reform, July 1, 2013. We focus on couples only married for up to 4.5 years to avoid issues of sample changes over time. After the onset of the great recession, the annual number of Danish marriage decreased rapidly from 38,000 annual marriages in 2008 to 31,000 in 2010. We show the trend in Figure A1 in appendix. People who married prior to the recession are likely on average different than those who married after the onset of the recession. Include pre-recession marriages could create bias in the sample. We therefore censor couples at 4.5 years since marriage. The extra bump in divorce rates in the second half of 2013 is due to the co-occurrence of divorce following a six-month separation filed in the first half of the year together with the post-reform filings. Comparing the 2014 divorce rate to the pre-reform divorce rate shows that among couples who had been together for no more than 4.5 years, the divorce rate increased with more than 20 percent post-reform.

[Figure 1 here.]

We focus on the period from the second half of 2012 to the second half of 2014. We right-censor marriages that terminates due to death of one of the spouses or that are annulled due to bigamy

(only very few cases). From the population database we obtain information on couple characteristics at time of marriage, including mean age at marriage, age-difference between partners, ethnic origin (first- or second-generation immigrant background grouped together). We also include time-varying information on whether the couples have children. From the Danish education registry, we obtain highest level of education at year of marriage, and group couples into two categories: 1) both have at least high school education; and 2) both have college degrees. The data cannot be made publicly available due to privacy concerns, but all program files used to generate results as well as instruction on how to obtain data access are available as supplementary materials.

Analytical Strategy

The key methodological challenge is to isolate the characteristics of couples who changed divorce behavior because of the 2013 reform from the characteristics of couples who would have divorced anyway absent the reform. To address the challenge, we use methodological insights from Abadie (2003) to construct the mean of characteristics of couples who divorced solely due to the reform. Let $D_i(1)$ indicate the divorce decision for couple i who is married in a post-reform period, and $D_i(0)$ indicates the divorce decision for couple i who is married in a pre-reform period. We define our population as consisting of three groups of couples: 1) never-takers, who in a given period never divorces [$D_i(1) = D_i(0) = 0$]; 2) always-takers, who in a given period always divorces [$D_i(1) = D_i(0) = 1$]; and 3) compliers, who divorce in a given period if the reform has occurred [$D_i(1) > D_i(0)$].¹ Table 1 shows the distribution of the three groups across the reform and divorce

¹ We may define a fourth group, defiers, who only divorce if the reform has not occurred. These would be people who only divorce if they have a mandatory legal separation period. In the presence of defiers in our data, our analytical strategy is compromised. However, the reform did not remove the possibility of a legal separation period, but only changed it from mandatory to voluntary. People who wanted a six-month period to assess whether to stay married or divorce could still have that period. Therefore, we do not believe it to be plausible that we have defiers in our data. Assuming no defiers is equivalent to the monotonicity assumption from the LATE interpretation of instrumental variable models.

outcomes (adapted from Angrist and Pischke 2009). The terms complier, never-taker, and always-taker refer to couples at a specific half-year, not to a couple-constant trait. Never-takers in a given observation half-year can be compliers or always-takers in other half-years.

[Table 1 about here.]

It is not possible to identify complier couples because they always coexist with either never-takers or always-takers. However, the mean of any sample characteristic, such as ethnicity of the couple or average age at marriage, can be viewed as a weighted average of the characteristics of the three groups specified in Table 1. Abadie (2003) demonstrates that it is possible to construct a weighting-scheme κ from which we can obtain a series of properties of the complier group [see also Angrist and Pischke (2009)]. The mean of any characteristic X of the complier group can be calculated as:

$$E[X_i | D_i(1) > D_i(0)] = \frac{E[\kappa_i X_i]}{E[X_i]} \quad (1)$$

where

$$\kappa_i = 1 - \frac{D_i(1-Z_i)}{1-P(Z_i = 1|X_i)} - \frac{(1-D_i)Z_i}{P(Z_i = 1|X_i)}. \quad (2)$$

All elements in Eq. (2) is readily observable in the data or can be easily calculated under the assumption that the pre- and post-reform groups are similar. Following Abadie (2003), we use a probit model to estimate $P(Z_i = 1|X_i)$. $E[X_i | D_i(1) > D_i(0)]$ then expresses the mean of any characteristic X for the complier group. We can compare the characteristics of the reform compliers to the general sample of married couples, as well as to always- and never-takers. Thereby, we can examine how those who divorce when you remove mandatory legal separation are different from the general pool of married couples.

