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Less Alimony after Divorce – Spouses' Behavioral Response to the 2008 Alimony Reform in Germany

RUHR UNIVERSITÄT BOCHUM RUB RWI #702

Imprint

Ruhr Economic Papers

Published by

RWI Leibniz-Institut für Wirtschaftsforschung
Hohenzollernstr. 1-3, 45128 Essen, Germany

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Ruhr Economic Papers #702

Responsible Editor: Thomas K. Bauer

ISSN 1864-4872 (online) – ISBN 978-3-86788-816-5

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RWI

Bibliografische Informationen der Deutschen Nationalbibliothek

Die Deutsche Bibliothek verzeichnet diese Publikation in der deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über: *http://dnb.d-nb.de* abrufbar.

Das RWI wird vom Bund und vom Land Nordrhein-Westfalen gefördert.

http://dx.doi.org/10.4419/86788816
ISSN 1864-4872 (online)
ISBN 978-3-86788-816-5

Julia Bredtmann and Christina Vonnahme[1]

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Abstract

The 2008 alimony reform in Germany considerably reduced post-marital and caregiver alimony. We analyze how individuals adapted to these changed rulings in terms of labor supply, the intra-household allocation of leisure, and marital stability. We use the German Socio-Economic Panel (SOEP) and conduct a difference-in-difference analysis to investigate couples' behavioral responses to the reform. The results do not confirm theoretical expectations from labor supply and household bargaining models. In particular, we do not find evidence that women increase their labor supply as a result of the negative expected income effect. Neither do our results reveal that leisure is shifted from women to men as a response to the changed bargaining positions. In contrast, we find evidence that the reform has led to an increase in the probability to separate for married as opposed to non-married cohabiting couples.

JEL Classification: J12; J13; J22

Keywords: Alimony; marital instability; female labor supply; intra-household bargaining

July 2017

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1. Introduction

For a long time, alimony regulations have been a means to protect the spouse concentrating on housework and childcare within a marriage, providing them with payment entitlements in the case of divorce. In addition, they have been a means to protect the welfare state from benefit claims, by balancing (tax) benefits for married couples with (post-)marital duties. Even after the introduction of 'no-fault divorce' in the 20th century, alimony regulations were preserved, and some countries such as Canada and Brazil further introduced alimony claims for non-married couples upon separation, this way harmonizing the legal rights of marital and non-marital unions. The 2008 alimony reform in Germany, in contrast, harmonized the rulings for married and non-married couples from the opposite direction, by reducing the entitlements for married couples.

In this paper, we analyze the behavioral responses of married couples to this reform in terms of labor supply, the intra-household allocation of leisure, and marital stability. The empirical investigation of such effects is crucial to assess the longer-term consequences of the reform. When female labor force participation does not increase, the objective of increased economic post-marital self-responsibility cannot be reached and the state might be forced to compensate a part of the reduced alimony payments in terms of unemployment benefits or social welfare.

Since alimony payments have been mostly received by women and paid by men, opposed reactions of men and women to the reform are expected. From the perspective of a labor supply model, the alimony reform translates into a negative income effect for women, who can now expect less post-marital and caregiver alimony upon divorce. Therefore, women's labor supply is expected to increase as to balance the adverse effect, while their leisure should decrease. For men, opposite effects can be expected. Intra-household bargaining models further suggest that the shift of financial resources from wives to husbands in the case of divorce changes the intra-household allocation of resources even within marriage. Transferring leisure (or other goods) from women to men could balance the altered options outside marriage, such that the decision to divorce would not be affected. However, if the assumptions of transferable utility and low-cost bargaining are not fulfilled, the divorce rate could also increase, because men face lower alimony payments, or decrease, because less women file for divorce due to the increased financial consequences. The expected effect of the reform on separation rates is therefore ambiguous.

Previous studies on changes in divorce law have mainly focused on evaluating the effects of the introduction of the 'no-fault' or 'unilateral divorce'[1], showing that individuals indeed react to such reforms. FRIEDBERG (1998) and WOLFERS (2006) find increases in divorce rates after the introduction of unilateral divorce in the USA. For a panel of European countries, GONZÁLEZ and VIITANEN (2009) obtain similar results, and find even stronger effects for the introduction of no-fault divorce schemes. Further studies show that divorce laws can also affect outcomes other than the divorce rate. PETERS (1986), for example, finds no effect of the introduction of unilateral divorce in the USA on divorce rates or fertility, but on female labor force participation, divorce settlement payments and remarriage rates. GRAY (1998) analyzes heterogeneous effects by type of marital property regime and shows that with community-property law, the bargaining position of women improved with the introduction of unilateral divorce and led women to decrease their home production and increase their leisure, while opposite effects are found under separate property systems. Focusing on alternative measures of bargaining power, STEVENSON and WOLFERS (2006) demonstrate that the introduction of unilateral divorce in the USA had a negative effect on domestic violence, suicides, and homicides with female victims. For the European case, KNEIP and BAUER (2007) show that the introduction of unilateral divorce led to rising divorce rates and thereby increased female labor force participation and lowered fertility.

Analyses of the behavioral responses to changes in alimony law, however, are relatively scarce. Exceptions are RANGEL (2006) and CHIAPPORI et al. (2017), who analyze the effect of the introduction of alimony claims for cohabiting couples in Brazil and Canada, respectively. Both studies find that, as expected by theory, those women affected by the reform decreased their labor supply. CHIAPPORI et al.'s (2017) findings furthermore support the hypothesis that women already cohabiting at the reform date benefitted in terms of increased leisure (while the opposite is found for men). No such effects, or even a reversed pattern, are found for couples formed after the legal change, possibly because of changes at the matching stage. With regard to relationship stability, CHIAPPORI et al. (2017) reveal that those couples who were surprised by the reform were less likely to get married and the cohabitation period was longer. The total duration of the relationship was not affected. Again, no such effects or opposite effects are found for relationships formed after the reform. RANGEL (2006) additionally finds that years of schooling for first-born daughters of cohabiting couples increased.

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[1] With no-fault divorce, a marriage can be dissolved even if neither spouse can be blamed for the breakdown of marriage, e.g., because of having committed adultery. Many countries even have been accepting this 'irretrievable breakdown of marriage' as a reason for divorce if it is put forward by only one spouse. These legal schemes are then classified as 'unilateral divorce' regimes, as opposed to 'consent' (also called 'bilateral' or 'mutual divorce').

Empirical evidence on the behavioral response to changes in alimony law is rare, also for Germany. In the year following the 2008 reform, the BERTELSMANN STIFTUNG (2009) conducted a survey on the public awareness of the changes in alimony law, and on the reactions to and the opinion on the reform. Overall, 16% of the 1,560 interviewed persons (from randomly drawn households with children up to age 25) had not heard about the reform, 57% had at least heard about it, and 17% reported to know details. The results further reveal that men evaluated the reform more positively than women. However, both men and women stated that the reform had incentivized them to increase their labor supply and to share childcare and paid labor in a more egalitarian way (BERTELSMANN STIFTUNG 2009: 7, 9, 11-12). In terms of causal evaluations, the study by FAHN et al. (2016) represents the only quantitative analysis of the effects of the German alimony reform so far. Using administrative vital statistics as well as data from the German Microcensus, the authors find that the abolition of caregiver alimony for married parents with children above the age of three years led to a decrease in relative in-wedlock fertility and fewer marriages.

