Preparing for the Worst: Post-Divorce Instability Risk and Economic Behavior of Households*

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Abstract

Alimony reforms regulated by divorce law may affect the negotiation dynamics of wedlock couples by influencing their perceived risk of marital dissolution and future instability risk, thereby reshaping their behaviour. Specifically, spousal maintenance alimony payments act as a financial safety net and reduce the economic risks associated with the potential marriage dissolution. Any limitation to these payments can influence the economic decisions in a stable marriage. In this paper, I leverage the 2008 alimony reform in Germany as a quasi-natural experiment to investigate legally married couples' saving and labour market behaviour. Exploiting variations in the disproportionate impact of this reform and employing difference-in-difference framework, I analyse the behaviour of married couples compared to less affected married couples and cohabiting couples, before and after the reform using longitudinal data and marital and fertility histories. I observe 6.6 percent increase in the labour market participation of married women and 11.94 percent increase of average annual hours worked by previously employed women. This is accompanied by a decrease of 5.6 percent in average annual hours worked by married men. The impact is persistent for economically weak spouses, both at extensive and intensive margins. I have also found an increase in the monthly net household level savings but the impact on the saving rate is insignificant. Overall, behavioural responses significantly vary based on the level of dependency on post-divorce spousal maintenance, gender roles within marriage, income distribution, wealth level, presence of children and age cohort.

Keywords: Household Economics, Saving Behaviour, Labor Supply, Instability risk, Alimony Reform

JEL: D14, D15, G11, G51, J12, J16, K36

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1 Introduction

This paper explores how changes in spousal maintenance alimony - legal protection for income-sharing in case of divorce - influence the economic behaviour of married households. Marriage is a legal union of two partners that enjoy economies of scale, within-family insurance mechanisms against income and health shocks, family-friendly policies, e.g. marital splitting tax, and legal protection of each partner's rights. Family decisions of these wedlock partners with distinct preferences are the outcome of the joint decision-making process, e.g. division of labour, savings and investment decisions, etc. While mutual trust, relationship expectations, shared family goals, and commitments play a significant role in decision-making, legal protections—such as the division of property and assets, spousal financial support during and after separation, and arrangements for child custody and care—further strengthen mutual trust. Any statutory change can influence within-family decisions by altering interpersonal relationships, future expectations and risks, individual preferences, commitment and bargaining positions between partners. Therefore, it is important to explore the mechanisms through which such external factors may affect private households and have significant macroeconomic and policy implications.[1]

To understand this relationship, I use German divorce law reform on spousal maintenance obligations, known as alimony reform, enacted in January 2008. The reform changed conditions for the post-divorce alimony settlements, claiming to reduce the unfair financial dependency between ex-partners and encourage the self-sufficiency of each spouse (within/outside marriage). Any reform in divorce law that changes the economic well-being of divorcing families can also affect the welfare of individuals in families that are in stable marriages and not getting divorced (Gray, 1998). Therefore, policymakers and researchers should carefully examine these indirect effects as they have long-term social and economic consequences. The 2008 reform directly affected the couples who divorced in the new regime and indirectly affected the then-married couples and potential couples in the marriage market. This paper analyses the behaviour of then-married couples who are not getting divorced but anticipate the consequences of the new regime and adapt their behaviour.

Spousal alimony payments function as marriage insurance between partners, fostering mutual trust and allowing for the distribution of domestic and work responsibilities. There are two main channels through which changes in these entitlements may affect the economic behaviour of households. Firstly, limiting spousal alimony may affect the intra-household bargaining positions of married couples and may increase the risk of marriage dissolution, especially for the financially weak partner. Secondly, limiting alimony is equivalent to expected idiosyncratic income shocks, raising concern about post-divorce instability risk. Such reforms may change the partner's commitment to a particular role and create an incentive to improve self-sufficiency, and this is especially true for women who are primarily involved in domestic tasks and compromises on a career. As preventive measures, couples renegotiate their decisions, which manifest in their economic behaviour.

This paper is designed to examine the subsequent research questions. First, how do married couples in a stable marriage respond if they anticipate future instability and risks driven by changes in the legal protection of post-divorce rights? How does the response differ depending on income distribution, wealth level, within-household role distributions, household composition and age cohorts? Second, to understand if the adaptations in behaviour are persistent or just a temporary response. Third, how do

[1] The behavioural responses of the households given future expectations, heterogeneous preferences (Chiappori et al., 2002) and various sources of risks — labour income, capital market, mortality, marital uncertainty or family events such as spouse death, divorce (Cocco et al., 2005); (Hubener et al., 2016) are well established in the theoretical literature.

family law reforms influence people by affecting their intra-household decision-making process and the relevant essential policy implications? The analysis runs across different categories of married households and helps to understand if policy interventions provide an essential channel to affect household behaviour to achieve economic goals.

A vast amount of literature finds that divorce law-regulated reforms such as grounds of divorce[2], property division rights[3], child custody rights, child support, and spousal maintenance greatly matter for social outcomes like labour market outcomes, financial investments, fertility decisions, and the decision to marry or dissolve a marriage. The changes in legal regimes affect the value of exiting a marriage and thus potentially alter the bargaining position of partners during their marriage (Stevenson, 2008), (Voena, 2015). These reforms also increase the actual and perceived risk of marital instability within the family (González & Özcan, 2013). Despite the rich theoretical and empirical literature, there is little research on how alimony reform - which explicitly targets the financial obligations between partners, incentivises changes in their behaviour.

To uncover the adaptations in economic behaviour, I examine changes in the employment status of married men and women, annual hours worked and in monthly household savings, using longitudinal and retrospective datasets (cohabitation, marriage and fertility histories) from the German Socioeconomic Panel (GSOEP) during 2003-2012. To rule out the composition effect, I restrict the sample to include only legally married couples who had married before and remained married after the reform. I first estimate the mean impact of the reform - homogeneous treatment effect - by comparing the behaviour of married couples to that of cohabiting couples, using the difference-in-difference framework. In general, these two groups differ in their commitment to relationships and legal regulations; however, I narrowed the commitment gap by selecting cohabiting partners who are in long-term relationships and have similar family structures but do not have any divorce risk from alimony changes. This approach ensures the validity of the identification assumption that in the absence of reform, both groups have the same trends in the outcome variables.

Interestingly, what the average impact misses is the distributional impact of the reform because the mean impact across the entire married population would also include the individuals who were never eligible for the treatment. Therefore, to understand the heterogeneity in effects and to potentially explore the mechanism, I further compare the behaviour of affected married couples to those who remained unaffected or less affected. Specifically, I exploit the variations in treatment caused by disproportionate legal impacts to define the treatment and control group. I am using the expected potential claim of spousal maintenance, which a partner is legally eligible for in the event of divorce, as a proxy to quantify the instability risk for each married couple. Based on the estimated proxy, I define four main risk groups of households: high risk, medium risk, low risk (treated groups) and no risk group (control group). The intuition is straightforward: the higher the dependency on spousal maintenance, the higher the risk. Imagine driving a car with full insurance versus no insurance—you would be much more cautious when the potential loss is high. For analysis, I use the difference-in-difference empirical framework and estimate the average treatment effects of vulnerable groups compared to the no-risk group. My identification assumption is that in the absence of this reform, married couples in all treatment groups have parallel trends compared to the no-risk group. As a robustness check, I perform the analysis using

[2]Legal regimes define the conditions to exit marriage. In fault-based regimes, the mutual consent of partners is necessary to dissolve a marriage, and if both parties do not agree, they need to fight in court and get a contested divorce. Under a no-fault regime, divorce can be reached even if one of the partners agrees, e.g. Unilateral divorce

[3]Matrimonial property regimes include community-based regime (equal division of marital assets and debts incurred during the marriage, title-based regime (based on ownership rights), and equitable distribution regimes (at the discretion of the court and protects the vulnerable))

cohabiting couples as a control.

The results of homogeneous treatment effects show a significant increase in overall married women labour force participation (4.7 percent) and a decrease in men participation by 3.8 percent (Table 4.1). To analyse the mechanism - if changes in perceived marital instability risk contribute to changes in the intra-household division of labour - I estimate if the probability of divorce has increased after the reform using spell data on the history of marriage and divorce and employing event history discrete time analysis. The existing studies (see (González & Özcan, 2013; Voena, 2015)) show that divorce-regulated reforms can significantly increase the perceived risks of marital dissolution by affecting the bargaining positions of couples within stable marriage and affect their economic decisions like savings and division of labour. In case of uncertainty around spousal maintenance alimony payments, reform might have discouraged divorce among weak partners who fear financial insecurity and encouraged strong partners to leave an unsatisfactory marriage knowing they do not have to fulfil their post-divorce legal settlements. However, I do not observe any significant change in the hazard of divorce after the reform, which shows that changes in the labour supply behaviour are not due to the changes in marital instability between partners (Table B3).

In analysing heterogeneous treatment effects, I find that married couples' responses vary depending on the expected financial consequences. Across the three defined vulnerable groups, including high risk, medium risk and low risk, I observe a significant impact on women's labour supply outcomes. Female spouses significantly increase labour market participation both at extensive and intensive margins. Post-reform, there is 6.6 percent increase in labour market participation of married women from the high-risk group, 5.3 percent women from the medium-risk group, and there is no significant impact on the low-risk group (Table 4.2). Previously employed women have increased their hours worked by 10 percent, and men have decreased their hours worked by 4.9 percent. These results are consistent with existing findings by (Bargain et al., 2012), (Stevenson, 2008) but opposite to (Schaubert, 2023) who has found that alimony reform 2008 significantly affected the women in West Germany who were in the defined low-intensity group. There is no statistically significant impact on husbands' labour market participation, but changes in the division of labour within the household signal the re-balancing of roles between partners.

The results are consistent with the hypothesis that divorce law reforms result in the rebalancing of responsibilities and division of labour between partners. The mechanism is the following: changes in spouse maintenance alimony affect couples' expectations and increase economic stability concerns. To ensure their future financial stability, couples rebalance their roles within the household. In the regime of unilateral divorce law, the partner who is more involved in child-rearing and domestic responsibilities may feel threatened by future financial consequences in case of potential divorce. Therefore, these households are more likely to respond strongly to such reforms, which means that how strongly they respond depends on their intra-household bargaining position and risk vulnerability. This channel typically does not work when the position of both partners is equally balanced, like in a household where both partners are similarly distributing time between leisure, domestic tasks and career and have a very close wage gap.

The increased expected financial instability risk can also affect the saving decisions of married couples, even if they are not facing any risk of marital breakup (González & Özcan, 2013). Under both homogeneous and heterogeneous treatment assumptions, I do not observe any significant changes in the saving rate of married couples, which is defined as the net monthly household savings to the net monthly total household income. However, I observe an increase in the absolute level of net monthly savings, which may be due to the increase in total household income. The overall insignificant impact on the saving rate of married households is consistent with findings from theoretical models (Voena, 2015). Under unilateral divorce law and with equitable distribution of property regime, married couples have less incentive

to increase their individual savings. Here, I cannot rule out the possibility of reallocation of financial assets after the reform. However, I do not have enough wealth data during the respective period to explore this dimension; therefore, it does not fall under the scope of this paper. However, I have wealth information for the pre-treatment period 2007, which allows me to analyse if married households with sufficient wealth respond to the reform. Even after controlling for shared wealth and assets, my findings remain consistent with the previous results.

The behavioural responses of couples may also vary depending on the household model (egalitarian versus traditional), income distribution, a potential beneficiary of alimony, the presence of children, and age cohort effects. The subgroup analysis shows that middle-income married women from both high and medium-risk groups significantly increase their labour market participation, while the response of low and high-income groups is positive but not statistically significant. Women who are already in the labour market but belong to high-risk groups because their level of participation is very low also significantly increase their level of participation by increasing the number of hours worked. I also observe that women who are raising children and take career breaks, significantly increase their labor market participation and hours worked. Looking at the impact across age cohorts, more young and middle-aged women have entered the labour market, and higher-aged women do not show a significant impact. However, women of higher ages who are already in the labour market significantly increase their working hours. Analysis of saving behaviour across different subgroups shows that the riskiest households where the wife is the primary earner — female breadwinner model — or those who belong to the middle-income group significantly increase their saving rate.

This paper first contributes to the literature by analysing the relationship between spousal legal protection rights and decisions on the division of labour between the partners. I also explored the impact of this reform on the saving decisions of married couples, and there was no existing empirical evidence that analyses couples' saving decisions directly affected by reform or implicitly affected by changing income sources. Secondly, in my empirical methodology, I identify the impact using different comparison groups, which supports the robustness of my key findings. Thirdly, I contribute by expanding my sample and considering the impact on all married German households from both East and West Germany, as the reform happened at the state level. Finally, this paper also contributes to understanding the long-term consequences of the reform by analyzing the dynamics of savings and labour market outcomes. The changes in household behaviour, if proven durable, can have important structural economic changes and lead to long-term economic consequences. The paper shows that married women have persistently increased their labour market supply. The increase in labour market outcomes for these women increases total household income, provides future economic stability, increases self-sufficiency, and improves the overall well-being of the family. From a policy implications perspective, I have found that although reform might have increased the financial vulnerability of women who might have divorced right after the reform, it incentivised self-sufficiency among those in stable marriages. The impact is opposite to the previous family-friendly tax policy, specifically, the generous tax benefits for married couples, "Marital splitting" ("Ehegattensplitting") which incentivises traditional heteronormative gender roles, and most women decide to stay at home.

In the forthcoming sections, section 2 presents the theoretical framework, encompassing the related literature, theoretical model, and background of reform. Section 3 details the empirical methodology, including data, sample, key variables, and econometric specifications. Section 4 discusses the estimated results regarding the behavioural responses of households. Section 5 examines the dynamic impact on decision variables. Finally, Section 6 concludes with a summary of the findings.