RESULTS

Pre- and Post-Reform Groups

To be able to identify complier characteristics, the married couples included in the sample must be similar across the reform. Substantial differences across the reform period would make it impossible to obtain correct weights for always- and never-takers, which then would invalidate the kappa-weighting scheme from Eq. 2. Table 2 provides descriptive statistics for all married and divorced couples on semiannual basis for the first 4.5 years after marriage. Due to the large sample size several characteristics are significantly different from each other, but only one characteristic differs by more than a percentage point across. The post-reform group were 1.4 percentage point less likely to have children living with them in the household. As we show later in this section, having children do not predict divorce in our sample, and the complier group did not differ on this characteristic either from the full sample, always-taker, and never-takers. Thus, although our sample is unbalanced on children in the household, it is not likely it will invalidate our results.

[Table 2 about here.]

Impact of 2013 Reform on Divorce Risk

First, to establish the impact of the 2013 reform on divorce risk, we estimate a simple difference-in-differences model where couples are observed semiannually for the first 4.5 years since marriage. We retain divorced couples until 4.5 years have passed since marriage or one of the partners remarry and split the sample by whether at least one of the spouses have been married before. Those who have undergone a divorce previously enter the process of a divorce with more knowledge than people who are on their first marriage and can make a more informed decision on whether to divorce. Table 3 demonstrates this. The reform had substantial effect on divorce rates of first time married who were still in the first 4.5 years of marriage, causing divorce rates to increase with more than 25 percent. For those on their 2+ plus marriage, the reform had no effect. Also, children had no

impact on divorce rates for first timers, which provides a first indication that the unbalance on children in the household likely does not pose a problem for identifying the complier group.

[Table 3 about here.]

Complier Characteristics

We have demonstrated that the 2013 reform induce divorces, and that couples seem reasonably balanced on each side of the reform. Table 4 now present calculations on average complier characteristics using the formulas from Eq. (1) and (2) for couples who divorced because of the rollback of mandatory separation periods for uncontested divorces. Compared to the full sample of married and divorced couples, and to never-takers, compliers were more likely to marry very young, less likely to have married at mean age above 45. Compliers also had higher between-spouses age difference, tended both to be native Danes, and were substantially less likely to have college degrees. Compared to always-takers, compliers were more likely to have high school and college degrees, and less likely to have married at within couple mean age above 45.

[Table 4 about here.]

CONCLUSION

In this study, we have presented average characteristics for Danish couples who divorce due to rollback of mandatory separation periods prior to effectuation of a divorce. The rollback only affected couples who were on their first marriages. Compared to the average couple, complier-couples married young, had majority ethnic background, had higher age difference between spouses, and were less likely to have college degrees. Compared to couples who divorced no matter if there was a mandatory separation period or not, complier couples had higher education and were less likely to marry after turning 45. Mandatory separation periods appear to help couples who marry young and who have less education than the average married population stay together.

Rolling back separation periods do not affect divorce rates for parents more or less than for everybody else.