We contribute to this literature by evaluating couples' behavioral responses to the reform more broadly. In contrast to the reforms investigated in the previous literature, the 2008 alimony reform in Germany did not introduce new alimony claims, but rather reduced the entitlements for married couples, this way changing the expected financial situation after divorce. Unlike FAHN et al. (2016), we do not only focus on the changes in caregiver alimony, but more generally on different types of alimony payments after divorce. Accordingly, we do not exclusively target couples' outcomes such as separation or divorce, but include analyses on individual adaptations to the reform in terms of labor supply and leisure. In the empirical analysis, we use the German Socio-Economic Panel (SOEP) and apply a difference-in-differences model to estimate spouses' reactions to the reform. As the reform was universal in the sense that it changed the legal basis for all (back then) current and future alimony payments after divorce, without any cut-off rules or other exogenous variation, our aim is not to disentangle the overall causal effect of the reform. Rather, we focus on analyzing differences in the behavioral response of never-married cohabiting couples and couples who had first married in the years before the 2008 reform and were then 'surprised' by the new ruling. These effects can be interpreted as a lower bound to the overall effects, as non-married cohabiting couples might also have reacted to the reform, but to a lesser extent. Moreover, we explore the heterogeneous effects of the reform by conducting sub-sample regressions for different groups of individuals.

Overall, we do not find strong behavioral responses in terms of intra-household time allocation. In particular, female labor supply did not increase significantly, and no shifts of leisure from women to men are found. We do, however, find a positive effect of the reform on couples' probability to

separate, and this effect is strongest for those who are least satisfied with family life before the reform.

The remainder of this article is structured as follows: In section 2, we describe the main features of the German alimony law and of the 2008 reform and derive its expected effects based on different theoretical approaches. The empirical strategy and the data used are described in section 3. In section 4, we present our estimation results, and section 5 concludes.

2. Institutional and theoretical background

2.1 The 2008 alimony reform in Germany

After the divorce of a marriage, alimony claims can be made by an ex-spouse who cannot sustain him- or herself against the former partner, provided the latter's income exceeds the deductible for basic needs. The German alimony law specifies several circumstances which can justify such claims, including child care, elderliness, illness or affliction, unemployment, (further) vocational training or re-training, and reasons of equity. These claims result in alimony payments for child care ('caregiver support') and post-marital alimony (also called 'divorce alimony'). The latter is based on two principles: the compensation of disadvantages that emerged within or were caused by the marriage, and post-marital solidarity (WELLENHOFER 2011). While child support, i.e., alimony payments provided by the parent not living with their child to contribute to the child's living, is determined by family courts following specific rates, there are no such rules for post-marital or caregiver alimony. Volume and duration of these payments are determined by family courts on an individual basis.

Before the new German alimony law took effect in January 2008, the last main changes of this law had been introduced in 1977. These had encompassed the abolition of the fault principle, which had reduced alimony claims to persons not responsible for marital breakup. Until the end of 2007, the legal situation had therefore not changed for a long time. For previously married parents with children, full caregiver alimony was paid after a divorce to the parent who cared for the common child(ren) until the (youngest) child's 8th or even 15th birthday. For separated, but previously unmarried parents, it was usually only paid until the 3rd birthday. Post-marital alimony was paid generously, but could be limited in time and volume in certain cases, e.g., when the marriage had been of short duration[2]. In the case that the income of the ex-spouse with the higher income did not

[2] While the law does not define this short duration in years, legal practice has set it to between two and three years (BUNDESGERICHTSHOF 1986).

suffice to cover the demands of all alimony claimants[3], the claims of children and ex-spouses were given equal priority. In contrast to countries such as Canada, alimony claims between unmarried cohabiting partners upon separation (other than for caregiving) have never been in place in Germany.

The 2008 alimony reform in Germany entailed several changes to this law[4], which were meant to serve three main purposes: (i) strengthen children's well-being, (ii) emphasize post-marital self-responsibility, and (iii) simplify the alimony law. The main change with regard to the first objective was a new ranking for the case of conflicting claims: While until 2008, the ex-spouse had been on a par with underage children[5], these children are now put first in the ranking of several alimony claimants. (Ex-)spouses are ranked second if they can assert alimony claims due to child care or if the marriage is or was of long duration[6], and ranked third in any other case. The following ranks four through seven comprise older children as well as grandchildren and other offspring, own parents and more distant relatives. If the income of the alimony payer does not cover all claims, they are answered one after the other, as long as the liable party's income still exceeds the deductible (WELLENHOFER 2011). This means that on average, children receive more and ex-spouses receive less alimony after the reform.

Hence, the measures to achieve the first objective of the reform already contributed to the second objective: Improving the position of children in the order of alimony claimants automatically forced ex-spouses to rely less on alimony payments than before. In addition, three further main changes emphasized post-marital self-responsibility: First, ex-spouses who take care of the couple's children have now lower caregiver alimony claims in the sense that they are expected to work from their child's 3rd birthday on. Thus, the threshold for divorced parents was adapted to the old ruling for alimony claims between non-married parents after their separation. Second, the 'principle of self-responsibility' was introduced in the law. While the old law started from the situation where one divorced spouse cannot meet his or her own needs, the new version states as a rule that each spouse is responsible to earn their own living after divorce, and alimony claims are rather an exception to this rule. Third, alimony claims can now also be refused or limited (in time and volume)

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3 This is a frequent case according to BORTH (2007).

4 See Table A1 for a comparison of the old and new rulings.

5 Children until the age of 21 have similar rights when they are still in school education and living in the parent's household (BGB 2007: Sec. 1603, 1609; 2008: Sec. 1603, 1609).

6 Again, the law does not define this duration in years. Legal practice used to apply a threshold of around 10 years (BORN et al. 2012: Sec. 1609, margin number 21).

when the claimant is living again in a long-term relationship, and not only – as before – in the case of re-marriage.

The new law affects almost all marriages, also those that had started before 2008. Only marriages that were divorced before July 1977 are exempted. Given that all alimony payments except for child support are decided on by family courts on an individual basis, alimony payments that were decided on before 2008 have not been changed automatically. A retrial can be requested provided that a considerable change can be expected and the change is not unreasonable for the other party.[7]

While the new alimony law only took effect in January 2008, the discussion of a reform of the alimony law started already in 2000, when a reform of child support had become necessary as a reaction to a decision of the Federal Constitutional Court of Germany (Bundesverfassungsgericht) as of 1998 (BT-DRS. 14/3781 2000: 2). However, a first legal draft was not presented and discussed in parliament and the Committee on Legal Affairs until 2006 (DEUTSCHER BUNDESTAG 2006). At that point, the new law was planned to take effect in April or July 2007 (DEUTSCHER BUNDESTAG 2006: 24, 28). In response to the reform draft, several petitions were launched, but warnings of several experts concerning the constitutionality of the planned caregiver support regulations were not taken into account. Two days before the legal draft was about to pass in parliament in May 2007, the Federal Constitutional Court intervened and declared the planned caregiver alimony regulations to be unconstitutional (BUNDESVERFASSUNGSGERICHT 2007), as the new regulations on caregiver support had foreseen to maintain differences in the treatment of formerly married and unmarried parents (BT-DRS. 16/1830 2006: 7, 8, 13). Therefore, the introduction of the law was again postponed, the draft was adapted another time and finally passed in parliament on November 9, 2007. The 'Unterhaltsrechtsänderungsgesetz' (law to change the alimony law) was published on December 21, 2007, and took effect on January 1, 2008 (DEUTSCHER BUNDESTAG 2007).

2.2 Expected behavioral responses to the alimony reform

The expected responses to the decreased post-marital and caregiver alimony mainly depend on whether an individual expects to be payer or recipient of alimony payments, and on how strong the expected changes in alimony are. The direction of alimony payments in the case of separation or divorce is determined by the (expected) relative income of partners, and by who is or expects to be the main caregiver of common children. While no official statistics on the gender of alimony beneficiaries are available, official data (STATISTISCHES BUNDESAMT 2017) show that between 2005

[7] For a change to be considerable, the expected change in alimony payments has to be approximately 10% GRUBER 2013.

and 2010, which is the main time horizon of our analysis, 87% of single parents in Germany were women. In addition, labor income differs largely between men and women: According to SOEP data for the sample considered in this analysis, the gross labor income of women was still 29% lower than that of men. Accordingly, as indicated by SOEP data for the years 2005 to 2010, about 95% of alimony payments were received by women. This confirms that the reductions in post-marital and caregiver alimony on average translated to a negative (expected) income change for women, and to a positive change for men. For the reason of simplicity, we therefore consider women as alimony beneficiaries and men as alimony payers.