2 Background

2.1 Related Literature

Abundant literature shows how legal changes affect households' well-being and economic behaviour. The most common empirical methodology is exploiting the variations using divorce law reforms. There is evidence that marital instability and separation rates between couples are significantly affected by social, cultural, legal, religious and financial factors. Changes in divorce rates after a divorce reform, like unilateral legislation, are plausible in the literature. The liberalisation trends in divorce laws (no-fault/unilateral divorce laws) around the world spiked divorce rates ((Friedberg, 1998) and (Wolfers, 2006)). In a panel of 18 European countries from 1950 to 2003 (González & Viitanen, 2009) investigated the extent to which the legal reforms have contributed to an increase in the divorce rates across Europe by making marital dissolution an "easier divorce". They found an average increase in divorce rates (0.3-0.4 annual divorces per 1000 people) in countries that allowed unilateral divorces. Because of the specificity of institutional setups, most existing research is country-specific.

The recent papers discuss the impact of reforms on various social and economic outcomes such as savings behaviour (González & Özcan, 2013), labour supply (Gray, 1998; Stevenson, 2008; Voena, 2015), marriage-specific investments and risk of marital dissolutions. Both empirical and theoretical literature suggest that household behaviour depends on the relative bargaining power of each spouse. The relative bargaining position of a partner may significantly rely on the income of the partner (Browning et al., 1994) and also affect their resource allocations (Thomas, 1990).[4] However, many other factors outside the household's environment may affect the intra-household decision process, such as the supply of men and women in the marriage market and legislation. Laws regulating alimony, right to marry, and marital property divisions may redistribute power within marriage and significantly affect behaviour (Chiappori et al., 2002). Using the theoretical model, (Chiappori et al., 2002) shows that whenever the distribution factors under consideration are favourable for one partner, his/her bargaining position within the household improves.

The findings on the impact of spousal maintenance reform on women's labour supply are inconclusive. A recent study by (Bredtmann & Vonnahme, 2019) investigated the effect of the 2008 alimony reform in Germany on first-time married couples and found that it did not significantly affect women's labour supply in their sample. Extending the literature, (Schaubert, 2023) found that reform has dramatically increased women's labour supply from West Germany and in longer marriages, including those with a history of remarriage.

Earlier literature suggests that legal reforms' impact on couples' behaviour largely depends on the laws governing property divisions (Gray, 1998). While exploring the impact of unilateral divorce reform in the 1970s in the United States on married and single women labour market participation, (Stevenson, 2008) finds a substantial increase in labour supply participation, regardless of property division. The paper highlights that such changes in law change the returns to specialization in household production by reducing the time women expect to spend in marriage and increasing the returns to invest time in outside options. Using a dynamic model, (Voena, 2015) shows how unilateral divorce law in the United States affected the couples' intertemporal behaviour during marriage. The paper showed when counties which follow equitable property division law imposed unilateral divorce law, the women's labour

[4] This study shows that resources in the hands of mothers appear to have a larger effect on households and health of children than resources controlled by fathers.

force participation decreased by 5 percentage points and asset accumulation increased. She argues that unilateral divorce reforms result in a lack of commitment, and when property is meant to be equally divided after divorce, it also distorts asset accumulation.

The vast literature on consumption, savings and labour supply shows that households make optimal decisions conditional on future expectations. Based on rational expectations, these models consider uncertainty regarding economic stability, which is generally defined in the context of labour income or capital income uncertainty. (Krueger et al., 2023) empirically show the impact of income shocks on the financial behaviour of the households in the short and medium term. Using panel data from the Italian survey of household income and wealth from 1991 to 2016, they found that shocks to household labour income led to changes in consumption behaviour and household wealth. The risk of future financial stability arising from marital breakups is vastly ignored in the literature. There are different channels through which changes in alimony - marriage insurance - may result in household economic decisions regarding saving, investment preferences and labour supply. From the perspective of theoretical literature, consumption, savings, and portfolio choice models do not account explicitly for life-changing events or family transitions because of the increasing numerical complexity of such models. However, the recent studies by (Love, 2010) and (Hubener et al., 2016) (2016) have modelled family life events and predicted the behaviour of households over the life cycle. The key findings suggest that events like marriage, divorce, widowhood, etc., can have long-lasting implications for the economic decisions of households, such as consumption, labour supply and investment decisions.

This paper builds on extensive literature that analyses the potential changes in the economic behaviour of married households after the reform. To date, there is no empirical evidence on how this reform affected individuals' savings decisions in "intact marriages". Furthermore, as existing research shows a significant increase in labor market activity of women after the reform, if prove durable, can have critical structural changes. Therefore, to explore if structural changes can have long-term economic consequences for couples, this paper investigates the dynamic effect of reform on the labour supply of women.

2.2 Theoretical Framework

Changes in policies and legal reforms may have critical and significant effects on the social outcomes of economic agents. It is important to understand the impact on married couples, among whom a joint complex negotiation process operates. In theoretical literature, collective household models emphasize the heterogeneity of preferences and intrahousehold bargaining process among different household members to understand the household decision-making process (Van Klaveren et al., 2011). Divorce law-regulated reforms such as grounds of divorce, property division rights, child custody rights, child support, and spousal maintenance can influence economic behaviour through the following mechanisms. First, such legal reforms affect the bargaining positions of partners within the marriage and increase marital breakup risk. The increased probability of divorce - marital instability incentivises the partners to renegotiate and affects the decisions of households. For example, the unilateral divorce law is generally associated with higher divorce rates because it makes the divorce more accessible for the partner who wants to exit the relationship and improve his position within the household.[5] Second, these reforms may affect the allocation of resources and assets within and outside marriage, thereby affecting the negotiation dynamics of the households. However, the underlying mechanism linking legal reform and household

[5]"A husband and wife would both consent to a divorce if, and only if, they both expected to be better off divorced." (Becker, 1993). Literature shows that most of the marriages which end up with divorces after changes in divorce regulations find higher value outside marriage than within marriage

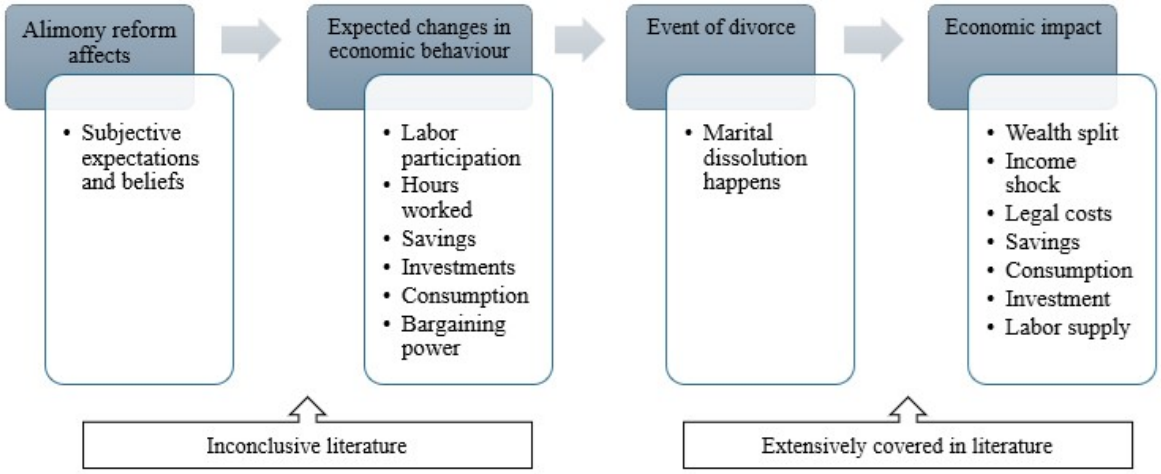
economic behaviour depends on the specifics of the law. It is important to note that households do not immediately respond to such policies; instead, these reforms lead to long-term behavioural adjustments that often become evident later and may result in new economic outcomes.

The reform in question, which changed the criteria for spousal maintenance, may also potentially affect partners' inter-household bargaining position. Partners who are more involved in child-rearing and put aside their careers, hoping to gain maintenance in the event of divorce, are particularly vulnerable groups. There are two primary ways spousal maintenance reform may affect the economic behaviour of married households in intact marriages. First, changing grounds of maintenance claims might have affected the perceived risk of divorce by making a potential divorce cheaper for one partner and expensive for the other, thereby affecting marital instability and economic decisions within the household. For example, in a household with a male breadwinner system, the husband may become less concerned about the financial repercussions of maintenance payments after a divorce.* The perceived risk of divorce is the individuals' subjective expectations regarding their likelihood of ending a legal relationship. These perceptions are different from the actual risk of divorce. They can result from many factors, such as the quality of the relationship, personal characteristics, experiences, social norms and culture, and external factors (like legal reforms). When a couple's perceived risk of divorce changes, it may affect their expectations and behaviours. For example, a high perceived risk of divorce for a housewife can influence her to start work to financially protect herself in case of an event of divorce and reduce her commitment to household tasks. Regardless of the event's occurrence, the individuals may modify their behaviour. Most of the existing research has focused on the consequences of divorce and its implications at individual, household and aggregate levels. There is very little work that focuses on the pre-event part, and that, too, has inconclusive findings. (González & Özcan, 2013) studied the causal impact of increased risk of marital dissolution on the savings behaviour of married individuals using the legalization of divorce in Ireland in 1996 as an exogenous shock. The paper finds an increase in the propensity to save married individuals due to the rise in the risk of divorce.

Second, the reduction and limitation of post-divorce spousal maintenance payment might have affected the concerns of financial troubles for the weaker partners, thereby affecting their behaviour. Alimony payments function as a form of marital insurance between partners, fostering mutual trust and allowing for the distribution of responsibilities. In a typical male breadwinner society, such as in Germany, women often take on household responsibilities while men are the primary earners. In the event of a divorce, women are not left disadvantaged as they can claim alimony, thereby ensuring financial support. However, reductions in alimony payments or the imposition of stricter conditions for obtaining alimony can significantly impact the partners' bargaining power. These changes may alter the traditional distribution of tasks within the marriage, potentially leading to shifts away from the conventional male breadwinner model. Figure 1 shows that alimony reform affects the subjective expectations and beliefs of married couples in stable marriages. These expectations may include the marital dissolution risk or post-divorce financial instability risk. The households are expected to adjust their behaviour even if the event of divorce does not occur.

Regardless of the channel, the reform may lead to changes in marital dynamics and household decisions. Therefore, examining the dynamics of economic variables in households after such policy interventions can help to understand their impact and behavioural adjustments. Women, in general, are the main alimony receivers and dependent on ex-husbands after divorce through marital alimony and childcare alimony. The nature of the reform has increased(decreased) the expected financial burden for women(men) and, therefore, increased(decreased) the risk of divorce for women(men). The change in this bargaining position of men versus women can affect various choices of couples. These choices may include con-

Figure (1) Alimony Reform and Economic Behaviour



sumption patterns, investment decisions, participation in the labour force, health and well-being, social interactions, housing choices, division of household chores and family planning. Several studies show that changes in divorce-regulated reforms positively affect women's labour supply. The alimony reform may also result in the shift of bargaining power within the household and may affect the labor choice decisions of households. e.g. if a household is running on male breadwinner concept, the risk of having no marital alimony may encourage the women to pursue her career to avoid any future financial risk. Second, alimony reform may also affect the investment decisions of the couples if the expected income stream changes after the marriage dissolution. It may affect the risk preferences of both spouses, thereby affecting the investment choices of the households. For example, an increase in the risk of divorce may create an incentive for married households to shift their savings from illiquid to liquid assets.

The literature on saving decisions is generally inconclusive; however, intuitively, the reduction in marital alimony is a future negative income shock for potential alimony receivers; therefore, a negative shock should translate into an increase in precautionary savings. Furthermore, the legal process of divorce involves a significant amount of time and money for an average household. Therefore, individuals may increase their precautionary savings to compensate for the legal costs of divorces, if any. thirdly, the expected distribution of assets after the dissolution of marriage can make the savings risky therefore, couples should increase their consumption by reducing their savings. Therefore, the effect of alimony reform on savings decisions is ambiguous.

2.3 About Divorce Reform 2008

Before delving into specifics of reform, it is important to understand alimony payments' criteria and allocation. Alimony is the maintenance obligation recognised in German maintenance law and realised after the dissolution of marriage. There are different types of alimony obligations in a marital relationship, including spousal support during marriage (Familienunterhalt), Child support ("Kindesunterhalt"), separation support ("Trennungsunterhalt") and post-marital support("Nachehelicher Unterhalt"). The last three obligations realise if the spouses decide to separate and eventually get divorced. It is possible that within a family unit, one spouse is the main earner and the other looks after domestic tasks. Therefore, after divorce, post-marital spousal maintenance ("Nachehelicher Unterhalt") can be claimed based on disadvantages due to marriage and the inability to make one's own living. Although the amount and

paying duration for alimony payments depend on individual cases but German law has specifically described several circumstances which can justify this claim. For spousal maintenance payments, one main criterion is the disadvantages during marriage, such as career breaks that may lead to unemployment later on in life. German law on spousal maintenance was quite generous for the weaker partner till the reform was enacted. Before the reform, the ex-partner had an automatic claim on the income of the other partner, conditional on his income level, duration of the relationship, etc. However, after the reform, this claim can only be made through the court if the ex-partner proves that he/she is eligible to claim financial solidarity from the ex-partner. The priority ranking of spousal maintenance was also put at the end, which was previously equivalent to childcare maintenance (see (Schaubert, 2023) for further details).

The great social medial coverage significantly increased public attention and increased their awarness about the key aspects. In March 2009, a survey (BertelsmannStiftung, 2009) of 1,560 randomly selected households was conducted to explore if public is aware of the new divorce law. Total 792 individuals were divorced or separated with children below age 25 and were categorised as potentially affected households, whereas, 768 people were married or unmarried couples with children below age of 25, who constitute potentially affected group. The survey results show that 79 percent households have heard about the law while 16 percent were not aware of the reform and 5 percent did not specify. Total 17 percent of households know all the details of law and 22 percent were affected by the law either as a maintenance payer or a recipient of alimony. One out of three people from those who were directly affected by the law, knew all the details of the law.