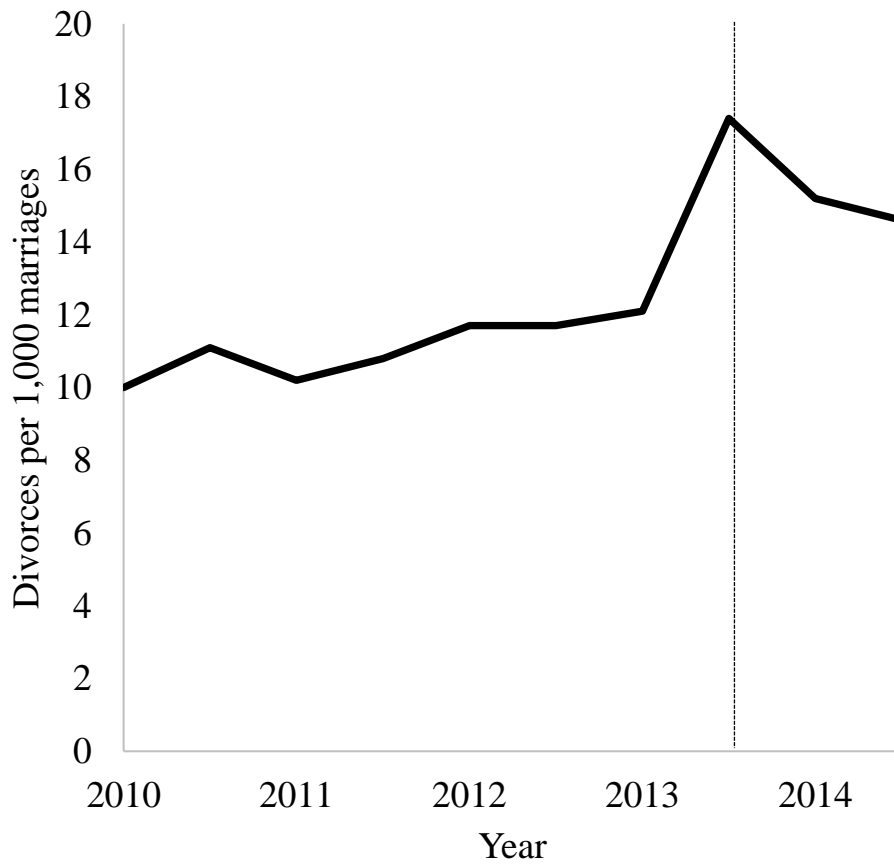
REFERENCES

- Abadie, Alberto. 2003. "Semiparametric Instrumental Variable Estimation of Treatment Response Models." *Journal of Econometrics* 113(2):231–63.
- Amato, Paul R. 2000. "The Consequences of Divorce for Adults and Children." *Journal of Marriage and Family* 62(4):1269–87.
- Angrist, Joshua David. and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics : An Empiricist's Companion*. Princeton University Press.
- Becker, Gary S., Elisabeth M. Landes, and Robert T. Michael. 1977. "An Economic Analysis of Marital Instability." *Journal of Political Economy* 85(6):1141–87.
- Chiappori, Pierre-André, Bernard Fortin, and Guy Lacroix. 2002. "Marriage Market, Divorce Legislation, and Household Labor Supply." *Journal of Political Economy* 110(1):37–72.
- Fallesen, Peter and Richard Breen. 2016. "Temporary Life Changes and the Timing of Divorce." *Demography* 53(5):1377–98.
- Folke, Olle and Johanna Rickne. 2016. *All the Single Ladies: Job Promotions and the Durability of Marriage*. Research Institute of Industrial Economics.
- Genadek, Katie R., Wendy A. Stock, and Christiana Stoddard. 2015. "No-Fault Divorce Laws and the Labor Supply of Women with and without Children." *The Journal of Human Resources* 42(1):247–74.
- Hussain, M. Azhar and Olli Kangas. 2009. "New Holes in the Safety Net ? Economic and Social Consequences of Divorce in Denmark." in *When Marriage Ends*. Edward Elgar Publishing.
- Kjaer, Trille, Vanna Albieri, Allan Jensen, Susanne K. Kjaer, Christoffer Johansen, and Susanne O. Dalton. 2014. "Divorce or End of Cohabitation among Danish Women Evaluated for Fertility

- Problems.” *Acta Obstetricia et Gynecologica Scandinavica* 93(3):269–76.
- Kneip, Thorsten, Gerrit Bauer, and Steffen Reinhold. 2014. “Direct and Indirect Effects of Unilateral Divorce Law on Marital Stability.” *Demography* 51(6):2103–26.
- Kvist, Anette Primdal, Helena Skyt Nielsen, and Marianne Simonsen. 2013. “The Importance of Children’s ADHD for Parents’ Relationship Stability and Labor Supply.” *Social Science and Medicine* 88:30–38.
- Leopold, Thomas. 2018. “Gender Differences in the Consequences of Divorce: A Study of Multiple Outcomes.” *Demography* 55(3):769–97.
- Leopold, Thomas and Matthijs Kalmijn. 2016. “Is Divorce More Painful When Couples Have Children? Evidence From Long-Term Panel Data on Multiple Domains of Well-Being.” *Demography* 53(6):1717–42.
- McKinnish, Terra G. 2004. “Occupation, Sex-Integration, and Divorce.” Pp. 322–25 in *American Economic Review*. Vol. 94.
- McKinnish, Terra G. 2007. “Sexually Integrated Workplaces and Divorce.” *Journal of Human Resources* XLII(2):331–52.
- Mcmanus, Patricia A. and Thomas A. DiPrete. 2013. “Losers and Winners: The Financial Consequences of Separation and Divorce for Men.” *American Sociological Review* 66(2):246–68.
- Özcan, Berkay and Richard Breen. 2012. “Marital Instability and Female Labor Supply.” *Annual Review of Sociology* 38(1):463–81.
- van Poppel, Frans and Joop de Beer. 1993. “Measuring the Effect of Changing Legislation on the Frequency of Divorce: The Netherlands, 1830-1990.” *Demography* 30(3):425.
- Rosenbeck, Bente. 2018. “Liberalization of Divorce.” *Scandinavian Journal of History* 43(1):18–39.