From the perspective of **labor supply models** (e.g., BECKER 1965, GRONAU 1977), the reduced expected alimony payments for women translate into a negative income effect.[8] Assuming leisure to be a normal good, the negative income effect should induce women to reduce their leisure. Accordingly, they can be expected to increase their labor supply by taking up a waged employment or raising their working hours. In a dynamic perspective this can also be interpreted as an increase in investments in professional experience. As the reform had a differential effect for both genders, opposite effects can be expected for men, whose expected income increases with the reform.

Considering that the alimony reform changed rulings after divorce, not only adjustments at the individual level, but also at the household level can be expected. From the perspective of an **intra-household bargaining model**, not the individual (absolute) income change matters, but the relative position of a partner. The allocation of resources such as individual consumption goods or leisure between heterogeneous partners within the household is assumed to be the result of a bargaining process. The relative bargaining power of each partner may partly be determined by each partner's income, but also by other factors affecting the individual utility after a separation. In this context, the reduction in alimony payments for women worsens wives' bargaining power, since their options outside marriage deteriorate in financial terms. Accordingly, husbands' bargaining power increases as they have to pay lower post-marital and caregiver support in case of a divorce. Following the Becker-Coase theorem (COASE 1960, BECKER et al. 1977, BECKER 1993) such changes in partners' outside options and thus bargaining power should only affect the decision to separate when the *sum* of wealth (or utility) of the partners outside versus within marriage changes. If one partner is put better off outside marriage at the cost of the other spouse, but the overall

[8] As alimony payments depend on the relative income of partners, a substitution effect could also be considered. However, this linkage was weakened with the reform, at least once basic needs of both parties are covered. Therefore, a substitution effect plays a minor role in this context, and we concentrate on the income effect here, in line with previous literature.

wealth outside (and within) marriage is not affected, the couple will not be less or more likely to separate, as the changed relative positions are compensated in a bargaining process. The bargaining power of the partner whose outside options improves will increase and (s)he will be able to obtain a larger share of the household's goods for individual use.[9] Accordingly, in line with the predictions of the labor supply model, we expect the leisure time of women to decrease and that of men to rise.

Given that such a compensation of the changed relative outside options of the partners takes place, the decision to separate should not be affected by the reform – at least if the sum of wealth for both partners is not changed. For spouses with children, however, the alimony reform did not only lead to zero-sum shifts of expected alimony payments between spouses, but increased the child support in cases where the income of the spouse with the higher income does not suffice to cover all potential alimony claims. For these couples, where the reform also transferred resources to a third party not deciding upon divorce, the decision whether to divorce might have been influenced, even if the Becker-Coase theorem holds. If child support is transferred to the caregiver's bank account, as common for underage children, this might result in a cushioned reform effect: Even though mothers should receive less post-marital and caregiver alimony, this could partly be outweighed by higher child support payments.

Even if changed options outside marriage are not balanced by intra-household shifts of resources and the theorem does not hold, it is still not clear whether or how couples' probability to divorces changes. In a unilateral divorce scheme as prevalent in Germany, the improved options of men outside their marriage might translate into an increased number of divorces. At the same time, however, less women might file for divorce, as their options outside marriage have deteriorated. Since the effects on the probability of husbands and wives to file for divorce might not be symmetric, the overall effect of the reform on marital stability is ambiguous.

In general, the scope of the effects described also depends on the possibilities to adjust and on how large the changes in expected income by altered alimony payments are. Possibilities to adjust are determined in particular by whether main family decisions such as the choice of a partner, marriage and having children have already been made. Younger persons who are neither in a long-term relationship nor have children should have the largest possibilities to adjust: As CHIAPPORI et al.

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[9] The validity of the theorem is based on the assumptions of transferable utility and low bargaining or transaction costs. Moreover, as RANGEL (2006) argues, the threat of ending the relationship has to be sufficiently credible, which he expects to be the case rather for unmarried than married couples. Otherwise, the change of the threat point would not need to affect the bargaining process. A more detailed discussion of the Becker-Coase theorem and its assumptions is included in CHIAPPORI et al. (2009; 2015).

(2017) argue, alimony reforms might even have effects on the matching stage. When the expected income of a potential partner changes, people might prefer to get married to another person. However, those already married at the reform date can also be expected to show strong reactions to the reform, as they should be more likely to get divorced in the future than those who might not want to get married at all. This argument is in line with CHIAPPORI et al. (2017), who find larger adaptations of couples formed before rather than after the alimony reform in Canada. Also in our setting, differential effects by marital status can be expected because the alimony reform in Germany adapted the rulings for post-marital and caregiver alimony for divorced persons towards that of non-married separated couples, as described in section 2.1. Post-marital alimony was reduced (while corresponding entitlements upon separation did not exist for non-married couples even before the reform) and caregiver entitlements for divorced parents were completely adapted to the pre-reform rulings for previously unmarried separated parents, with a common threshold of the children's third birthday.

3. Methodology

3.1 Empirical strategy

To empirically assess spouses' behavioral response to the 2008 German alimony reform, we estimate the following difference-in-difference model

$$\boldsymbol{y_{it} = \alpha + \beta\, treatment_i + \gamma\, post\text{-}reform_t \times treatment_i + \delta' \mathbf{X_{it}} + \theta_{st} + \varepsilon_{it}}\,, \qquad \textbf{(1)}$$

where y_{it} is the behavioral outcome of individual (couple) i at time t. To test the predictions of the labor supply model, we use spouses' labor force participation, measured as a binary variable, and their daily working hours as outcome measures for the extensive and intensive margin of labor supply. In addition, we look at spouses' hours of leisure per typical weekday as a measure for household bargaining. For these outcomes, we estimate the model separately for men and women as we expect them to have reacted differently to the reform. Lastly, we investigate couples' probability to separate to estimate the reform effect on the stability of relationships.

The binary variable $post\text{-}reform_t$ equals one for the years 2008 to 2010, i.e., the post-reform period, and zero for the years 2005 to 2007, i.e., the pre-reform period.[10] As the reform originally

[10] Determining the duration of the post- and the pre-reform period is of course to some extent arbitrary. We decided to include several years before and after the reform to be able to control for general time trends and to not let outcomes of a single year determine the results. We also check the robustness of our results by adding one and two further years to each of the pre- and post-reform period (see section 4.3).

should have been introduced in spring 2007, it could of course be the case that adaptations to the reform not only started when it took effect, but already earlier. However, as the law was passed in parliament in November 2007, and was published after final checks only in December 2007, we argue that people could at least not be sure about the new alimony regulations until the end of 2007 and therefore use 2008 as the first post-reform year. Nonetheless, as we cannot rule out that behavioral responses occurred already before 2008, we conduct a robustness check in which we exclude the year 2007 from the regression (see section 4.3).

The binary variable $treatment_i$ distinguishes between those treated and those not (or less) treated by the reform. Given that it is not possible to estimate overall causal effects of the reform, our aim is to investigate the differential effects for those most strongly and those less strongly affected by the reform. As we expect individuals who got married before the reform to react more strongly than non-married, cohabiting couples, we use the former as the treatment group and the latter as the control group. In particular, we distinguish between couples who got married for the first time at some point between 2005 and 2007 (i.e., in the pre-reform period) and couples who were never married before 2008, but were cohabiting at some point between 2005 and 2007. We condition on pre-reform characteristics only, as the reform might have influenced the evolution or dissolution of relationships. This is in contrast to the study by FAHN et al. (2016), who do not condition on pre-reform characteristics. The model thus estimates the additional effect of the alimony reform for married couples, as compared to non-married, cohabiting couples. This can be interpreted as a lower bound to the overall effect, assuming that married couples react more strongly to the reform than non-married cohabiting couples, who only possibly will get married sometime.