3 Empirical Methodology

3.1 Data and Variables

The paper uses German Socio-Economic Panel (GSOEP) by German Institute for Economic Research (DIW), which is one of the largest and longest-running multidisciplinary household surveys since 1984. I have combined different datasets of GSOEP to run the analysis including individual retrospective datasets on marital and cohabitation histories, individual and households panel dataset for income and labor market variables, individual and households level wealth datasets. The crucial feature of this dataset is that it provides detailed information about the cohabitation and marital histories of individuals since their birth. Moreover, longitudinal nature of dataset allows to control for unobserved heterogeneity that may significantly affect the selection into marriage. All participants of survey provide information about their cohabitation, marital and fertility history. Using this data, I can track the duration of a marital relationship of each married couple.[6]. For few households I can track if the partner has changed if they drop out of the panel for some time. Therefore, in case of a partner change for both legally married and cohabiting couples during 2007 to 2009, I have dropped those households, with an aim to control for the pretrends.

The dependent variable to understand the savings behaviour is the saving rate. Saving rate has been estimated as a ratio between the monthly reported savings of the households to the total monthly net

[6]The data is in spell form and provides one observation for each spell and duration of that spell. I have converted the data from spell to panel structure and merged it with panel dataset. Spell dataset does not provide explicit information on cases of remarriages therefore, I assume that the transition from single to married are the instances of first marriages. The cases when partner number is changed or the spell number is changed signal the spells of remarriage. In case of multi events in a year, I assume only one event

household income, following previous literature (Fuchs-Schündeln et al., 2020). This variable shows the proportion of savings that households left aside each month. For monthly income, households are asked; "if you look at the total income of all members of the household, how much is the monthly household net income today (Euro per month)? There are households which are employed but they have not reported their monthly net household income. For these households, I have used monthly net labor income as a proxy. All income and wealth-related variables have been adjusted to 2019 prices using the Consumer Price Index (CPI). This adjustment ensures that the figures are comparable over time by accounting for the effects of inflation. For monthly savings amount, the participants are asked about their monthly households level savings using following question in the questionnaire. Do you usually have a certain amount left over each month that you can save or set aside, for example, for larger purchases, for emergencies or for wealth formation? - [Yes], namely (euros per month). To understand the labor market behaviour of households at extensive and intensive margins, I use employment status of the spouses which are separately reported and also their number of annual hours worked.

Since the economic behaviour of the households is largely affected by the composition and characteristics of the household members, e.g. number and age of children, age difference between spouses total household income and intra-household distribution of income (Freyland, 2004) therefore, I am also controlling for household composition and characteristics. For example, there is a sharing of resources within married households and even if wife decides to completely look after the household tasks, she is equally utilising the households resources. Therefore, if the resources are enough, her decision to participate in labor market is directly affected. Therefore, considering total net household income controls for resources available to both partners. The variable education is categorized into three groups: less than high school, high school and more than high school. According to educational system in Germany as mentioned in the documentations available at SOEP Companion (2021), less than High School means intermediate or lower secondary school (Realschule and Hauptschule), High School means upper secondary school, certificate of aptitude for specialized short-course higher education, apprenticeship and specialized vocational school (Abitur, Fachhochschulreife, Lehre, Berufsfachschule) and more than High School covers school of health care, specialized college of higher education, post-secondary technical, college, technical university usually requiring practical training as part of the studies and civil service training (Schule des Gesundheitswesens, Fachhochschule and Universität).

3.2 Sample

I have applied several restrictions to finalize the sample of married and cohabiting couples. The married sample includes the couples which were married before the alimony reform took place. The cohabitation sample includes the couples who are not legally married during the observed period and they are in relationship before alimony reform. The pre-existing differences between the cohabiting couples and married couples are controlled by longitudinal nature of the data. Since cohabitation is usually of short duration and considered non-cooperative units (Moreau & Lahga, 2011), therefore, I select the cohabitation couples which are in long term relations but not legally married during the observed period. Keeping a stable and clean control group is important to fulfill the parallel trend assumptions and to get unbiased average treatment effects. Since SOEP has been updating its sample from time to time by including refreshment samples, immigrants, refugees, low income and high income groups. However, as the reform was implemented in January 2008, therefore, I only keep the sample that participated in the survey before 2007, so that I have enough information to control for the pretrends before the reform. I also drop the sample of married couples which are separated, but not divorced yet. I have made sure that both married and cohabiting couples do not change their partners during the investigated period. Moreover,

I have dropped the samples of immigrants as their marriages come under international marriages laws. Table 3.1 shows the descriptive statistics of final sample of cohabiting couples and married couples considered for analysis. The final sample includes couples between age 25-55 years from the period 2003 to 2013. Table B1 shows the descriptive statistics of high, medium, low risk groups and non-eligible married couples. It is interesting to see that across all risk groups the share of egalitarian couples is significantly higher however, observable wage gap is significantly higher for vulnerable groups.

Table (3.1) Descriptive Analysis: Cohabiting versus Married Couples

Treated	**Mean**	**SD**	**Min**	**Max**	**N**
Cohabiting Couples					
Female Age	41.2338	7.6166	25	55	1065
Male Age	39.2254	8.0205	25	55	1065
Female Education	2.2237	0.5629	1	3	1064
Male Education	2.2237	0.4863	1	3	1055
Children (below 18)	0.8770	1.0004	0	4	1065
Region (West=1)	1.4854	0.5000	1	2	1065
Male Net Labor Income	1634.668	1273.788	0	16942.33	1065
Female Net Labor Income	1204.237	836.2548	0	5082.699	1065
Net Monthly Savings	306.4626	538.7444	0	7580.212	1035
Female Hours Worked	1701.982	883.2443	0	5414	1065
Male Hours Worked	1980.880	865.0868	0	4263	1065
Egalitarian share	0.8366	0.3699	0	1	1065
Male Breadwinner	0.0695	0.2544	0	1	1065
Female Breadwinner	0.0601	0.2378	0	1	1065
Legally Married Couples					
Female Age	45.1761	6.4249	25	55	14623
Male Age	43.0743	6.5992	25	55	14623
Female Education	2.1850	0.5270	1	3	14608
Male Education	2.2364	0.5078	1	3	14617
Children (below 18)	1.4494	1.1422	0	12	14623
Region (West=1)	1.2766	0.4473	1	2	14623
Male Net Labor Income	2419.112	1456.604	0	17773.97	14623
Female Net Labor Income	861.9017	837.9616	0	16887.2	14623
Net Monthly Savings	336.6045	537.0224	0	11258.13	14046
Female Hours Worked	1158.706	869.3657	0	4994	14623
Male Hours Worked	2184.696	740.5079	0	7506	14623
Egalitarian share	0.7683	0.4219	0	1	14623
Male Breadwinner	0.1816	0.3856	0	1	14623
Female Breadwinner	0.0353	0.1845	0	1	14623

Note: Table 3.1 shows descriptive statistics of the whole sample including mean, standard deviation, minimum, maximum and total number of observations. The key variable includes partners ages, education, number of children, monthly savings binary variable and amount, monthly household income, details about partners' employment status, annual hours worked and region.

3.3 Econometric Specification

To investigate the differential impact of the reform across different types of households, I use quasi or non-experimental difference in difference (DID) framework by (Wooldridge, 2021) for static analysis

and (Callaway & Sant'Anna, 2021) for dynamic analysis assuming all the treatment timing is 2008, the year of reform. Under parallel trends assumption (Figures A2, A4, A4) and no anticipation of the event, DiD approach compared the changes in the outcome of treated individuals with changes observed in control units and the observed differences after the treatment between the two groups reflect Average Treatment Effects of the treated (ATET). As there are many recent developments in DID methodology therefore, to ensure robustness check, I will first assume homogeneous treatment effects and then heterogeneous treatment effects. This approach allows to identify and estimate the average treatment effect in multi-period settings and with variations in treatment effect. Next, it is important to find a control group that has no or less effect of reform and can represent a source of variation in the risk of marital dissolution. The cohabiting couples which are living partners but not legally married represent the ideal control group in this regard. Cohabitation is substituting marriage in Germany and increasing this form of living arrangement especially among the young people is getting very common. Although in general, cohabitation is temporary but a vast number of cohabitant couples get married. It may be also true that future marriage decisions of cohabiting couples are affected by the reform however, the law does not directly affect their permanent income or the expected future income as they have no risk of divorce. There are few concerns which may be important to consider to compare the married and cohabiting couples especially the self selection into marriage? Another challenge is to account for the unobserved heterogeneity for example, cultural effects or individual preferences and risk-taking characteristics for savings and consumption. The longitudinal dataset allows to control for unobserved heterogeneity between the treatment and control group and exogenous variation allows to establish a causal relationship. Therefore, I assume that in the absence of reform and after conditioning on covariates including age, education, duration of relationship and number of children, married couples and cohabiting couples meet the parallel trend assumption. I have also performed pre-trends analysis to ensure to avoid confounding effects.

To ensure that my results are not affected by the selection of a specific comparison group, heterogeneous treatment analysis, provides another way to test this assumption. In short, I will first do analysis assuming homogeneous treatment effects where I assume that all married couples are equally affected by the reform and compare the behaviour of married couples versus cohabiting couples. Then I assume heterogeneous treatment effects which means that there are certain groups of married couples who are more likely to be affected by reform and compare the behaviour of high risk married couples with no risk married couples. This empirical approach proves the robustness of my key findings to the empirical methodology and the choice of comparison group.

The DID compares the changes in the outcome of treated units with changes observed among non-treated/control units. Under the Parallel Trends Assumption (PTA), differences in those changes (DiD) identify the average treatment effects of the treated units (ATET). The static regression model is as follows:

$$y_{it} = \alpha + \beta_1 T_i + \beta_2 Post_t + \beta_3 T_i Post_t + \theta Wife_{it} + \phi Husband_{it} + \eta Household_{it} + \lambda_t + \zeta_i + \epsilon_{it} \quad (1)$$

where, y_{ijt} is the dependent variable for household i group j and time t, α is the intercept and T_{ij} is the indicator for treatment status. The variable $Post_t$ is a dummy variable and equals 1 for years after reform. Interaction variable $T_j Post_t$ is the key variable of interest and its coefficient captures the effect of reform on treated group. Variables in $Wife_{it}$ include wife characteristics in the case of legally married couples; otherwise, cohabiting female partner characteristics. These features include female age,

second degree polynomial of female age, and female education. Variables in $Husband_{it}$ include husband characteristics in the case of legally married couples; otherwise, cohabiting male partner characteristics. These variables include male age, second-degree polynomial of male age, and male education. I also control for other variables in $Household_{it}$, including a number of kids, single or double-income earning households, net household income and its second-degree polynomial, and region, including east or west Germany. Moreover, variables λ_t, and ζ_i control for time and household fixed effects.

$$y_{it+h} = \alpha + \beta_1 T_i + \beta_2 Post_t + \beta_3 T_i Post_t + \theta Wife_{it} + \phi Husband_{it} + \eta Household_{it} + \lambda_t + \zeta_i + \epsilon_{it} \quad (2)$$

where $y_{i,t+h}$ represents the correspondent dependent variable forward horizon in $h = 0, 1, 2, 3, 4$ after the reform at time zero (year 2008), ζ controls for the characteristics of the individuals, and $y_{i,t-j}$ are the lags of the dependent variables.

My empirical specification ensures unbiased estimates, and eliminates potential sources of bias. First, to deal with potential selection into marriage effects, I am keeping the fixed sample of married people who got married before the reform and remained in married after divorce. There is also potential of selection bias into marriage or living cohabitation - individuals that choose to marry may have different mindset, financial preferences, risk tolerance or work attitude relative to those who do not marry. These groups may also differ because of their legal status such as married couples get a tax benefit in Germany which cohabiting couples do not get. Moreover, other than legal reasons, they may differ in terms of their socio-economic status and stability of relationship that may directly affect their economic behaviour. The unobserved heterogeneity between the two groups may raise endogeneity concerns. However, I reduce this risk by controlling for pre-trends between the two groups and ensuring parallel trends in the outcomes variables. Another source of endigeneity is the reverse causality which may arise if the economic behaviour increase the family friendly legal frameworks e.g. increase in egalitarian houshold structure lead to more friendly policies. However, as this law is completely exogeneus and are not actually affected by such gender norms therefore, there is no concern for reverse causality and helps to reduce the risk of endogeneity. The other two potential biases can be measurement/reporting bias and sample bias. Therefore, econometric methodology, DiD helps to control time invariant unobserved heterogeneity and the pre and post period differences can credibly attribute to observed changes to the reform rather than other factors.

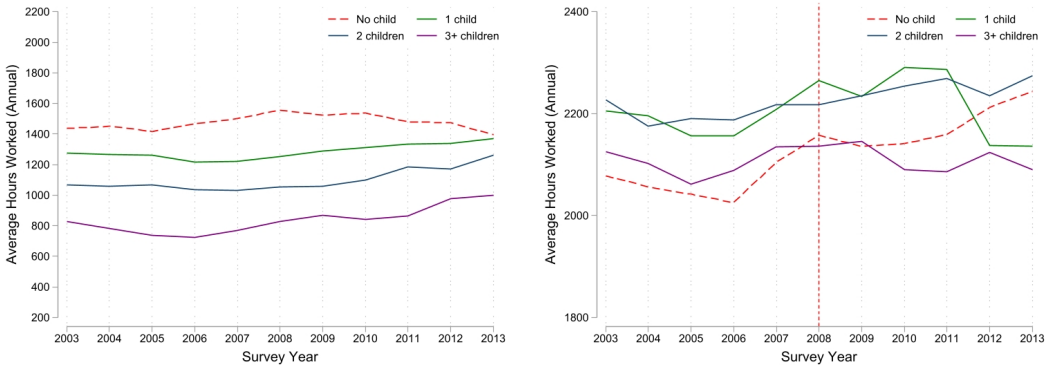
4 Behavioral Responses of Married Households

4.1 Gender-specific Labor Market Outcomes

Before presenting empirical estimates, I revisit the labour market trends among married households. Because of the unavailability of individual-level savings information, gender-specific effects on savings are not possible. Figure 2 shows the average annual hours husbands and wives work using the household-level dataset. In married households, women, on average, work fewer hours than their husbands. The average annual hours worked for women decreases significantly with every additional child. On the other hand, there are more variations in average annual hours worked for men. Specifically, in years around reform, husbands increase their yearly working hours when they become first-time fathers - justifying their increasing financial responsibility. With the second child, they slightly reduce their annual hours

work, which shows re-balancing work and child care. Surprisingly, with the arrival of a third child, the number of hours significantly drops, signalling a significant level of time allocation towards child care. Figure 3 shows similar trends for monthly net labour income for married women; however, for married men, I observe that, on average, having more children leads to higher earnings. The trends in the data show that children significantly affect the career choices and earnings of women - commonly known as the motherhood penalty and quite debatable to explain the gender pay gap.