- Sandström, Glenn and Ólöf Garðarsdóttir. 2018. "Long-Term Perspectives on Divorce in the Nordic Countries – Introduction." *Scandinavian Journal of History* 43(1):1–17.
- Smock, Pamela J., Wendy D. Manning, and Sanjiv Gupta. 1999. "The Effect of Marriage and Divorce on Women's Economic Well-Being." *American Sociological Review* 64(6):794.
- Stevenson, Betsey. 2008. "Divorce Law and Women's Labor Supply." *Journal of Empirical Legal Studies* 5(4):853–73.
- Svarer, Michael. 2007. "Working Late." *Journal of Human Resources* XLII(3):582–95.
- Svarer, Michael and Mette Verner. 2008. "Do Children Stabilize Relationships in Denmark?" *Journal of Population Economics* 21(2):395–417.
- Weiss, Yoram and Robert J. Willis. 1997. "Match Quality, New Information, and Marital Dissolution." *Journal of Labor Economics* 15(1, Part 2):S293–329.

Figure 1. Semiannual Divorce Rate for Danish Couples (Marriage Duration Less than or Equal to Seven Years). Dashed Line Indicates Reform Timing



Source: Own calculations on data from Statistics Denmark.

Table 2. Distribution of Groups Across Reform and Outcome

	Reform = 0	Reform = 1
Divorce = 0	Never-takers Compliers	Never-takers
Divorce = 1	Always-takers	Always-takers Compliers

Table 2: Descriptive Statistics for Sample Across Reform Period.

	Pre-reform		Post-reform		Full Sample	
	Mean	SD	Mean	SD	Mean	SD
Mean age at married (ref. 45+)						
< 25 years	0.070	(0.255)	0.070	(0.255)	0.070	(0.255)
=> 25, < 30 years	0.263	(0.440)	0.262	(0.440)	0.263	(0.440)
=> 30, < 35 years	0.259	(0.438)	0.253	(0.435)	0.256	(0.436)
=> 35, < 40 years	0.149	(0.357)	0.148	(0.355)	0.149	(0.356)
=> 40, < 45 years	0.086	(0.280)	0.086	(0.281)	0.086	(0.280)
Age difference of partners	3.900	(4.000)	3.919	(4.048)	3.911	(4.028)
At least one partner 1 st or 2 nd gen immi.	0.072	(0.258)	0.081	(0.273)	0.077	(0.267)
Both partners, at least high school	0.651	(0.477)	0.650	(0.477)	0.650	(0.477)
Both partners, college	0.213	(0.410)	0.220	(0.414)	0.217	(0.412)
Children in the household	0.667	(0.471)	0.653	(0.476)	0.659	(0.474)
N	224566		310129		534695	

Source: Own calculations on data from Statistics Denmark.

Table 3: OLS Regression of Divorce on Reform Indicator and Couple Characteristics among Couples Married Less than Five Years.

	First marriage	Second marriage
Date > July 1, 2013	0.008*** (0.000)	-0.005 (0.003)
Mean age at marriage (ref. 45+)		
< 25 years	0.035*** (0.002)	0.441*** (0.034)
=> 25, < 30 years	0.013*** (0.001)	0.264*** (0.019)
=> 30, < 35 years	0.009*** (0.001)	0.086*** (0.011)
=> 35, < 40 years	0.008*** (0.001)	0.014 (0.007)
=> 40, < 45 years	0.012*** (0.002)	0.008 (0.007)
Age difference of partners	0.001*** (0.000)	-0.001 (0.000)
At least one partner not Danish	-0.018*** (0.002)	-0.015 (0.021)
Both partners, at least high school	-0.020*** (0.001)	-0.042*** (0.006)
Both partners, college	-0.011*** (0.001)	-0.019** (0.006)
Children in the household	0.002 (0.001)	0.017** (0.006)
Intercept	0.025*** (0.001)	0.087*** (0.006)
<i>N</i>	534695	34053

* p < .05; ** p < .01; *** p < .001

Source: Own calculations on data from Statistics Denmark.

Table 4. Average Characteristics of Compliers, Full Sample, Always-Takers, and Never-Takers