The coefficient γ is our main coefficient of interest. It describes how the outcomes of the treatment group changed relative to the outcomes of the control group after the reform was implemented. The identification of this coefficient is based on the assumption that, conditional on all other control variables, the outcomes of the treatment and the control group would have followed parallel trends in case the reform had not been implemented. We argue that this is plausible because other family or labor market policies that were implemented within our observation period, as, e.g., the introduction of a new parental leave regulation ('Elterngeld')[11], should equally affect the behavior of married and unmarried couples. For tax policies restricted to married couples, no major changes

[11] On 1 January 2007, a new parental leave benefit called *Elterngeld* ('parental money') replaced a previous benefit called *Erziehungsgeld* ('child-raising money'). Whereas the previous benefit was specifically targeted towards low-income families, the new *Elterngeld* is a much more generous transfer, which depends on parental labor earnings in the pre-birth period (see KLUVE and TAMM (2013) for a more extensive discussion of the new parental leave regulation).

were conducted in the period analyzed. In addition, unlike the majority of studies analyzing the impact of the introduction of unilateral divorce laws, which are usually based on aggregate data, we are able to control for a variety of individual and household characteristics that might be correlated with our outcome variables.

These characteristics, as denoted by X_{it}, include the individual's age, which is also included as a squared term to account for non-linear effects, and his or her education, distinguishing between low-, medium-, and high-skilled individuals. We further control for whether the individual is single or married (with the reference group being non-married persons cohabiting with their partner) as well as the duration of cohabitation and marriage, respectively, and its square. Moreover, we include the number of children until the age of 15 and dummy variables for the presence of children aged 0 to 2 and children aged 3 to 5 in the household as control variables.

Lastly, θ_{st} represents a vector of interacted year and federal state fixed effects, while ε_{it} denotes the error term. The former is included to control for region-specific trends in our outcome variables.

In addition to our baseline estimates, we conduct several heterogeneity analyses to investigate whether different sub-groups react more or less strongly to the reform. They include sub-groups by age of children to focus on changes in caregiver alimony as well as subgroups with respect to income and satisfaction with family life.

The model is estimated using ordinary least squares (OLS) for all outcomes. All standard errors are heteroscedasticity-robust and clustered at the level of the individual and the couple, respectively.

3.2 Data and summary statistics

For our empirical analysis, we use data from the German Socio-Economic Panel (SOEP), since it includes comprehensive information on family events such as marriage and separation, on time use, as well as standard socio-economic characteristics including labor outcomes, for a relatively large number of observations. It is an annual survey conducted since 1984, where every year between 10,000 and 25,000 adults from the age of 16 years onwards are asked about 'Living in Germany'. We use the SOEP long-format data where the different waves are already combined and selected variables are harmonized where necessary.[12]

[12] A detailed documentation of the SOEP data, data collection, sample composition, and representativeness can be found in WAGNER et al. (2007). A description of version 31.1 of the dataset, which is the version we use, is available at http://dx.doi.org/10.5684/soep.v31.

As main time horizon for our analysis, we choose the years 2005 through 2010, to cover several years before and after the reform. As our focus is on first marriages, we only consider individuals who got married for the first time in the pre-treatment period (the treatment group) and individuals who were never married before 2008 (the control group). In addition, we restrict our sample to individuals between 18 and 65 years of age.

Table 1 shows the pre-reform summary statistics for the resulting sample.[13] It includes the mean and standard deviation of all dependent and independent variables by gender and for both the treatment and the control group. For each gender, the mean difference between the treatment and control group is given, and the statistical significance of the difference is indicated as calculated by a t-test. For both men and women, labor force participation is higher in the control group than in the treatment group.[14] While men in the treatment and the control group have almost the same working hours (measured per average weekday in the week of the interview), women who did not get married in the pre-reform period work significantly more hours per day than those in the treatment group, though the difference is very small. Still, they report having more leisure time per workday, and this difference is similar for men. The separation rate is much higher for never-married individuals than for individuals having married in the pre-reform period. The latter are also slightly older and have higher education levels. The duration of cohabitation is on average lower for the recently-married than for those cohabiting in the pre-reform period. Finally, the recently-married are more likely to have children, which is in line with them having lower labor supply and less leisure time.

4. Results

4.1 Basic results

Table 2 shows the results of estimating the difference-in-difference model depicted in Eq. (1) separately for men and women. For all outcomes considered, the coefficient for the treatment-group dummy is not statistically different from zero, suggesting that conditional on other individual and family characteristics, newly-married and never-married partners did not differ in terms of their labor supply and their intra-household allocation of leisure prior to the reform. However, we also

[13] See Table A2 for descriptive statistics for the whole time period from 2005 to 2010.

[14] Labor force participation is a binary variable equal to one for persons who are working, are on leave or are unemployed, and equal to zero for the remaining, who are not working and are not registered as searching for work. It is set to missing for persons who already have retired.

hardly find any evidence that the reform had a differential impact on the labor supply or leisure time of both groups. With respect to women's labor force participation, the respective interaction effect is positive and sufficiently large (about 2 percentage points), but not statistically different from zero. In addition, we find a similar, though insignificant, effect for men.[15] The signs of the coefficients are in line with the results of the survey by the BERTELSMANN STIFTUNG (2009), where both women and men (with children under the age of 25) had announced to increase their labor supply as response to the reform. Regarding the intensive margin of labor supply, spouses' actual working hours, the interaction effects are close to zero and not statistically significant for both women and men. Thus, the expected effects from the labor supply model can in general not be confirmed empirically. In terms of shifts of intra-household resources such as leisure, the results also do not show the hypothesized shift from women to men. If anything, women who got married before the reform seem to have increased their leisure time relative to those who had not been married before the reform, but the effect is not very large (0.2 hours) and only significant at the 10 percent level. For men, it is close to zero.

Table 3 shows the results for the probability to separate, estimated at the couples' level. While the Becker-Coase theorem suggests that shifts in the allocation of resources outside the marriage should not affect the probability to separate, the main coefficient of interest for the interaction of the post-reform and the treatment group dummy is large and highly statistically significant. Compared to couples who never got married until the reform, couples who got married for the first time before the reform are almost five percentage points more likely to separate from 2008 on. Interestingly, the effect size is very similar to the coefficient for the treatment dummy, revealing that pre-existing differences in the probability to separate between married and unmarried cohabiting couples were almost abolished with the reform.

Figure 1 disentangles the reform effect on couples' probability to separate by year. Relative to 2005, it reveals a slight increase in the probability to separate already in the years before the reform. However, the respective estimates are not different from zero at standard significance levels. The largest and highly significant increase occurs directly after the introduction of the reform, in the years 2008 and 2009. The effect for 2010 is smaller than for the two years before, which suggests that the reform effect on separation might not be permanent.

The coefficients for the other control variables included in the regressions at the individual and couples' level are in general in line with common findings. Labor force participation is increasing

[15] Although the coefficients are similar in absolute terms, the relative effect is higher for women (2.7% vs. 1.4% for men).

with age, though at a decreasing rate and opposite effects are found for leisure time. In addition, women who are married and have small children are less likely to participate in the labor market and work less hours, conditional on participating, while no such effects are found for men. With respect to the regression at the couples' level, hardly any other characteristics have explanatory power for the probability to separate, except for women's age, which has a negative though decreasing impact on separation probabilities.