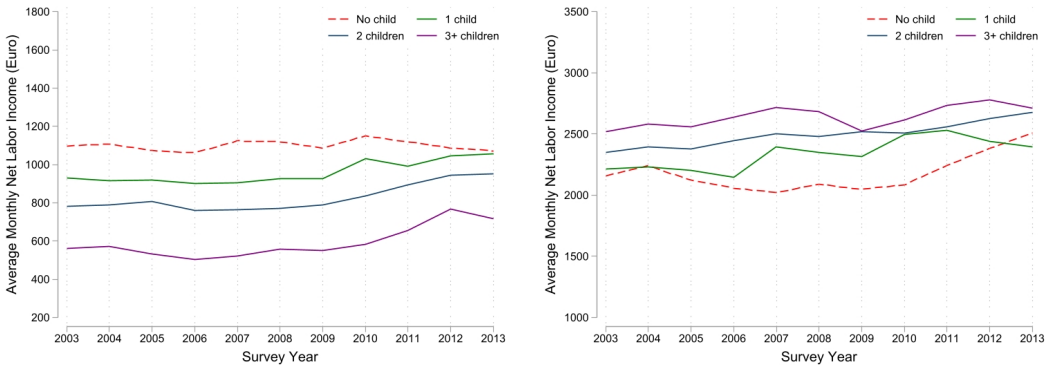
Figure (2) Average Annual Hours Worked by Gender



(a) Wives (b) Husbands

Therefore, spousal alimony payments within this family structure play a role as marriage insurance. Women take the role of housewife and get motherhood penalty, because men cannot give birth or breast-feed babies. These joint decisions are voluntary but are secured by legal marriage insurance. Any exogenous shock to this legal promise affects the decision process of couples. However, the income difference between the spouses is the primary determinant of potential payee and payer. Therefore, the couples with small differences are not eligible for such claims.

Figure (3) Average Monthly Net Labor Income by Gender



(a) Wives (b) Husbands

4.2 Effects of Reform on Married Couples

I begin my analysis by assuming a homogeneous treatment effect of the reform focusing on all married couples compared to the cohabitation couples. I examine the impact on savings and labour market outcomes. By "homogeneous treatment," I assume the reform similarly affects all married households. In

reality, married households affected by alimony reform are not uniform, and the impact varies depending upon various factors such as financial circumstances, especially the reliance on future spousal maintenance in case of marital breakup. However, conducting homogeneous treatment effects helps achieve two key objectives. First, it allows for estimating the average impact on married households in stable marriages under the assumption that everyone is equally affected by the change in law. Secondly, using cohabiting couples as a control group provides a robustness check to ensure that my results are consistent and not influenced by the choice of a specific control group. This approach strengthens the validity of my findings in the subsequent sections by demonstrating that the estimates are robust across different comparison groups and methods.

Technically, I define the treatment dummy variable as "1" after the reform for the treated individuals (i.e., married couples) and "0" for the control group (i.e., cohabiting couples) before and after the reform. I estimate the average treatment effect using difference-in-difference approach for panel data (Wooldridge, 2021) and controls for time and household level fixed effects. Table 4.1 shows the estimates of the average treatment effect on married couples in intact marriages. The results show a significant positive impact on female labour participation (4.7 percent), and married men significantly decreased their labour market participation by 3.8 percent. The couples share the resources in a married household, including their total household income. The decision on who will participate in the labour market largely depends on the value of the increase in household income versus an increase in childcare expenses. If this difference is negative, one of the partners takes responsibility for taking the children. Therefore, after the reform, husbands and wives redistribute their roles. The impact on annual hours worked by men and women already participating in the labour market is not statistically significant, which may signal that these households do not feel the pressure of post-divorce instability risk and continue with their current roles.

Although these estimates are quite intuitive, as mentioned before, looking into the distributional impact of reform is necessary to identify the vulnerable groups. Moreover, further analysis can also facilitate the identification of the underlying mechanism through which such legal changes may affect family decisions.

Table (4.1) Difference-in-Difference Estimates with Homogeneous Treatment Effects

Dependent Variables	Savings Rate	Female Participation	Male Participation	Female Hours Worked	Male Hours Worked
	(1)	(2)	(3)	(4)	(5)
ATET	-0.005	0.047*	-0.038*	0.1390	-0.1381
	(0.007)	(0.022)	(0.084)	(0.079)	(0.028)
Year FE	Y	Y	Y	Y	Y
Individual FE	Y	Y	Y	Y	Y
Control Group	562	576	576	576	575
Treatment Group	1445	1455	1455	1454	1455
Observations	16,566	17,504	17,504	14,642	16,791

Note: Figure 4.1 shows the the Average treatment Effect on Treated (ATET) when I assume that alimony reform has the same impact on all married couples - post-divorce instability risk is same. Column 1-5 shows the impact on different economic variables. Column 1 captures the impact on savings rate, which is defined as the ratio of total monthly savings of households to the total households net monthly income including labor and other income. Monthly savings amount are the average monthly savings reported by head of the households. Column 2-3 shows the labor market participation of wives and husbands defined as binary variable that is equal to 1 if the employment status is 1 and 0 otherwise. Column 4-5 shows the log of annual hours worked of wives and husbands, conditional on their participation in the labor market. Estimates are run by using difference-in-difference by (Wooldridge, 2021) and controls for time and households level fixed effects. The numbers enclosed in bracets show the robust standard errors. The last rows in the table shows number of married households in the control group (cohabitation couples) and treatment group (married couples) and total number of observations.

4.3 Mechanism: Marital Instability

The existing literature shows that the legal reforms regulated by divorce laws increase the probability of divorce. Let's suppose the change in legal regime from fault-divorce to unilateral-divorce, which means that divorce can be granted if one of the partners wants to exit the relationship. This reform increases the bargaining power of the partner who wants to exit and reduced the position who wants to stay in marriage. This shift in bargaining power can affect the decisions of the households. To analyse if the alimony reform 2008 affected the marital stability of the partners, and if this is one of the potential channels that might have affected the decisions of the households, I estimate the probability of divorce using the marriage and divorce data. It helps to achieve two primary objectives. Firstly, although the reform does not explicitly support any gender, however, given the traditional hetero normative gender roles, it makes husbands better off and wives worse off. If this is the case, it should be visible from the differential outcomes of marital stability across genders. Secondly, if differential impact is proven, it shows that it further leads to imbalances between bargaining positions within marriage. Moreover, it also helps uncover reform's significance and substantial impact on the marriage market.

To empirically estimate the gender-specific impact of reform on the marital stability of then-married couples, I use a sample of married and divorced individuals for the period 1978-2021. During this period, there were a total of 6,062 events of divorce for a total sample of 50,578 individuals.[7] The divorce process is a time-dependent and dynamic process as the probability of divorce between a couple significantly varies depending on individuals' characteristics like age, education, duration of relationship, number of previous marriages and number of children; therefore, it is important to know the life histories of individuals since birth such as their date of first marriage, divorce, widowhood, remarriage etc. The state and time-dependency of the divorce process and censoring issues in the dataset make the event history framework an ideal choice to determine if the risk of divorce increased after alimony.[8]. Using discrete-time events history analysis following (Maurer & Usman, 2023), I estimate the hazard of divorce for husbands and wives after the reform. Moreover, it also proves reform's significance and substantial impact on the marriage market.

The discrete hazard of divorce can be defined as follows:

$$h(t/x) = Pr(T = t|T >= t; x) \tag{3}$$

where h(t/x) is the hazard of divorce in calendar year, t given covariates, x. The hazard of divorce can be estimated using logistic regression on data in event history structure.[9]. The risk is estimated using Logit regression given below:

$$Pr(Divorce = 1|x) = \frac{exp(\beta_0 + \beta_1 x_1 + ... + \beta_k x_k)}{1 + exp(\beta_0 + \beta_1 x_1 + ... + \beta_k x_k)} \tag{4}$$

Figure A1 shows the distribution of hazard of divorce across age by gender. The hazard of marriage dissolution is higher for women than men across all age groups till around 50. After this period the

[7] For window 2004-2012, total married individuals are 20,282 and 1,239 events of divorces can be observed

[8] This is the period after the first divorce reform in 1977

[9] Time to the event data structure is crucial to perform this analysis where each observation for each year is a record for individuals that shows if the event happens to happen (=1) or not(=0). For further details, please check

hazard relatively increases for men. Figure also shows the distribution of hazard for the period 2008-2021 has shifted towards the right compared to period 1978-2007. There are two interesting information. First, after the unilateral law reform, the hazard of divorce by age has greatly increased. Second, the hazard of divorce during 2008-2001 is highest for the age above 40 in the post reform period compared to pre-reform period. This signal that on average, risk is increasing at older ages and probably for long duration marriages. Also, delay marriages and more cohabitation relationships may provide the reason that risk of divorced at younger ages have reduced.

Table B3 shows the estimated coefficients based on discrete-time event history analysis. The estimates are based on individual-level datasets from the GSOEP panel survey for the period 1978-2022. Column 1 shows the probability of divorce for the time window 1978-2021, and column 2 shows estimations based on the window 2004-2012.

Following is the regression specification.

$$D_{i,t} = \beta PostReform_t + \gamma AgeSplines_{i,t} + \theta DurationSplines_{i,t} + \rho Children_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t} \quad (5)$$

The main variable of interest is the interaction term post reform and gender, which captures the gender-specific risk of divorce after divorce. Table B4 shows the marginal effects for two windows. The results suggest that, on average, the risk of divorce is higher for women relative to men. However, there is no significant impact of the reform on the probability of divorce. In contrast to previous studies, these findings do not suggest an impact of reform on marital instability between married couples. This proves that there is no change in the perceived risk of marital instability, and it is not the channel through which reform may affect the behaviour of the couples.

4.4 Mechanism: Post-Divorce Instability Risk

In this section, I estimate the heterogeneous impact of reform based on expected spousal alimony loss.[10] Therefore, those with high expected loss would behave differently than those with low or negligible loss. I estimate married households' post-divorce instability risk exposure based on expected alimony payment in case of divorce. The higher the expected loss, the higher the vulnerability of those households. This anticipated risk of post-divorce financial consequences affects their beliefs and expectations about future financial stability caused by idiosyncratic income shocks from alimony reform, reshaping their current behaviour and economic decisions.

As mentioned, I estimate the expected loss of maintenance payment for all households in case they get divorced in 2007. The basic calculation for spousal maintenance "eheliche Lebensverhältnisse" is as follows [11]:

$$\text{Expected Spousal Maintenance} = \frac{\text{Income of Primary Earner} - \text{Income of Secondary Earner}}{7} \times 3 \quad (6)$$

The duration of spousal maintenance payment is not standard and may vary depending on the duration

[10] The economic literature, specifically, Life Cycle Hypothesis and Permanent Income Hypothesis, suggests that the savings behaviour of households significantly depends upon their anticipated changes in future income.

[11] For further details (http://www.german-family-law.de/alimony-and-child-support.html, n.d.)

of the relationship. In most cases, it is paid for 1/3 of the duration of the marriage. As I am interested in quantifying the risk of economic vulnerability in case of a potential divorce, the basic calculation method is sufficient to categorize married households into different risk bins.[12]

Then, I divided the sample into four groups based on the distribution of estimated expected loss, including high-risk, medium-risk, low-risk, and no-risk groups. The married households in the top 25 percentile ("High-Risk Group") are considered the most vulnerable group at the time of change in reform. The married households in the bottom 25 percentile ("No Risk Group") are unaffected because their expected alimony loss almost equals zero. This might be because these households are egalitarian, where both partners have nearly similar labour income and are not eligible to apply for spousal maintenance in case of divorce. In case of a potential divorce, there is no probability of any claim for spousal maintenance alimony from these households. This characteristic makes these households the perfect control group. Based on legal grounds, they are not eligible for any alimony payment. The married households in 25th-50th percentile and 50th-75th percentile are the "Medium Risk Group" and "Low-Risk Group". Therefore, I run the difference-in-difference regressions for each risk group - low to high risk, as the treated individuals and the first quartile as the control group. This proxy for spousal maintenance payment is very simple because, in reality, spousal maintenance payments depend on several other factors. Also, how long the maintenance is paid depends on the duration of the relationship. A simple rule is that it is paid for one-third of the duration of marriage. In that case, individuals with a long marriage duration and who stay away from the labour market are the most vulnerable. However, as one of the main criteria is the difference between the labour income of husband and wife, this basic calculation is sufficient to define the heterogeneous treatment groups. I further define a potential beneficiary of the alimony in the year 2007. If the labour income of the husband is higher than the wife's in 2007, then in case of divorce, the wife is the potential beneficiary and vice versa.