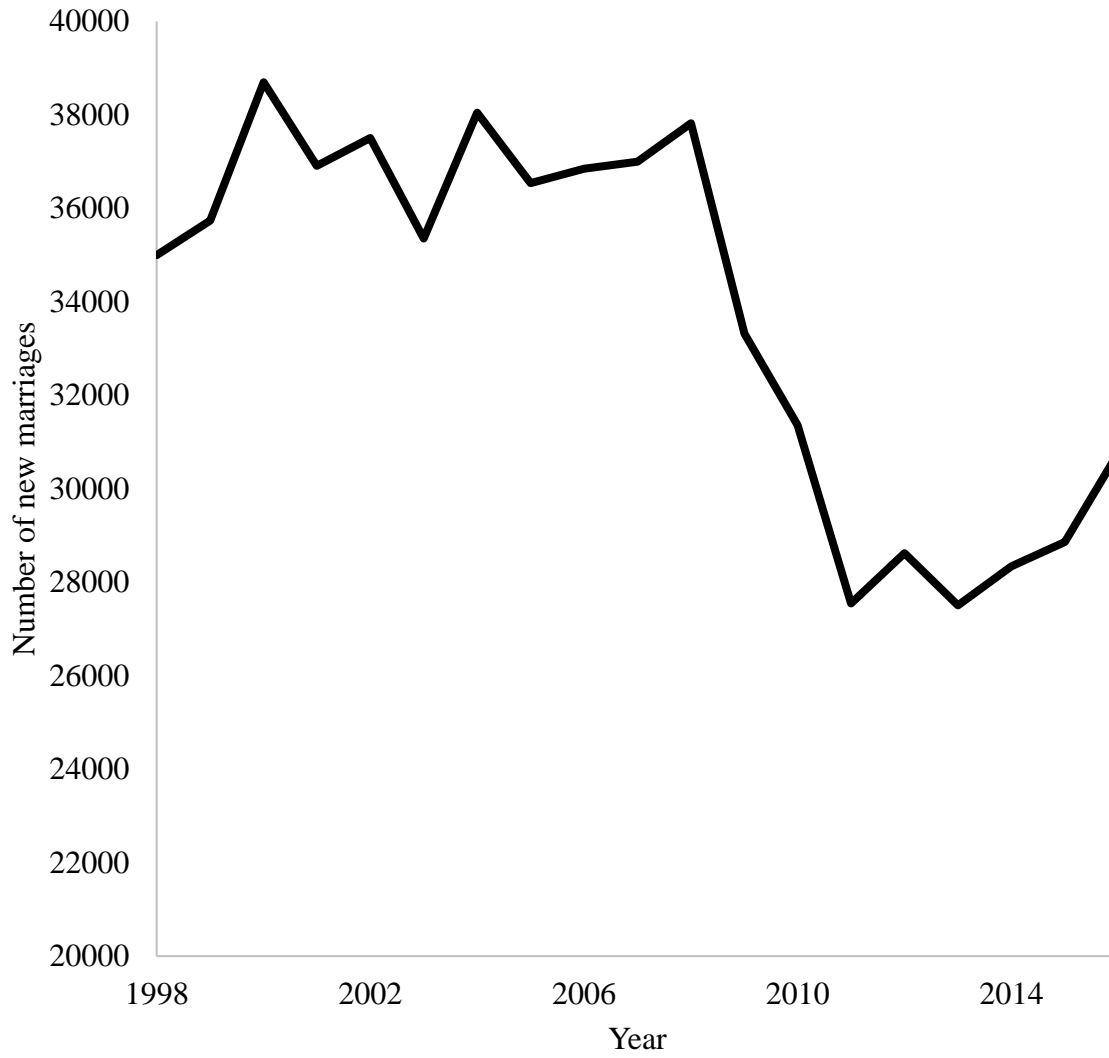
Covariate	Complier	Sample	Always-takers	Never-takers	Ratio: Complier/Sample	Ratio: Complier/AT	Ratio: Complier/NT
Mean age at marriage:							
=< 25	.130	.069	.133	.067	1.884	0.977	1.940
> 25, =< 30	.267	.263	.276	.262	1.015	0.967	1.019
> 30, =< 35	.236	.256	.222	.254	0.922	1.063	0.929
> 35, =< 40	.133	.149	.142	.149	0.893	0.937	0.893
> 40, =< 45	.090	.086	.100	.086	1.047	0.900	1.047
> 45	.051	.113	.060	.117	0.451	0.850	0.436
Age difference in years	4.494	3.902	4.219	3.899	1.152	1.065	1.153
Non-native origin (both)	.058	.076	.062	.080	0.763	0.935	0.725
High school degrees (both)	.601	.653	.457	.656	0.920	1.315	0.916
College degrees (both)	.130	.218	.079	.224	0.596	1.646	0.580
Children	.656	.657	.638	.652	0.998	1.028	1.006

Source: Own calculations on data from Statistics Denmark.

Note: AT: Always-Takers. NT: Never-Takers. The terms compliers, never-takers, and always-takers do not refer to time-constant characteristics of couples but refers instead to time-specific couple characteristics.

APPENDIX

Figure A1. Number of Annual Marriages in Denmark, 1998-2016.



Source: Statistics Denmark.