4.2 Heterogeneity analyses

Given that we do not find significant increases in female labor supply or shifts of leisure from women to men for the overall sample, we conduct several heterogeneity analyses to investigate whether the effects are more prevalent for those groups most exposed to the reform. First, we split the sample by income, arguing that women with a low income should be more likely to depend on alimony payments and thus react more strongly to the reform in terms of labor supply adjustments. Table 4 shows the respective results, separately by tercile of pre-reform income.[16] In terms of the size of the estimated reform effect on labor supply, we find indeed that the interaction effect is largest for women with a low income and lowest for women with a high income. However, neither of the estimated effects is statistically different from zero and again, we find similar effects for men, who are expected to respond differently to the reform. With respect to working hours and leisure, we do not find any behavioral response to the reform, irrespective of the pre-reform income. An exception are married women with medium pre-reform income, who have more leisure time post-reform as compared to non-married women, which again contradicts the hypotheses derived from the Becker-Coase theorem.

Second, we disentangle the differential reform effect by the age of the spouses' children. Here, we exploit the fact that the reform adapted the regulation for caregiver alimony between previously married parents to the regulation for never-married separated parents. As explained in section 2.1, since 2008 full alimony is normally granted to the separated or divorced caregiver only until the (youngest) common child is 3 years old. Before 2008, a threshold of 8 years (in some cases even up to 11 or 15 years) applied to previously married caregivers. Accordingly, Table 5 shows the reform effect separately for parents whose children were between 3 and 8 years old in the post-reform period and for those whose children were younger or older than 3-8 years or who had no children in the pre-reform period. Overall, the results do not reveal that women with children aged

[16] We apply the maximum pre-reform income rather than average income here. This should better reflect the income potential of partners after a separation, and thus the dependency on alimony payments and the extent of the expected reform effects.

3 to 8 are more likely to increase their labor supply after the reform. If anything, we find a positive effect on the labor force participation of men with children in the relevant age group. In addition, we do not find evidence for shifts in leisure time from women to men, irrespective of the age of the children. Hence, both for the overall sample and for those groups most exposed to the reform, we do not find any responses in terms of labor supply and intra-household allocation of leisure as a result of the reform.

Lastly, we investigate heterogeneous effects at the couples' level. In particular, we expect couples in which at least one partner was not satisfied with the relationship in the pre-reform period to react most strongly to the reform in terms of higher separation probabilities. Table 6 thus shows the estimated reform effects separately by terciles of satisfaction with family life in the years before the reform.[17] The results reveal indeed that couples with low pre-reform satisfaction levels are most likely to separate after 2008. Accordingly, we find no reform effect for those couples most satisfied with family life.

4.3 Robustness checks and discussion

In addition to the analyses by sub-groups, we conduct several robustness checks with respect to the years included in the analysis. First, we follow FAHN et al. (2016) and exclude the year 2007 from the pre-reform period, in order to rule out that our findings are driven by possible anticipation effects of the reform. Second, we check the robustness of our results by extending the pre- and post-reform period by one and two further years (2004-2011 and 2003-2012). The results of these sensitivity analyses support our previous findings and are shown in Table A3.

Hence, our basic conclusions do not change: In general, we do not find evidence for an increase in labor supply of newly-married as opposed to never-married women in response to the reform. Neither do we find evidence for shifts of leisure from women to men. These results do not support the hypotheses derived from labor supply and intra-household bargaining models. We do, however, find evidence that the reform led to an increase in the separation probability for newly-married as opposed to never-married couples. Thus, the predictions of the Becker-Coase theorem, which suggests that a change in the relative utility of partners outside marriage should not affect the probability to separate due to changes in the allocation of resources within marriage, are not supported by our findings. This is in contrast to previous studies on alimony reforms in Brazil and Canada (RANGEL 2006, CHIAPPORI et al. 2017), where significant labor supply responses of women were

[17] The terciles are built on the basis of couples' average pre-reform satisfaction with their family life for the years 2006-2007 (as the variable is not available for 2005). The value of the partner with the lower average satisfaction is used for the couple.

found after the introduction of new alimony claims. While FAHN et al. (2016) focus on the reform of caregiver alimony in Germany and other outcome variables, their findings of a decreased relative in-wedlock fertility and reduced probabilities to get married complement our result of an increase in marital dissolutions.

Possibly, we do not find corresponding responses to the reform because the expected reactions to the reform in terms of labor supply or leisure were too small to be identified. This is particularly important since we focus on the difference in the adaptation between newly- and never-married persons, as in the absence of specific cutoff-rules an overall causal effect of the reform cannot be identified. Labor supply might not be easily adjustable, especially for persons who already got married and might have decided on intra-household specialization (e.g., housework vs. paid labor) and had children before the reform. Adaptations in terms of leisure are of course also connected to rigidities in labor supply, and furthermore difficult to detect with self-reported data, which vary between values of one and three hours per day for most of the sample.

Our difference-in-difference analysis focuses on persons who were still married or cohabiting at the reform date, which means that possible adaptations are mostly reactions to *expected* changes. Accordingly, for behavioral responses to the reform to take place, individuals must be sufficiently forward-looking and the discount rate may not be too high. Furthermore, although the study by the BERTELSMANN STIFTUNG (2009) suggests that a substantial share of interviewed persons knew about the reform and the media coverage on the reform was large, not each person in our sample can be expected to know (details) about the changes in alimony law and the corresponding implications.

In addition, as described in section 2.1, the common transfer of child support for underage children to the caregiver's (often the mother's) bank account, might cushion the decreases in post-marital and caregiver alimony. It could be argued, however, that this effect is less likely to be anticipated by individuals than general reform effects.

Although our treatment group should have higher probabilities to react to the reform, missing reactions in terms of labor supply or leisure could also be the consequence of lower *possibilities* of the treatment group to react, as compared to the control group. This is in line with the finding by FAHN et al. (2016) of a declined probability to get married when caregiver alimony is reduced. Women who did not get married previous to the reform could have increased their labor supply or extended their education and postponed or renounced marriage. However, delayed founding of a family for the unmarried is in contrast to their result that rather in-wedlock than out-of-wedlock fertility decreased. Moreover, also CHIAPPORI et al. (2017) showed for the case of Canada that

couples formed before the alimony reform reacted more strongly to it than couples formed afterwards.

Finally, it could be the case that bargaining responses did not take place because the assumptions of the Becker-Coase theorem, such as transferable utility, are not or only partly fulfilled for the setting analyzed. In this case, an increase in marital dissolution is in line with the theorem if changes in the filing for divorce are asymmetric across gender and a possible increase of men filing for divorce exceeds the decreased number for women. The argument outlined by RANGEL (2006) that the Becker-Coase theorem might not hold because of incredible dissolution threats does not seem to apply here, as we find large increases in the probability to separate, in particular for the two years directly following the reform.

5. Conclusion

The aim of this study is to provide an empirical investigation of spouses' behavioral responses to the 2008 alimony reform in Germany. As the reform reduced post-marital and caregiver alimony between ex-spouses and alimony payments have mostly been received by women and paid by men, differential responses by gender in terms of adjustments in labor supply and leisure can be expected.

The introduction of the reform does not allow for an overall causal estimation of behavioral responses, as everyone who got married or considered to do so at some point could have been affected by the reform in terms of (expected) altered alimony payments after a possible divorce. Accordingly, we use a difference-in-difference setting to investigate the differential behavioral response of never-married cohabiting couples and couples who got married for the first time in the pre-reform period. Since the 2008 alimony reform mainly harmonized the rulings for married and non-married couples by reducing the entitlements for married couples, we expect married couples to react more strongly to the reform than non-married couples.

Based on SOEP data for the years 2005 to 2010, we do not find significant increases in female labor supply or decreases in male labor supply. Neither do shifts of leisure from women to men seem to have taken place, not even for sub-groups most exposed to the reform in terms of pre-reform income or the age of the children. In contrast, marital dissolution increased, in particular for the years 2008 and 2009. Thus, the results suggest that the changed relative positions of partners outside marriage have not been largely balanced by shifting intra-household resources between partners. This could be interpreted as another piece of evidence against the applicability of the Coase theorem to marriage and family decisions, as also shown by several studies on the introduction of unilateral divorce (e.g., FRIEDBERG 1998 and WOLFERS 2006).