Table 4.2 shows the treatment effects on savings and labour market outcomes of the households by the defined risk groups and potential beneficiaries. For the sample distribution for all the regressions, please refer to Table B5. Results show that the saving rate of married households across all risk groups is not affected. However, there is a significant increase in the saving rate of married households where the potential beneficiary is a male. The male beneficiary in the high-risk group increases their saving rate by 4.1 percentage. This suggests that these households are responding to reforms by saving a higher proportion of their income. The increasing saving rate may signal adjustments in households' financial strategies, and these households reassess and rebalance their financial strategies.

There is a significant positive impact on the labour participation of women across the most vulnerable high and medium-risk groups. The labour market participation of women increases by 6.6 per cent in high-risk and 5.3 per cent in medium-risk groups. Women who are potential beneficiaries of spousal maintenance payment and belong to the top two vulnerable risk groups increase their labour market participation by 5.5 per cent and 4.3 per cent, respectively. It is interesting to find that men's labour market participation is not significantly affected by reform, even if the beneficiary is the husband. This shows that women are more responsive to reform to maintain their economic stability compared to men. This also shows the differential behaviour of men and women to the anticipated risks. This gender-specific behaviour appears as the average woman's standard of living declines compared to the standard that she enjoyed during the marriage, whereas men often face an increase in material well-being (Becker et al., 1977).

[12] However, I will perform sensitivity analysis to ensure how robust my risk group definitions are to the changes in the calculation of alimony.

Results show a significant increase in the annual hours worked by previously employed women in the highest-risk group. These women increased their annual hours worked by 11.94 percent. Looking at the impact across potential beneficiary, I observe that in high risk groups when potential beneficiary is a wife, there is 9.86 percent increase in annual hours worked. Women in medium and low risk groups increase their annual hours worked but they are not statistically significant. This behaviour implies that women may feel a stronger need to secure their financial position and increase their working hours, which results in the rebalancing of household roles. An increase in household overall income after the participation of women in the labour market also incentivises men to reduce their working hours. The average decline in annual hours worked by men in high-risk is 5.6 percent, and in medium-group 14.6 percent. Married men who are potentially beneficiary of spousal maintenance and belong to high risk group have also decreased their annual hours worked by 23.3 percent.

I further conduct two robustness checks, first, I analyse that my findings are not specifically driven by the control group. Therefore, I rerun the analysis using cohabiting couples as a control group and estimated the impact across all other risk groups. Table B7 shows that the results are consistent with the previous results and female participation increases by 6 percent and annual hours worked of previously employed women increase by 11.6 percent. However, I also observe 3.7 percent decrease in male participation and male hours worked decreases when the potential beneficiary is a women. For robustness check, I redefine the risk groups based on expected alimony loss from year 2006 and the results are consistent with the findings above (see Table B8).[13]

[13]This robustness check eliminates doubts if an individual takes short term break from employment

Table (4.2) Difference-in-Difference Estimates by Risk Group and Potential Beneficiary of Spousal Maintenance

	High Risk Group			Medium Risk Group			Low Risk Group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent Variables	All	Female Beneficiary	Male Beneficiary	All	Female Beneficiary	Male Beneficiary	All	Female Beneficiary	Male Beneficiary
Savings Level	48.412**	26.724	184.818*	-7.420	-30.737	73.934	-0.421	-18.618	7.417
	(23.601)	(25.592)	(95.793)	(16.227)	(19.097)	(50.657)	(14.737)	(17.747)	(34.235)
Saving Rate	0.008	-0.000	0.041***	0.000	-0.009	0.025	0.001	-0.006	0.000
	(0.005)	(0.006)	(0.013)	(0.005)	(0.006)	(0.015)	(0.005)	(0.005)	(0.010)
Female Participation	0.066***	0.055**	-0.003	0.053***	0.043*	0.006	0.031	0.017	0.029
	(0.020)	(0.022)	(0.011)	(0.019)	(0.022)	(0.012)	(0.016)	(0.020)	(0.020)
Male Participation	-0.011	-0.013	-0.004	-0.015	-0.018	0.004	-0.011	-0.015	-0.023
	(0.009)	(0.009)	(0.017)	(0.010)	(0.010)	(0.041)	(0.012)	(0.011)	(0.051)
Female Hours Worked	0.100**	0.090**	0.102	0.056*	0.042	0.080	0.007	-0.007	0.012
	(0.039)	(0.043)	(0.066)	(0.031)	(0.038)	(0.049)	(0.026)	(0.032)	(0.048)
Male Hours Worked	-0.049***	-0.027	-0.233***	-0.031*	-0.008	-0.188	-0.018	0.008	-0.161**
	(0.017)	(0.018)	(0.086)	(0.017)	(0.018)	(0.125)	(0.018)	(0.019)	(0.075)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Household FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: Table 4.2 shows the average treatment effects on treated (married couples) according to their exposure to risk of financial troubles in case of potential divorce. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. For each risk group, I show how the impact varies depending upon the potential beneficiary (Female or Male) of the maintenance payment. Column 1,4,7 ("All") shows the treatment effect without considering the potential beneficiary of the maintenance payment. Each row represents a separate regression model and shows the average treatment effect on the respective dependent variable including saving rate, female labor market participation, male labor market participation, female annual hours worked(log), male annual hours worked(log). The estimates are based on difference in difference framework and controls for husbands demographics, wife demographics, household characteristics, time and households level fixed effects.

4.4.1 Considering the role of Child-maintenance payments

The findings in previous section shows that changes in spousal maintenance conditions may incentivise women to increase their labor market participation within marriage. However, there is a possibility that those women who are eligible for child maintenance payments may feel less pressure to increase their market participation. Therefore, to evaluate if the eligibility of child maintenance payments play a role, I rerun the analysis and redefine the risk groups considering both expected spousal maintenance and children maintenance payments. The children maintenance payments (Kindesunterhalt) are usually based on "Düsseldorfer Tabelle" B2. I estimate the children's maintenance payments for the kids below the age of 18 and who are possibly living in the same household. Using information on paying parent net income I, age A_i be of child i. I estimate the maintenance amount for each minor child C_i, using the piecewise function Amount_k where, $\mathbb{1}_{\text{condition}}$ be the indicator function, which is 1 if the condition is true and 0 otherwise. For the higher income brackets (above 5,100 Euro), the amount is not mentioned and I set the maximum child maintenance for this group.

$$C_i = \begin{cases} \text{Amount} \cdot \mathbb{1}_{(0 \leq A_i \leq 5 \text{ and } I \leq 1500)} & \text{if } 0 \leq A_i \leq 5 \text{ and } I \leq 1500 \\ \text{Amount} \cdot \mathbb{1}_{(6 \leq A_i \leq 11 \text{ and } I \leq 1500)} & \text{if } 6 \leq A_i \leq 11 \text{ and } I \leq 1500 \\ \text{Amount} \cdot \mathbb{1}_{(12 \leq A_i \leq 17 \text{ and } I \leq 1500)} & \text{if } 12 \leq A_i \leq 17 \text{ and } I \leq 1500 \\ \text{Amount} \cdot \mathbb{1}_{(A_i \geq 18 \text{ and } I \leq 1500)} & \text{if } A_i \geq 18 \text{ and } I \leq 1500 \\ \text{Amount} \cdot \mathbb{1}_{(0 \leq A_i \leq 5 \text{ and } 1500 < I \leq 1900)} & \text{if } 0 \leq A_i \leq 5 \text{ and } 1500 < I \leq 1900 \\ \text{Amount} \cdot \mathbb{1}_{(6 \leq A_i \leq 11 \text{ and } 1500 < I \leq 1900)} & \text{if } 6 \leq A_i \leq 11 \text{ and } 1500 < I \leq 1900 \\ \text{Amount} \cdot \mathbb{1}_{(12 \leq A_i \leq 17 \text{ and } 1500 < I \leq 1900)} & \text{if } 12 \leq A_i \leq 17 \text{ and } 1500 < I \leq 1900 \\ \text{Amount} \cdot \mathbb{1}_{(A_i \geq 18 \text{ and } 1500 < I \leq 1900)} & \text{if } A_i \geq 18 \text{ and } 1500 < I \leq 1900 \\ \vdots & \vdots \\ \text{Amount} \cdot \mathbb{1}_{\text{Conditions for higher income brackets}} & \text{if Conditions for higher income brackets} \end{cases} \tag{7}$$

I estimate the total alimony claim in case of a potential divorce using expected spousal maintenance (Ehegattenunterhalt) (equation 6) and children maintenance payment (equation 7), I estimate the total alimony claim in case of a potential divorce. Based on the quartiles of the distribution of total alimony payment, I redefine the risk groups as before and rerun the analysis. I first see the behaviour of all married couples in each risk group compared to the no-risk group. Later I analyse the response considering the legal potential beneficiary of alimony. In most of the cases women are the custodians of children you are taking care of minors, you may also contact the local youth agency (Jugendamt), which will help you to enforce the child support claim against the other parent.

Table B9 shows that results are not consistent with the previous findings. Like previous findings, women significantly increase their participation in labor market by 7 percent and 6.9 percent from high and medium-risk groups. The impact is primarily coming from the households where the potential beneficiary of the payment is the women. Results also show a significant increase in the annual hours worked by previously employed women in the highest-risk group. These women increased their annual hours worked by 12.4 percent. Looking at the impact across potential beneficiaries, I observe that in high-risk groups, when potential beneficiary is a wife, there is 11.1 percent increase in annual hours worked. The impact is also significant for the women from medium risk groups where women increase their annual hours worked by 11.1 percent. Women in low risk groups increase their annual hours worked but they are not statistically significant. This behaviour implies that women may feel a stronger need to secure their

financial position even if they are eligible to child maintenance payments and increase their working hours. An increase in household overall income after the participation of women in the labour market also incentivises men to reduce their working hours. The average decline in annual hours worked by men in high-risk is 3.4 percent.

4.5 Subgroup Analysis with Heterogeneous Treatment Effects

After analyzing the varied economic responses of married households, it appears that the impact may differ across various subgroups due to systematic differences in their socioeconomic status and family composition, among other factors. Therefore, to empirically examine the differential responses of married households categorized into various subgroups, I have conducted the following analysis.

4.5.1 Traditional versus Egalitarian Households

The male breadwinner system (traditional), female breadwinner and egalitarian systems are different models of gender roles within households based on work contexts. The male breadwinner system is characterized by a household where the man is the primary earner, and the woman is responsible for child-rearing and households. Under this system, women may face career breaks or reduced working hours, leading to lower lifetime earnings and pensions. However, the tax benefits "Ehegattensplitting" and guaranteed post-marital alimony can incentivize married couples to opt for this system. In an egalitarian system, men and women share responsibility towards domestic tasks and work. The changing societal attitudes and younger cohorts tend to favour equal sharing of tasks as it can increase household resources and reduce gender inequality and risk of pension poverty, especially for women. The male breadwinner system was predominant in Germany, especially after the Second World War economic boom, and married households adopted a single-income model. It is often believed that women's bargaining power in the male breadwinner system is typically less as they earn less. However, individual and household characteristics also play a significant role in the intrahousehold bargaining process (Van Klaveren et al., 2011). Therefore, to explore if the responses of the married couples post-reform under different models vary, I divide the sample based on single-income earners (men/women) and double-income earners.

Table 4.3 shows the treatment effects on the saving rate of married households by the defined risk groups. The first row captures the impact based on gender roles within households, including egalitarian (both working), male breadwinner (only husband working) and female breadwinner (only wife working). I am not considering the employment level (part or full-time) in this regression because it is implicitly covered under each risk group. For example, egalitarian households under the high-risk group are those where both husband and wife work, but the income difference is significantly higher.[14] Results show that egalitarian and female breadwinner households in the high-risk groups significantly increase their saving rate by 1 per cent and 2.6 per cent, respectively. However, there is no significant impact on the saving rate in any other risk group. Since the women in the high-risk group are increasing their labour supply, this may also increase the proportion of their monthly savings. In egalitarian and female breadwinner households, where gender roles are more equally distributed, and females take the primary roles, but there are still significant income discrepancies, there might be a greater sense of family responsibility.

[14]There can be various reasons for the income differences between spouses including the level of employment, gender wage gap, type of occupation, education, etc. I am capturing most of these differences in my regression model; however, the basic calculation of expected alimony in law does not consider these differences.

Therefore, these households increase their savings to ensure the weak partner does not suffer after the reform. Moreover, the increasing saving rate may also signal adjustments in households' financial strategy, which will help these households reassess and rebalance their assets.

4.5.2 Low versus High-Income Households

Next, I explore the impact of reform across low-income, medium and high-income households. I divide the sample into four quartiles based on monthly household income. Low-income households belong to the first quartile of distribution, and high-income households belong to the fourth quartile of the distribution. Medium-income households belong to the second and third quartiles of the income distribution. Subgroup 2 in Table 4.3 shows how the saving rate of married households changes along income distribution by risk groups. Middle-income households from the high-risk group increased their saving rate after the reform, but the impact is insignificant for any other risk group or income subgroup. This may be because low-income groups do not have enough resources to readjust their savings, and highly vulnerable rich households are not affected by the reform because they are not completely relying on alimony in case of divorce.

Subgroup 1 in Table 4.4 shows the impact on female participation from different income groups under each risk group. Married women from high and medium risk groups and belong to 25th to 75th percentile of income distribution, increase their labor participation by 11.9 percent and 9.5 percent respectively. Both low and high income groups from all risk groups do not show any significant change in rebalancing the roles in work context. Since the participation decision also depends on the earnings from work versus expenses on child care, therefore, for low income earners the childcare is more expensive and women choose not to work. Table 4.5 shows that there is not any significant impact on married men labor market participation. This is because married men usually have more stable unemployment and less likely to completely leave the labor market. However, there can be a possibility that rebalancing of gender roles within household after the reform may affect the hours worked of husbands. On the other hand, there is a 5.7 percent decrease in male labor participation in the low income medium risk group. This may show the reallocation of time to other responsibilities in this group.

Table 4.6 shows that women annual number of hours worked have significantly increased among high risk groups specifically for middle and high income groups.

4.5.3 Household Composition

Marriage increases the specialization of women in domestic unpaid work, especially for couples with preschool children (Moreau & Lahga, 2011). Therefore, married couples with children are more likely to specialize in their roles and, thereby, more likely to be affected by maintenance reforms. Subgroup 3 in Table 4.3 shows if the savings behaviour of households differ across different types of households with no child, one child or more than one child. I do not find any significant impact across different types of households based on presence of children.

Next I am looking at the impact on women labor participation in the presence or absence of children. Table 4.4 (subgroup 2) shows that how the presence of kids (no kids, one kids, more than one kid) affects the labor supply of women. There is a significant increase in labor market participation of women with more than one child across all risk groups. The impact varies between 11.1-14.1 percent depending upon

the risk group. This may suggest that women with more children who were previously away from the job market because they were more involved in looking after the children face greater pressure post-reform and increase their labor market participation. There is a 9.7 percent decline in labor market participation of women with no kids and from high risk group. It might be because these women with no kids from high risk group feels lack of commitment in marriage and prefers more leisure time. I do not observe any significant impact on male labor market participation across distribution of children (Table 4.5).

Table 4.6 shows that married women from high risk group and with more children have significantly increased their annual hours worked after the reform. The increase in hours worked is 27 percent and 13.5 percent from high and medium risk groups. This shows that women who were mainly involved in raising the children and were not actively participating in the labor market, are mostly affected by the reform. There is no significant impact on hours worked of men 4.7.

4.5.4 Age Cohorts

In most cases, the ex-husband is the payor, and the ex-wife is the payee, as the partner with more income is the payor. These differences are higher among older cohorts as the increasing participation of women in the labour market and changing social norms lower these differences. However, older cohorts have significant differences in terms of hours worked and the gender pay gap. To analyse the impact across age distribution, I categorise the sample based on head of the households who is usually husband. The three categories include young cohort (head's age ¡= 35), middle cohort (35 ¡ head's age ¡= 45) and old cohort (head's age ¿ 45). I do not observe any significant effect on saving rate, female or male labour market participation (Table 4.3 Table 4.4 Table 4.5 Table 4.7). However, middle aged women from high risk group and old aged women from medium risk group significantly increased their annual hours worked by 18.8 percent and 8.2 percent respectively. Young women from any risk group do not show any significant change.

4.5.5 Wealth Level

Wealth level of couples can play a significant role in reducing the vulnerability of individuals to future income shock in the form of spousal maintenance payments. Literature shows that married women in equitable matrimonial property regime reduces their hours worked after the divorce reforms. To revisit if women behave the same to changes in maintenance payments, I distribute the married sample from each risk group into three quantiles based on their level of wealth in year 2007. The estimates in Table 4.4 show that women in high risk group signficantly increase their labor market participation across all quantiles of wealth distribution. The participation of these women increase by 11.9 percent, 8.4 percent and 7.1 percent across low, medium and high wealth distributions respectively. Married women from medium risk group who belong to the top two quantiles of distibution increase their participation, while from low risk group only women having lower wealth levels increase their participation. The women who are already working and belong to middle and highest quartile of income distribution increase their hours worked from both high and medium risk groups (Table 4.6). There is no significant impact on saving rate and male labor participation (Table 4.3 and Table 4.5). Interestingly, married men from highest wealth distributions across all risk groups reduce their annual hours worked, on average, by 7 percent (4.7). This shows that the responses of households vary across their wealth distribution.

Table (4.3) Subgroup Analysis of Savings Behaviour of Married Households across Defined Risk Groups

	High Risk Group			Medium Risk Group			Low Risk Group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Subgroup 1:	Egalitarian	Male Breadwinner	Female Breadwinner	Egalitarian	Male Breadwinner	Female Breadwinner	Egalitarian	Male Breadwinner	Female Breadwinner
Saving Rate	0.010	0.02	0.026**	0.003	0.010	-0.004	0.003	0.003	-0.002
	(0.060)	(0.031)	(0.013)	(0.006)	(0.033)	(0.017)	(0.005)	(0.030)	(0.010)
Subgroup 2:	Low Income	Middle Income	High Income	Low Income	Middle Income	High Income	Low Income	Middle Income	High Income
Saving Rate	0.032	0.0115	-0.009	0.004	0.005	-0.020	0.011	0.001	-0.007
	(0.049)	(0.006)	(0.012)	(0.012)	(0.005)	(0.013)	(0.010)	(0.005)	(0.013)
Subgroup 3:	No Kid	One Kid	More than one kid	No Kid	One Kid	More than one kid	No Kid	One Kid	More than one kid
Saving Rate	-0.004	0.018	0.003	-0.001	0.015	-0.003	-0.011	-0.003	-0.000
	(0.011)	(0.011)	(0.011)	(0.009)	(0.010)	(0.010)	(0.008)	(0.010)	(0.010)
Subgroup 4:	Young	Midle Aged	Old	Young	Midle Aged	Old	Young	Midle Aged	Old
Saving Rate	-0.006	0.012	-0.003	-0.004	0.003	0.004	-0.003	0.002	0.006
	(0.018)	(0.008)	(0.009)	(0.015)	(0.007)	(0.007)	(0.015)	(0.008)	(0.008)
Subgroup 5:	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth
Saving Rate	-0.005	0.008	0.008	-0.002	0.010	-0.014	-0.003	0.006	-0.012
	(0.011)	(0.009)	(0.010)	(0.007)	(0.009)	(0.010)	(0.006)	(0.009)	(0.011)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Household FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: Table 4.3 shows the impact on savings rate of married couples across different types of households based on breadwinner type, income distribution, number of children, age cohorts and wealth level. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. All married couples in any of these three groups (high, medium, low) are the treated households whereas, households in the "no risk group" form the control group. For each risk group, I show how the savings behaviour of married households differ across breadwinner type (egalitarian, male breadwinner, female breadwinner), income distribution (low, middle, high), presence of children (0, 1 , more than one kid) and age cohort of head of household (young, middle, old). For example, the estimated coefficients for subgroup 1 shows the average treatment effects on treated (ATET) on saving rate of married couples across different types of households based on gender roles distributions within household (egalitarian, male breadwinner, female breadwinner). The estimates are based on difference in difference framework and controls for husbands demographics, wife demographics, household characteristics, time and households level fixed effects. To see the number of treated groups, control groups and total number of observations, check the Table B6

Table (4.4) Subgroup Analysis of Married Women Labor Market Participation across Defined Risk Groups

	High Risk Group			Medium Risk Group			Low Risk Group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Subgroup 1:	Low Income	Middle Income	High Income	Low Income	Middle Income	High Income	Low Income	Middle Income	High Income
Female Participation	0.045	0.119***	0.013	0.009	0.095***	0.037	0.029	0.026	0.025
	(0.070)	(0.032)	(0.025)	(0.047)	(0.023)	(0.025)	(0.041)	(0.016)	(0.020)
Subgroup 2:	No Children	One Kid	More than one kid	No Children	One Kid	More than one kid	No Children	One Kid	More than one kid
Female Participation	-0.097***	0.054	0.116***	-0.047	0.053	0.141***	-0.014	0.078*	0.111**
	(0.035)	(0.045)	(0.044)	(0.033)	(0.041)	(0.044)	(0.024)	(0.040)	(0.045)
Subgroup 3:	Young	Midle Aged	Old	Young	Midle Aged	Old	Young	Midle Aged	Old
Female Participation	0.043	0.073**	-0.010	0.142*	0.043	-0.020	0.162**	0.011	0.001
	(0.093)	(0.031)	(0.031)	(0.081)	(0.030)	(0.023)	(0.064)	(0.026)	(0.024)
Subgroup 4:	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth
Female Participation	0.119**	0.084**	0.071**	0.062	0.060**	0.058**	0.062**	0.022	0.025
	(0.052)	(0.038)	(0.029)	(0.049)	(0.030)	(0.029)	(0.027)	(0.023)	(0.040)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Household FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: Table 4.4 shows the impact on labor participation of married women across different types of households based on income distribution, number of children and age cohorts. Labor participation represents the employment status of the female spouse. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. All married couples in any of these three groups (high, medium, low) are the treated households whereas, households in the "no risk group" form the control group. For each risk group, I show how labor participation of married women differ across income distribution (low, middle, high), presence of children (0, 1 , more than one kid) and age cohort of head of household (young, middle, old). For example, the estimated coefficients for subgroup 1 shows the average treatment effects on treated (ATET) on women labor participation of married couples across income distribution in all three risk groups (low income, middle income and high income). The estimates are based on difference in difference framework and controls for husbands demographics, wife demographics, household characteristics. I control for the year and households level fixed effects. To see the number of treated groups, control groups and total number of observations, check the Table B6

Table (4.5) Subgroup Analysis of Married Men Labor Market Participation from Defined Risk Groups

	High Risk Group			Medium Risk Group			Low Risk Group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Subgroup 1:	Low Income	Middle Income	High Income	Low Income	Middle Income	High Income	Low Income	Middle Income	High Income
Male Participation	-0.034	-0.004	0.000	-0.057*	0.006	-0.007	-0.002	-0.012	0.000
	(0.028)	(0.008)	(0.002)	(0.032)	(0.008)	(0.012)	(0.033)	(0.011)	(.)
Subgroup 2:	No Children	One Kid	More than one kid	No Children	One Kid	More than one kid	No Children	One Kid	More than one kid
Male Participation	0.005	-0.015	-0.025	0.000	-0.012	-0.020	0.011	-0.014	-0.004
	(0.029)	(0.013)	(0.020)	(0.030)	(0.014)	(0.025)	(0.031)	(0.018)	(0.023)
Subgroup 3:	Young	Midle Aged	Old	Young	Midle Aged	Old	Young	Midle Aged	Old
Male Participation	-0.020	0.009	-0.030	-0.015	0.000	-0.030	-0.005	-0.021	-0.027
	(0.016)	(0.018)	(0.025)	(0.019)	(0.021)	(0.022)	(0.020)	(0.030)	(0.026)
Subgroup 4:	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth
Male Participation	-0.032	0.004	0.012	-0.026	-0.005	0.001	-0.027	0.005	-0.004
	(0.021)	(0.011)	(0.010)	(0.024)	(0.013)	(0.013)	(0.024)	(0.015)	(0.023)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Household FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: Table 4.5 shows the impact on labor participation of married men across different types of households based on income distribution, number of children and age cohorts. Labor participation represents the employment status of the male spouse. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. All married couples in any of these three groups (high, medium, low) are the treated households whereas, households in the "no risk group" form the control group. For each risk group, I show how labor participation of married men differ across income distribution (low, middle, high), presence of children (0, 1 , more than one kid) and age cohort of head of household (young, middle, old). For example, the estimated coefficients for subgroup 1 shows the average treatment effects on treated (ATET) on men labor participation of married couples across income distribution in all three risk groups (low income, middle income and high income). The estimates are based on difference in difference framework and controls for husbands demographics, wife demographics, household characteristics, time and households level fixed effects. To see the number of treated groups, control groups and total number of observations, check the Table B6

Table (4.6) Subgroup Analysis of Married Women Annual Hours Worked across Defined Risk Groups

	High Risk Group			Medium Risk Group			Low Risk Group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Subgroup 1:	Low Income	Middle Income	High Income	Low Income	Middle Income	High Income	Low Income	Middle Income	High Income
Female Hours Worked	0.102	0.144**	0.082*	-0.018	0.074*	0.080	0.001	0.022	-0.001
	(0.103)	(0.060)	(0.049)	(0.069)	(0.043)	(0.052)	(0.064)	(0.031)	(0.036)
Subgroup 2:	No Children	One Kid	More than one kid	No Children	One Kid	More than one kid	No Children	One Kid	More than one kid
Female Hours Worked	-0.027	0.096*	0.888***	0.044	0.030	0.703***	-0.028	0.043	0.677*
	(0.063)	(0.053)	(0.230)	(0.042)	(0.053)	(0.227)	(0.033)	(0.045)	(0.393)
Subgroup 3:	Young	Midle Aged	Old	Young	Midle Aged	Old	Young	Midle Aged	Old
Female Hours Worked	0.616**	0.168**	0.008	0.019	0.081	0.086*	0.347**	0.024	0.020
	(0.269)	(0.070)	(0.045)	(0.278)	(0.052)	(0.045)	(0.154)	(0.042)	(0.034)
Subgroup 4:	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth
Female Hours Worked	0.124	0.121**	0.055	-0.094	0.116**	0.098*	0.010	0.003	0.005
	(0.097)	(0.059)	(0.059)	(0.074)	(0.048)	(0.051)	(0.047)	(0.039)	(0.048)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Household FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: Table 4.6 shows the impact on log of annual annual hours worked of married women across different types of households based on income distribution, number of children and age cohorts. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. All married couples in any of these three groups (high, medium, low) are the treated households whereas, households in the "no risk group" form the control group. For each risk group, I show how labor hours worked of married women differ across income distribution (low, middle, high), presence of children (0, 1 , more than one kid) and age cohort of head of household (young, middle, old). For example, the estimated coefficients for subgroup 1 shows the average treatment effects on treated (ATET) on women annual hours worked across income distribution in all three risk groups (low income, middle income and high income). The estimates are based on difference in difference framework and controls for husbands demographics, wife demographics, household characteristics, year and households level fixed effects. To see the number of treated groups, control groups and total number of observations, check the Table B6

Table (4.7) Subgroup Analysis of Married Men Annual Hours Worked across Defined Risk Groups