Another possible interpretation is that many people did not have enough information about the reform to adjust their behavior to it, or that they do not take into account or strongly discount future income effects. However, this does not explain increased marital dissolution. Also, adjustment possibilities for the treatment group might have been too small when married persons had higher intra-household specialization. Moreover, the legal change and its expected effects may not have been large enough to produce many detectable effects, in particular since increases in child support could have cushioned decreases in post-marital and caregiver alimony.

While we are not able to evaluate the overall causal effect of the alimony reform, our results at least cast reasonable doubts that the main objectives of the reform − increasing the post-marital self-responsibility of women − have been reached. As the reform lowered post-marital alimony, but no clear balancing effect in terms of increased female labor force participation was found, this suggests that women might still depend on payments provided by others. While this could be new partners, it is likely that at least part of the reduced alimony payments are compensated by the state, in terms of unemployment benefits or social welfare.

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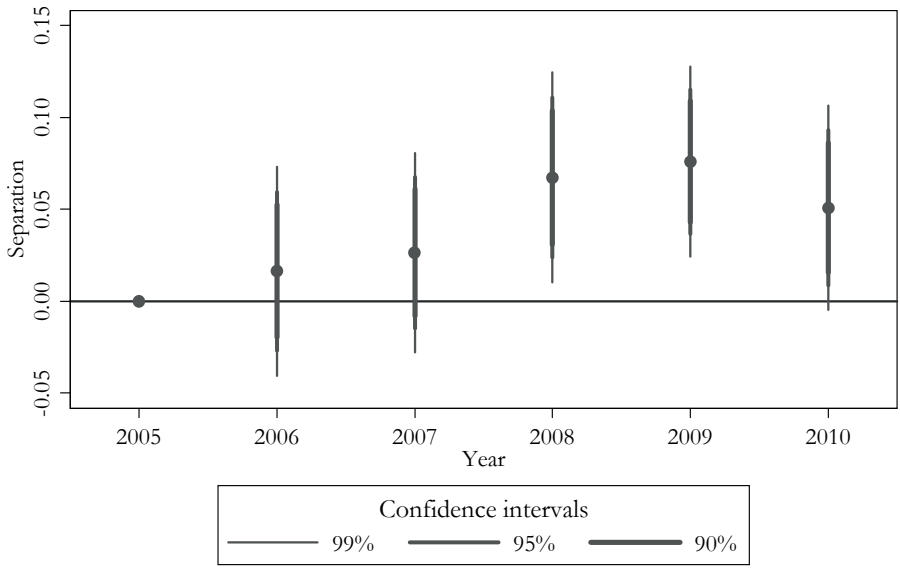
Figures

Figure 1: Treatment effects at the couple's level by year



Notes: OLS regression results for the difference in separation probability between treatment and control group by year (reference year: 2005). The treatment group includes cohabiting couples who got married for the first time in the pre-reform period. The control group includes cohabiting couples who did not get married until at least 2007. Control variables are the same as in Table 2. Confidence intervals (99%, 95% and 90%) are calculated with robust standard errors clustered at the couple's level.

Tables

Table 1: Pre-reform summary statistics by group and gender

	Women			Men		
	Treat-ment group Mean/SD	Control group Mean/SD	Difference Mean	Treat-ment group Mean/SD	Control group Mean/SD	Difference Mean
Dependent variables						
Labor force participation	0.77	0.85	-0.09***	0.97	0.95	0.02*
	(0.42)	(0.36)		(0.18)	(0.23)	
Actual working hours per weekday	7.38	7.67	-0.28**	8.70	8.68	0.02
	(2.20)	(2.14)		(1.58)	(2.14)	
Leisure (hours per weekday)	1.68	1.90	-0.22***	1.75	2.03	-0.28***
	(1.39)	(1.61)		(1.44)	(1.83)	
Separation	0.01	0.06	-0.05***	0.01	0.08	-0.07***
	(0.10)	(0.24)		(0.09)	(0.27)	
Independent variables						
Age	29.57	28.43	1.15***	32.31	31.53	0.78**
	(6.15)	(6.62)		(6.27)	(7.83)	
Education levels						
Low	0.09	0.12	-0.03*	0.07	0.10	-0.04**
	(0.28)	(0.32)		(0.25)	(0.31)	
Medium	0.65	0.68	-0.03	0.65	0.67	-0.01
	(0.48)	(0.47)		(0.48)	(0.47)	
High	0.27	0.21	0.06***	0.28	0.23	0.05**
	(0.44)	(0.40)		(0.45)	(0.42)	
Marital status						
Single	0.08	0.12	-0.04**	0.08	0.13	-0.05***
	(0.27)	(0.32)		(0.28)	(0.34)	
Cohabiting (unmarried)	0.40	0.87	-0.47***	0.36	0.86	-0.50***
	(0.49)	(0.34)		(0.48)	(0.35)	
Married (and cohabiting)	0.52	0.01	0.51***	0.56	0.01	0.55***
	(0.50)	(0.12)		(0.50)	(0.09)	
Duration of cohabitation	2.11	3.16	-1.05***	1.98	3.25	-1.27***
	(2.37)	(3.32)		(2.51)	(3.53)	
Number of children aged 15 or younger	0.44	0.32	0.12***	0.44	0.30	0.14***
	(0.73)	(0.60)		(0.66)	(0.60)	
Child(ren) between 0 and 2 years	0.26	0.14	0.12***	0.27	0.14	0.13***
	(0.44)	(0.35)		(0.44)	(0.34)	
Child(ren) between 3 and 5 years	0.06	0.07	-0.01	0.06	0.06	-0.00
	(0.24)	(0.26)		(0.24)	(0.24)	
Observations	631	934	1,565	565	823	1,388
Observations (cond. on working)	440	689	1,129	511	669	1,180

Notes: The statistics refer to the pre-reform period (i.e., 2005-2007) only. The treatment group includes persons who got married for the first time in the pre-reform period, and who have been cohabiting with their spouse at some point in this period. The control group includes persons who have been cohabiting with their partner at some point in the pre-reform period, but did not get married until at least 2007. Statistical significance of mean differences is calculated with a t-test. Asterisks indicate p-values according to: *** p<0.01, ** p<0.05, * p<0.1.