	High Risk Group			Medium Risk Group			Low Risk Group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Subgroup 1:	Low Income	Middle Income	High Income	Low Income	Middle Income	High Income	Low Income	Middle Income	High Income
Male Hours Worked	-0.046	-0.031	-0.014	-0.017	-0.001	-0.034	0.024	0.001	0.018
	(0.048)	(0.019)	(0.023)	(0.042)	(0.021)	(0.029)	(0.050)	(0.020)	(0.026)
Subgroup 2:	No Children	One Kid	More than one kid	No Children	One Kid	More than one kid	No Children	One Kid	More than one kid
Male Hours Worked	-0.045	-0.021	0.030	-0.034	-0.014	0.075	-0.072***	0.034	-0.092
	(0.035)	(0.026)	(0.074)	(0.030)	(0.026)	(0.079)	(0.027)	(0.028)	(0.173)
Subgroup 3:	Young	Midle Aged	Old	Young	Midle Aged	Old	Young	Midle Aged	Old
Male Hours Worked	0.104	-0.007	-0.078**	0.118	-0.015	-0.073*	0.139	-0.003	-0.045
	(0.090)	(0.023)	(0.037)	(0.087)	(0.023)	(0.041)	(0.104)	(0.028)	(0.031)
Subgroup 4:	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth
Male Hours Worked	-0.023	-0.061**	-0.077***	-0.045	-0.017	-0.079**	-0.028	-0.006	-0.080**
	(0.029)	(0.028)	(0.029)	(0.033)	(0.026)	(0.032)	(0.032)	(0.026)	(0.034)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Household FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: Table 4.7 shows the impact on log of annual annual hours worked of married men across different types of households based on income distribution, number of children and age cohorts. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. All married couples in any of these three groups (high, medium, low) are the treated households whereas, households in the "no risk group" form the control group. For each risk group, I show how labor hours worked of married men differ across income distribution (low, middle, high), presence of children (0, 1 , more than one kid) and age cohort of head of household (young, middle, old). For example, the estimated coefficients for subgroup 1 shows the average treatment effects on treated (ATET) on men annual hours worked across income distribution in all three risk groups (low income, middle income and high income). The estimates are based on difference in difference framework and controls for husbands demographics, wife demographics, household characteristics, year and households level fixed effects. To see the number of treated groups, control groups and total number of observations, check the Table B6

5 Is the Change in Economic Behaviour Persistent?

5.1 Dynamics of Savings and Labor Market Outcomes

The first economic variable is the savings rate defined as the ratio of monthly savings of households to the total monthly net income of households. Figure 4 shows the savings behaviour of the married households after the reform. Figure shows that there is no persistent impact on the saving rate of households after the reform. Although there is a temporarily increase in the saving rate of married couples where the potential beneficiary is husband in case of divorce however, the impact is not long term. Although the dynamic impact is statistically insignificant but it still retains its economic significance and shows how households behave. A decline in savings rate dynamics post reform, when wife is a potential beneficiary, shows that married couples are saving less proportion of their income. This can be because of changes in income composition as the women has increased their labor force participation but the monthly savings level is stable. The unchanged savings level may suggest that households are experiencing an increase in income however, their savings threshold is fixed. This naturally declines the saving rate and also shows a low marginal propensity to save out of additional income. On the other hand, married households where in case of divorce, husband is potential beneficiary are increasing their saving rate. There are the households where women are the primary earners of the family while men might be the secondary earner.

Alimony payments act as marital insurance, fostering trust and allowing for role distribution, such as women managing the household and men earning the income in a traditional society. In case of divorce, women can claim alimony, ensuring financial support. However, reductions or stricter conditions for alimony can affect bargaining power and role distribution, potentially altering the traditional male breadwinner system. Increase in self-sufficiency after divorce was one of the main objectives of reform, therefore, in this section, I explore the impact on both extensive and intensive margins of married men and women labor supply therefore, looking into the impact on individuals' participation in the labor market and changes in average annual hours worked separately for both husbands and wives. Figure 5 shows that women labor has significantly increased in the year of reform and there is a persistent increase in post-reform period however, it is insignificant for married men. The increased labor market participation of women reflects their response to perceived risks to future financial security. This led to an increase in total household income; however, the insignificant impact on savings suggests that, despite the income increase, married households maintain a fixed and stabilized savings level to uphold their financial goals. Therefore, it implies that increased labor market participation boosts the financial confidence of individuals. In intact marriages, these households do not alter their savings level. This may suggest that, in response to anticipated financial troubles, married households prioritize maintaining future financial security and do not make significant adjustments in short-term targets such as monthly savings.

Next, I explore if the annual hours of married men and women and Figure 6 shows the dynamics of hours worked post reform and the methodology DiD allows to control for the pre-trends. There is no immediate significant effect in hours worked for men as found previously by (Bredtmann & Vonnahme, 2019). This finding further supports and clarifies previous results regarding savings behavior and labor market participation. The significant changes in women shows that previously unemployed women are entering the labor market and those already in the labor marker are increasing their working hours thereby, contributing to higher total household income. Husbands, on the other hand, do not adjust their annual working hours but as their wives increase their labor supply, therefore, it is expected that there will be a significant change in the distribution of gender roles within households. This again explain

the no impact on savings rate as married households do not adjust their savings proportionally to increase with income.

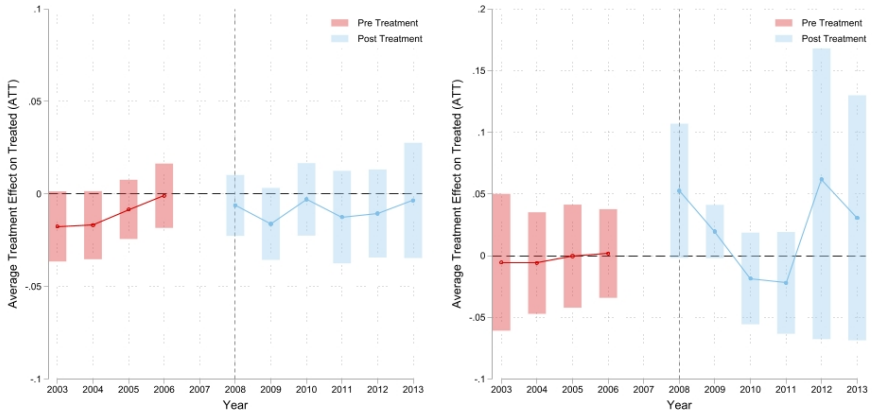
The lack of proportional change in savings to increase in income shows that households are behaving inline with Permanent Income Hypothesis by adjusting their consumption upwards rather than saving more. In the light of Permanent Income Hypothesis, when previously individuals enter the market and lead to a boost in household income, married couples may adjust their consumption patterns given new level of permanent income.

5.2 Policy Implications

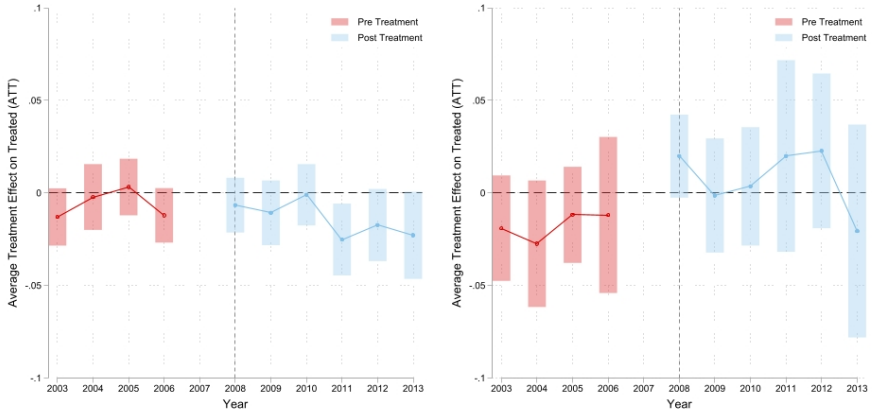
The intra-family decisions about the division of labour are the outcome of personal choices and trade-offs between the couples. The state cannot interfere with the personal sphere of family, for instance, if they choose an egalitarian model or shared model (male/female breadwinner). However, legal maintenance obligations during or after divorce can significantly affect their choices. For instance, a generous spousal alimony regime considers unpaid care work and paid work as an equal contribution towards the family. Under this regime, partners contribute to achieving shared goals and follow the principle of shared financial solidarity during and after marriage. Furthermore, in the context of Germany, a marital income-splitting tax regime under a progressive tax rate further impacts couples' work choices, especially after having children. Income splitting equalises the tax burden between the "egalitarian model," where both partners reduce working hours, and the "role specialisation model," where one partner works full-time and the other stays home. It may inadvertently encourage traditional gender roles and lead to the disparity between individual couples' income. It may also lead to long-term inequality between partners, as the partner who stays home, especially for a long duration, experiences reduced human capital (skills, experience, promotions etc). These policy dynamics suggest that while the system ensures short-term fairness, it may contribute to widening intra-household inequality over time, which may also shift the bargaining power to the financially stronger partner. The generous spousal maintenance payments provide a way to reduce the risk of falling back on the standard of living after a divorce but cannot guarantee that a married woman, having lived many years as a housewife or mother, simply enters the labour market without any challenges.

In a less generous spousal maintenance regime, the principle of self-sufficiency dominates as partners know that they may face challenges in accessing the alimony entitlements. This increases concerns regarding future instability risk and the shift in the bargaining power during the marriage, thereby significantly affecting the commitments of the partners towards unpaid care work. Since the marital-splitting tax does not discriminate between shared versus specialisation roles, the likelihood of couples moving from a specialisation model to a shared model. It also reduces the likelihood of leaving financially weak partners to suffer any disadvantage and may reduce couples' inequality. Therefore, alimony reform 2008 provides a great incentive to achieve the principle of self-sufficiency in the presence of a tax-splitting legal regime.

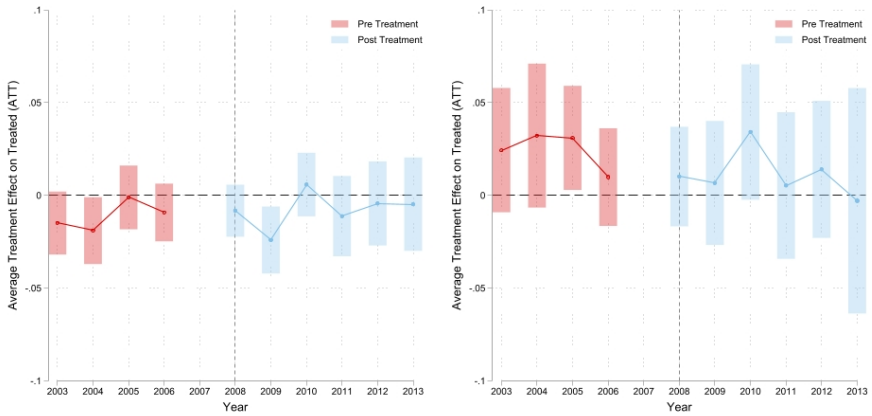
Figure (4) Saving Dynamics by Potential Beneficiary (Wife(L) Husband(R))



(a) High Risk Group



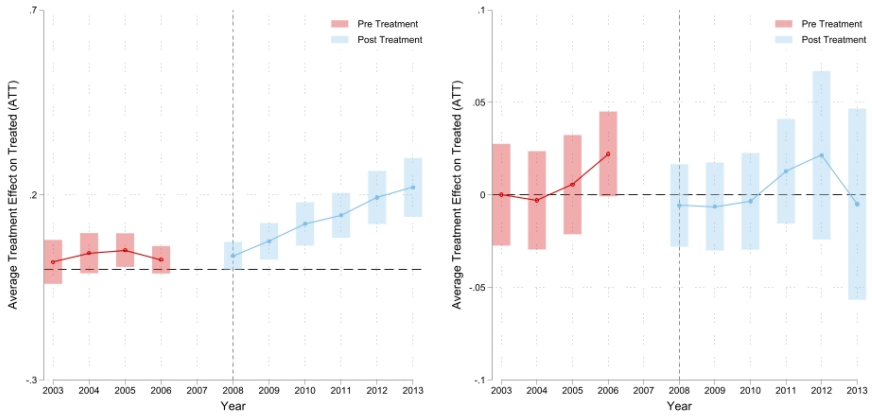
(b) Medium Risk Group



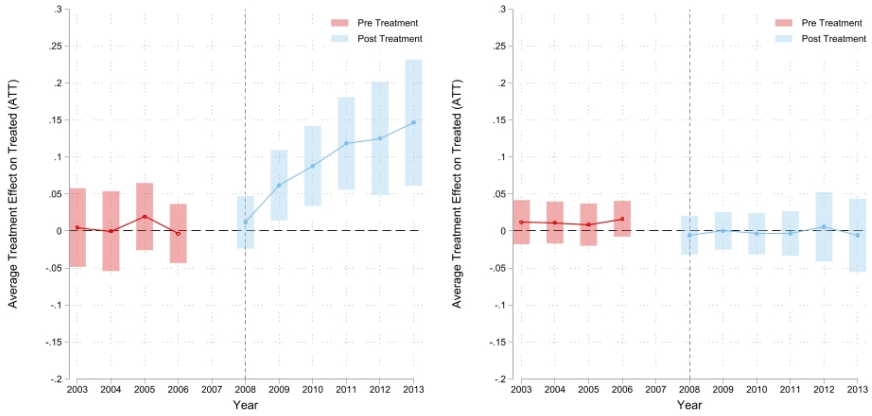
(c) Low Risk Group

Note: Figure 4 shows the average dynamic responses of savings rate of married households across three risk groups compared to married couples in no risk group before and after the reform. Left figure shows the saving rate dynamics in households where potential beneficiary of spousal maintenance is a wife and right figure shows the saving rate behaviour in households where men is the potential beneficiary of the maintenance payment, if the couple gets divorced. X-axis shows the periods to treatment where period 0 shows the year of reform (2008) with pre-window (5 years to the left) and post-window (5 years to the right). Y-axis shows the Average treatment Effect on Treated (ATT). Savings rate is defined as the ratio of total monthly savings of households to the total households net monthly income including labor and other income. Monthly savings amount are the average monthly savings reported by head of the households. Red color bars show the pre-treatment coefficients and blue bars show the post-treatment coefficients obtained using dynamic difference-in-difference framework. The estimated impact in the pre-treatment year 2007 is zero as we assume no-anticipation. Married sample includes all married households which got married before the reform and did not get divorced throughout observed period (2002-2013).