Table 2: Difference-in-difference results at the individual level

	Women			Men		
	Labor force participation	Actual working hours per weekday	Leisure (hours per weekday)	Labor force participation	Actual working hours per weekday	Leisure (hours per weekday)
	Coef./StdE	Coef./StdE	Coef./StdE	Coef./StdE	Coef./StdE	Coef./StdE
Treatment group	0.0026	0.1358	-0.1546	0.0110	-0.1301	-0.0498
	(0.0220)	(0.1785)	(0.1046)	(0.0157)	(0.1628)	(0.1138)
Post-reform x treatment group	0.0188	-0.0403	0.1959*	0.0134	-0.0061	-0.1457
	(0.0262)	(0.1960)	(0.1092)	(0.0163)	(0.1522)	(0.1244)
Individual and household characteristics						
Age	0.0472***	0.0598	-0.1184***	0.0427***	0.1676**	-0.1968***
	(0.0099)	(0.0827)	(0.0350)	(0.0103)	(0.0729)	(0.0477)
Age (squared)	-0.0006***	-0.0007	0.0013***	-0.0006***	-0.0021**	0.0024***
	(0.0001)	(0.0012)	(0.0005)	(0.0002)	(0.0010)	(0.0007)
Education level (reference: low)						
Medium	0.0098	0.0211	-0.1588	-0.0452**	-0.1456	-0.3319
	(0.0345)	(0.2960)	(0.1603)	(0.0192)	(0.2068)	(0.2122)
High	0.0433	0.4705	-0.1338	-0.0142	0.2371	-0.4129*
	(0.0372)	(0.3408)	(0.1783)	(0.0199)	(0.2204)	(0.2171)
Marital status (reference: unmarried cohabiting)						
Married (and cohabiting)	-0.0715***	-0.5930***	0.0569	-0.0212	0.0559	-0.1199
	(0.0218)	(0.1821)	(0.0835)	(0.0142)	(0.1370)	(0.1113)
Single (no partner in household)	-0.0152	-0.0290	0.2810**	0.0186	-0.3289**	0.2639
	(0.0256)	(0.2363)	(0.1326)	(0.0138)	(0.1646)	(0.1659)
Duration of cohabitation	0.0038	0.0614	-0.0144	-0.0004	-0.0563	0.0299
	(0.0052)	(0.0519)	(0.0277)	(0.0039)	(0.0383)	(0.0314)
Duration of cohabitation (squared)	-0.0001	-0.0049	0.0012	0.0000	0.0026	-0.0018
	(0.0004)	(0.0043)	(0.0022)	(0.0003)	(0.0025)	(0.0020)
Number of children aged 15 or younger	-0.0530**	-1.0135***	-0.0967	0.0022	-0.1325	-0.0500
	(0.0233)	(0.2265)	(0.0754)	(0.0127)	(0.1210)	(0.1170)
Child(ren) between 0 and 2 years	-0.4187***	-1.4192***	-0.4352***	-0.0088	0.2370	-0.2210*
	(0.0326)	(0.2949)	(0.1070)	(0.0147)	(0.1664)	(0.1290)
Child(ren) between 3 and 5 years	-0.0302	-0.8351***	-0.2339*	0.0125	0.2161	-0.0908
	(0.0348)	(0.3051)	(0.1194)	(0.0170)	(0.1841)	(0.1383)
Constant	0.1608	6.6141***	4.1458***	0.2753*	5.8112***	5.8095***
	(0.1583)	(1.3020)	(0.5975)	(0.1641)	(1.2083)	(0.8428)
Interacted federal state and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.32	0.24	0.08	0.09	0.03	0.06
Observations	3,186	2,273	3,186	2,903	2,517	2,903

Notes: OLS regression results with robust standard errors clustered at the individual level in parentheses. Asterisks indicate p-values according to: *** p<0.01, ** p<0.05, * p<0.1. The post-reform dummy equals one in the years 2008-2010, and zero in the years 2005-2007. The treatment group includes persons who got married for the first time in the pre-reform period, and who have been cohabiting with their spouse at some point in this period. The control group includes persons who have been cohabiting with their partner at some point in the pre-reform period, but did not get married until at least 2007.

Table 3: Difference-in-difference results at the couple's level

	Separation	
	Coef.	StdE
Treatment group	-0.0504***	0.0091
Post-reform x treatment group	0.0473***	0.0110
Individual and household characteristics		
Woman's age	-0.0106**	0.0046
Woman's age (squared)	0.0001**	0.0001
Man's age	0.0049	0.0043
Man's age (squared)	-0.0001	0.0001
Woman's education level (reference: low)		
Medium	-0.0144	0.0128
High	-0.0115	0.0135
Man's education level (reference: low education)		
Medium	0.0028	0.0150
High	0.0002	0.0159
Married	-0.0102	0.0067
Duration of cohabitation	-0.0001	0.0021
Duration of cohabitation (squared)	-0.0000	0.0001
Number of children aged 15 or younger	0.0002	0.0071
Child(ren) between 0 and 2 years	-0.0000	0.0102
Child(ren) between 3 and 5 years	0.0173	0.0128
Constant	0.1861***	0.0681
Interacted federal state and year fixed effects	Yes	
Adjusted R^2	0.02	
Observations	3,333	

Notes: OLS regression results for the probability to separate for cohabiting couples with robust standard errors clustered at the couples' level. Asterisks indicate p-values according to: *** p<0.01, ** p<0.05, * p<0.1. The post-reform dummy equals one in the years 2008-2010, and zero in the years 2005-2007. The treatment group includes persons who got married for the first time in the pre-reform period, and who have been cohabiting with their spouse at some point in this period. The control group includes persons who have been cohabiting with their partner at some point in the pre-reform period, but did not get married until at least 2007.

Table 4: Effects at the individual level by income terciles

	Women			Men		
	Low income Coef./StdE	Medium income Coef./StdE	High income Coef./StdE	Low income Coef./StdE	Medium income Coef./StdE	High income Coef./StdE
Labor force participation						
Treatment group	0.0001	0.0261	-0.0176	0.0169	0.0241	0.0012
	(0.0542)	(0.0233)	(0.0303)	(0.0463)	(0.0195)	(0.0013)
Post-reform x treatment group	0.0443	-0.0198	0.0117	0.0490	-0.0010	0.0086
	(0.0544)	(0.0403)	(0.0414)	(0.0433)	(0.0165)	(0.0066)
Adjusted R^2	0.26	0.43	0.26	0.18	-0.03	-0.06
Observations	1,048	1,034	1,041	944	934	936
Actual working hours (per weekday)						
Treatment group	-0.2935	0.3372	0.1693	0.6661	0.0420	-0.6063***
	(0.4554)	(0.2581)	(0.1871)	(0.4908)	(0.2168)	(0.2262)
Post-reform x treatment group	-0.0535	-0.2386	0.0105	-0.3109	0.0164	0.0642
	(0.5047)	(0.2700)	(0.2536)	(0.3954)	(0.2475)	(0.2114)
Adjusted R^2	0.23	0.24	0.36	0.06	0.02	0.06
Observations	526	831	877	646	882	912
Leisure (hours per weekday)						
Treatment group	-0.2396	-0.2963	0.0115	-0.2856	0.1597	0.0768
	(0.2052)	(0.1823)	(0.1750)	(0.2658)	(0.1915)	(0.1654)
Post-reform x treatment group	0.2312	0.4337**	-0.0377	0.1338	-0.3119	-0.1905
	(0.2388)	(0.1916)	(0.1628)	(0.2940)	(0.2145)	(0.1962)
Adjusted R^2	0.07	0.14	0.07	0.07	0.04	0.07
Observations	1,048	1,034	1,041	944	934	936

Notes: OLS regression results with robust standard errors clustered at the individual level in parentheses. Asterisks indicate p-values according to: *** p<0.01, ** p<0.05, * p<0.1. Control variables are the same as in Table 2. Income terciles are according to the individual maximum pre-reform (2005-2007) gross monthly labor income.

Table 5: Effects at the individual level by children's age

	Women		Men	
	Children in relevant age group Coef./StdE	No children in relevant age group Coef./StdE	Children in relevant age group Coef./StdE	No children in relevant age group Coef./StdE
Labor force participation				
Treatment group	0.0074	0.0239	-0.0150	0.0057
	(0.0489)	(0.0241)	(0.0200)	(0.0215)
Post-reform x treatment group	0.0437	-0.0368	0.0912***	0.0003
	(0.0560)	(0.0292)	(0.0273)	(0.0225)
Adjusted R^2	0.28	0.19	0.10	0.09
Observations	1,107	2,079	1,003	1,900
Actual working hours (per weekday)				
Treatment group	0.3924	0.1508	-0.2255	-0.0755
	(0.4033)	(0.2089)	(0.2954)	(0.1955)
Post-reform x treatment group	0.0376	0.0365	0.0884	-0.0078
	(0.4082)	(0.2284)	(0.2315)	(0.2039)
Adjusted R^2	0.40	0.07	0.02	0.04
Observations	581	1,692	861	1,656
Leisure (hours per weekday)				
Treatment group	-0.2607	-0.0980	-0.1571	0.0898
	(0.2033)	(0.1323)	(0.2124)	(0.1554)
Post-reform x treatment group	0.2495	0.2301*	-0.1496	-0.2686
	(0.1969)	(0.1337)	(0.1984)	(0.1716)
Adjusted R^2	0.08	0.05	0.20	0.02
Observations	1,107	2,079	1,003	1,900

Notes: OLS regression results with robust standard errors clustered at the individual level in parentheses. Asterisks indicate p-values according to: *** p<0.01, ** p<0.05, * p<0.1. The group "Children in relevant age group" includes persons with children aged 3-8 years in the post-reform period, i.e., those for whom the caregiver maintenance regulations were harmonized between married and unmarried parents in the case of divorce or separation. The group "No children in relevant age group" includes persons without children, or with children younger or older than 3-8 years in the post-reform period. Control variables are the same as in Table 3.

Table 6: Effects at the couple's level by terciles of satisfaction with family life

	Low satisfaction Coef./StdE	Medium satisfaction Coef./StdE	High satisfaction Coef./StdE
Separation			
Treatment group	-0.0839***	-0.0326**	-0.0009
	(0.0169)	(0.0150)	(0.0120)
Post-reform x treatment group	0.0878***	0.0336*	-0.0066
	(0.0231)	(0.0178)	(0.0186)
Adjusted R^2	0.01	0.01	0.01
Observations	1,179	1,366	728

Notes: OLS regression results with robust standard errors clustered at the couples' level in parentheses. Asterisks indicate p-values according to: *** p<0.01, ** p<0.05, * p<0.1. Control variables are the same as in Table 3. Satisfaction terciles are according to the mean pre-reform (2005-2007) satisfaction with family life of the less satisfied partner. Satisfaction is measured on a scale from 0 to 10. Differences in numbers of observations between the terciles are due to clustered values around certain satisfaction values.

Appendix

Table A1: Comparison of main features of pre- and post-reform alimony law in Germany

	Until 31/12/2007	Since 01/01/2008	Objective
Ranking of claimants	children and ex-spouses ranked equally	1) underage children 2) resp. 3): ex-spouses 4) - 7): further relatives	strengthen children's well-being (emphasize post-marital self-responsibility)
Post-marital alimony	as rule	as exception ('principle of self-responsibility')	emphasize post-marital self-responsibility
Caregiver alimony			
between previously married, separated or divorced parents	until at least 8th (15th) birthday of (youngest) common child	until at least 3rd birthday of (youngest) common child	emphasize post-marital self-responsibility
between previously unmarried, separated parents	until at least 3rd birthday of (youngest) common child		

Source: Authors' illustration, based on the old and new legal rulings (BGB 2007, 2008) and BERTELSMANN STIFTUNG (2009).

Table A2: General summary statistics by group and gender

	Women		Men	
	Treatment group Mean/SD	Control group Mean/SD	Treatment group Mean/SD	Control group Mean/SD
Dependent variables				
Labor force participation	0.74	0.86	0.97	0.95
	(0.44)	(0.35)	(0.17)	(0.22)
Actual working hours per weekday	6.97	7.54	8.66	8.69
	(2.45)	(2.17)	(1.71)	(2.13)
Leisure (hours per weekday)	1.64	1.82	1.67	2.01
	(1.41)	(1.54)	(1.40)	(1.77)
Separation	0.01	0.05	0.02	0.05
	(0.11)	(0.22)	(0.12)	(0.23)
Independent variables				
Age	31.23	29.88	33.62	32.80
	(6.60)	(7.02)	(6.38)	(7.63)
Education levels				
Low	0.08	0.10	0.06	0.08
	(0.28)	(0.31)	(0.24)	(0.28)
Medium	0.61	0.66	0.64	0.67
	(0.49)	(0.47)	(0.48)	(0.47)
High	0.30	0.24	0.29	0.25
	(0.46)	(0.43)	(0.46)	(0.43)
Marital status				
Single (no partner in household)	0.04	0.10	0.05	0.10
	(0.20)	(0.30)	(0.22)	(0.30)
Cohabiting (unmarried)	0.18	0.80	0.16	0.79
	(0.39)	(0.40)	(0.37)	(0.41)
Married (and cohabiting)	0.77	0.09	0.79	0.11
	(0.42)	(0.29)	(0.41)	(0.31)
Duration of cohabitation	3.18	3.93	3.06	3.82
	(2.63)	(3.75)	(2.72)	(3.83)
Number of children aged 15 or younger	0.66	0.39	0.67	0.36
	(0.82)	(0.65)	(0.80)	(0.63)
Child(ren) between 0 and 2 years	0.35	0.17	0.36	0.16
	(0.48)	(0.37)	(0.48)	(0.37)
Child(ren) between 3 and 5 years	0.14	0.10	0.13	0.09
	(0.34)	(0.30)	(0.34)	(0.29)
Observations	1,396	1,790	1,266	1,637
Observations (conditional on working)	920	1,353	1,155	1,362

Notes: The statistics refer to the pre- and post-reform period (i.e., 2005-2010). The treatment group includes persons who got married for the first time in the pre-reform period, and who have been cohabiting with their spouse at some point in this period. The control group includes persons who have been cohabiting with their partner at some point in the pre-reform period, but did not get married until at least 2007.

Table A3: Results of robustness tests for different time periods

	Women			Men			Couples
	Labor force participation	Actual working hours per weekday	Leisure (hours per weekday)	Labor force participation	Actual working hours per weekday	Leisure (hours per weekday)	Separation
	Coef./StdE	Coef./StdE	Coef./StdE	Coef./StdE	Coef./StdE	Coef./StdE	Coef./StdE
Years 2005-2010, excl. 2007							
Treatment group	-0.0072	0.5227***	-0.2705**	0.0089	-0.2135	0.0120	-0.0467***
	(0.0260)	(0.1835)	(0.1310)	(0.0188)	(0.1952)	(0.1402)	(0.0115)
Post-reform x	-0.0117	-0.3516	0.0161	-0.0130	0.3374	-0.2160	0.0484***
treatment group	(0.0352)	(0.2390)	(0.1334)	(0.0190)	(0.2104)	(0.1637)	(0.0140)
Adjusted R^2	0.32	0.27	0.08	0.11	0.03	0.07	0.02
Observations	2,248	1,607	2,248	2,039	1,754	2,039	2,391
Years 2004-2011							
Treatment group	0.0233	0.4250***	-0.1216	0.0007	-0.1787	0.0993	-0.0479***
	(0.0205)	(0.1504)	(0.1047)	(0.0141)	(0.1658)	(0.1240)	(0.0094)
Post-reform x	0.0009	-0.3476	-0.0380	-0.0057	0.2529	-0.3119**	0.0496***
treatment group	(0.0291)	(0.2135)	(0.1160)	(0.0166)	(0.1937)	(0.1472)	(0.0128)
Adjusted R^2	0.31	0.27	0.08	0.09	0.04	0.09	0.03
Observations	2,710	1,939	2,710	2,449	2,079	2,449	2,819
Years 2003-2012							
Treatment group	0.0133	0.0835	-0.0858	-0.0039	-0.1441	0.0272	-0.0539***
	(0.0155)	(0.1320)	(0.0781)	(0.0124)	(0.1355)	(0.0987)	(0.0076)
Post-reform x	-0.0040	0.0165	0.0551	0.0188	0.1248	-0.1668*	0.0500***
treatment group	(0.0200)	(0.1583)	(0.0833)	(0.0129)	(0.1427)	(0.0986)	(0.0089)
Adjusted R^2	0.31	0.28	0.08	0.08	0.03	0.08	0.03
Observations	6,510	4,596	6,510	5,881	5,113	5,881	6,500

Notes: OLS regression results with robust standard errors clustered at the individual or couples' level in parentheses. Asterisks indicate p-values according to: *** p<0.01, ** p<0.05, * p<0.1. The post-reform dummy equals one in the years 2008-2010/2008-2011/2008-2012, and zero in the years 2005-2006/2004-2007/2003-2007. The treatment group includes persons who got married for the first time in the pre-reform period, and who have been cohabiting with their spouse at some point in this period. The control group includes persons who have been cohabiting with their partner at some point in the pre-reform period, but did not get married until at least 2007. For the couple's level, only cohabiting persons are considered. Control variables for columns (1)-(6) and (7) are the same as in Tables 2 and 3, respectively.