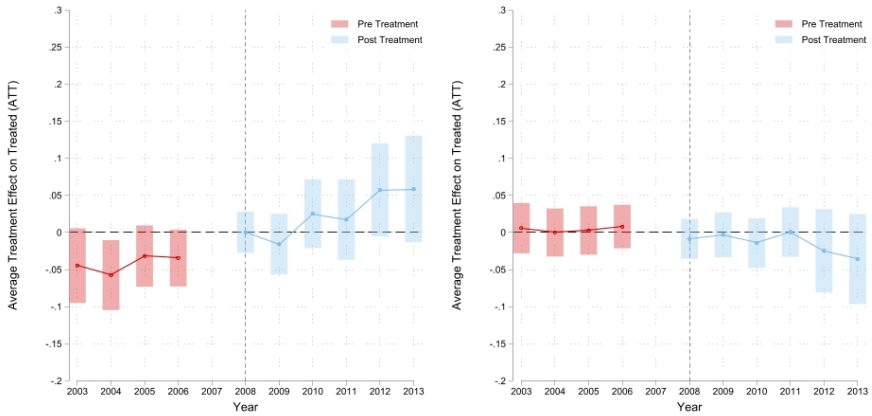
Figure (5) Labor Market Participation Dynamics by Wife(L) Husband(R)



(a) High Risk Group



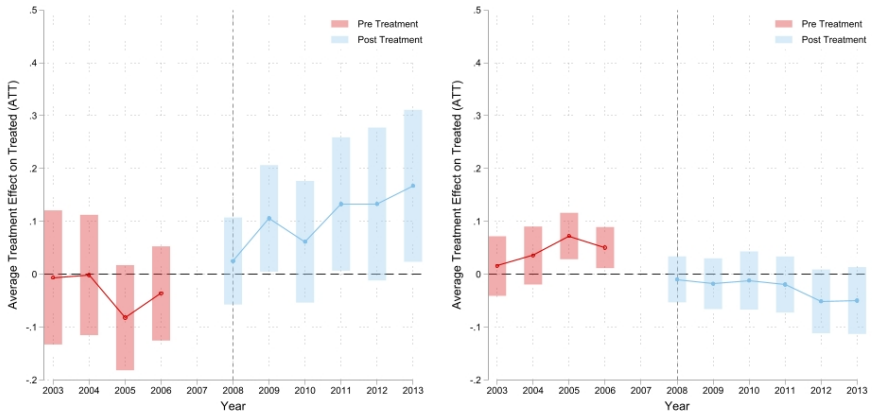
(b) Medium Risk Group



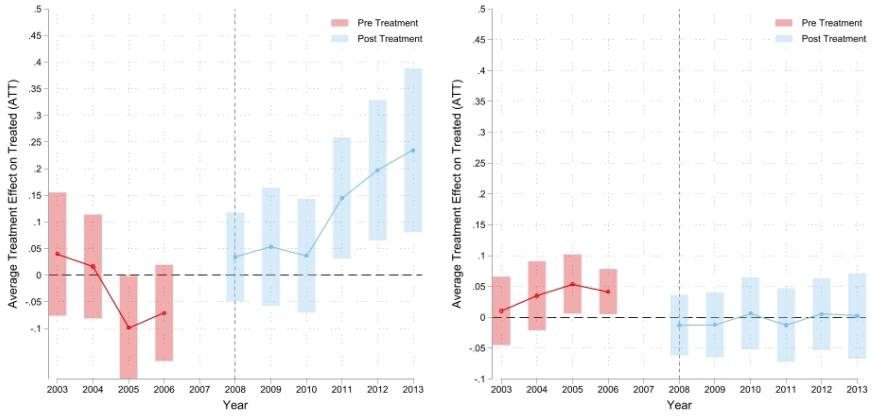
(c) Low Risk Group

Note: Figure 5 shows the dynamics of labor market participation of three risk groups by husbands (right) and wives (left) compared to no risk group before and after the reform. X-axis shows the periods to treatment where period 0 shows the year of reform (2008) with pre-window (5 years to the left) and post-window (5 years to the right). Y-axis shows the Average treatment Effect on Treated (ATT). The variable labor market participation is a dummy variable that takes the value 1 if an individual is employed and zero otherwise. Red color bars show the pre-treatment coefficients and blue bars show the post-treatment coefficients obtained using dynamic difference-in-difference framework. Sample includes all married households which got married before the reform and did not get divorced throughout observed period (2002-2013). Results show a significant increase in the labor participation of married women in the years following reform.

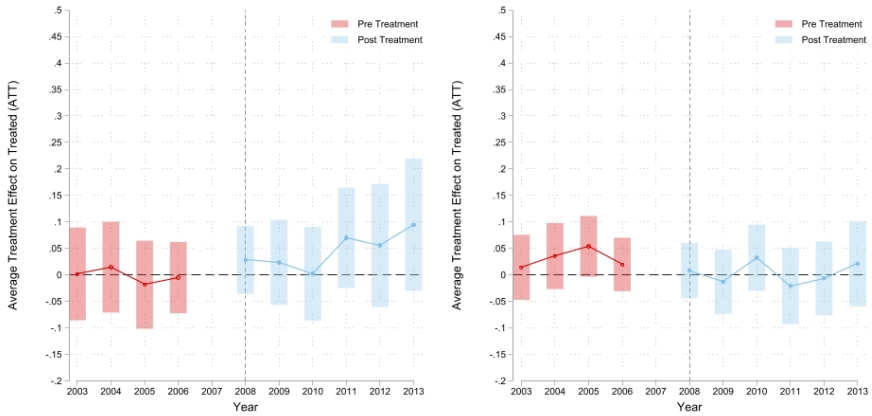
Figure (6) Labor Hours Worked Dynamics by Wife(L) Husband(R)



(a) High Risk Group



(b) Medium Risk Group



(c) Low Risk Group

Note: Figure **??** shows the dynamics of log of annual working hours of three groups by husband (right) and wife (left) compared to no risk group before and after the reform.X-axis shows the periods to treatment where period 0 shows the year of reform (2008) with pre-window (5 years to the left) and post-window (5 years to the right). Y-axis shows the Average treatment Effect on Treated (ATT). The variable annual labor hours worked are reported by married men and women in the household. Red color bars show the pre-treatment coefficients and blue bars show the post-treatment coefficients obtained using dynamic difference-in-difference framework. Treatment group includes all married households which got married before the reform and did not get divorced throughout observed period (2002-2013). Control group includes all the cohabiting couples, who are in living relationship during observed window and did not get married during this period.

6 Conclusion

In conclusion, this study delves into the economic decision-making behavior of households in response to changes in alimony law reform in Germany. By using this reform as a quasi-natural experiment, the research uncovers both immediate and long-term effects on the economic actions of individuals in intact marriages. The findings reveal significant behavioral adjustments of married couples after the reform.

The results are consistent with the hypothesis that divorce law reforms results in rebalancing of responsibilities and division of labor between partners. The increase in labor market participation of wives and a decrease for husbands support the hypothesis (Table 4.2). The mechanism is the following: changes in spouse maintenance alimony affect the expectations of couples and increase economic stability concerns. To ensure their future economic stability, couples rebalances their roles within the households. In the regime of unilateral divorce law, the partner who is more involved in the child-rearing and domestic responsibilities, may feel threatened of future financial consequences, in case of potential divorce. Therefore, these households are more likely to respond strongly to such reforms which means that how strongly the households respond depends on their intra-household bargaining position. Table (4.2) shows that the impact of responses across different risk groups and coefficients are stronger for the households which are most vulnerable. This channel does not work when the position of both partners is equally balanced like the households where both partners are equally distributing time between domestic tasks versus career and wage gap is close. The insignificant impact on savings behaviour of married households are consistent with findings from theoretical models (Voena, 2015). Under unilateral divorce law and with equitable distribution of property regime, married couples have less incentive to increase their individual savings. This is evident from the estimated impact on savings behaviour of the households after the reform. However, I cannot rule out the possibility of reallocation of financial assets after the reform, and it can be potential topic for future research.

These outcomes highlight that changes in expected financial solidarity due to changing conditions of spousal alimony can have profound and lasting effects on labor supply of economically weak partner. This research contributes to the existing empirical literature by offering novel insights into how legal reforms influence household saving and labor market behavior, particularly within the context of Germany's legal and social framework. The paper unique focus on the heterogeneous treatment effects across different household types adds depth to our understanding of economic behavior under uncertainty, providing a crucial perspective for policymakers, lawmakers and economists interested in the intersection of family law and economic decision-making.

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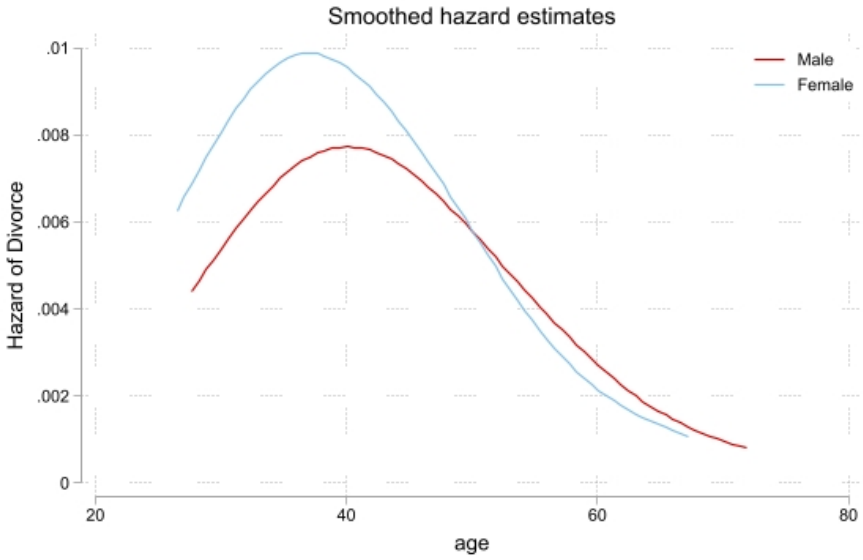
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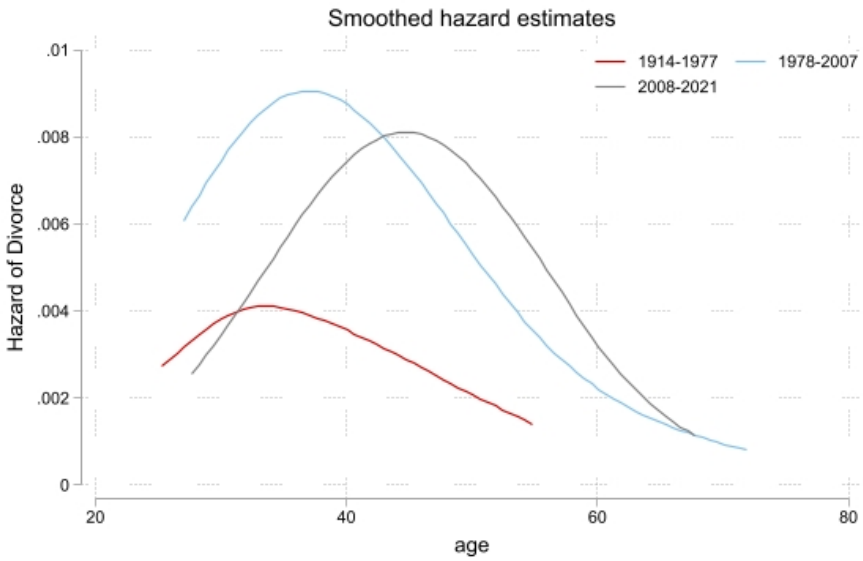
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A Appendix - Figures

Figure (A1) Hazard of Divorce across Age

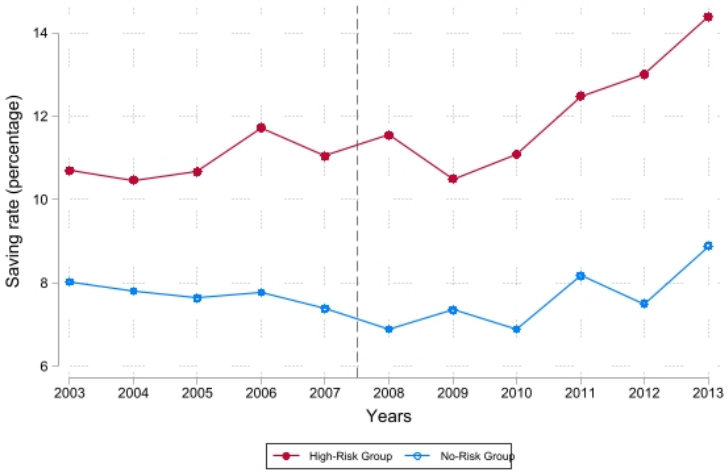


(a) Hazard by Gender

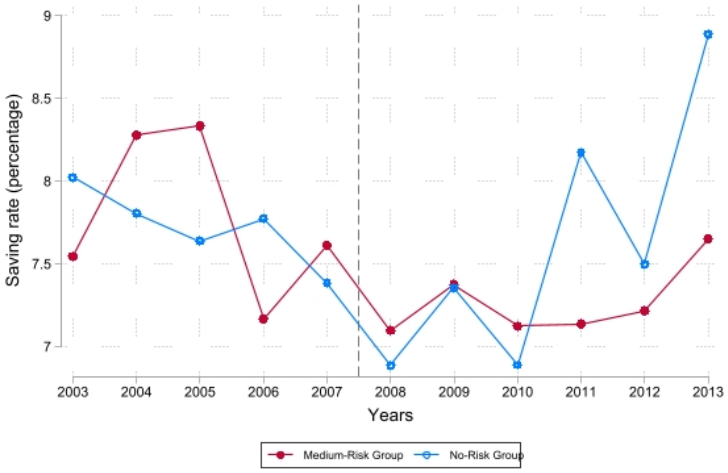


(b) Hazard Before and After Reform

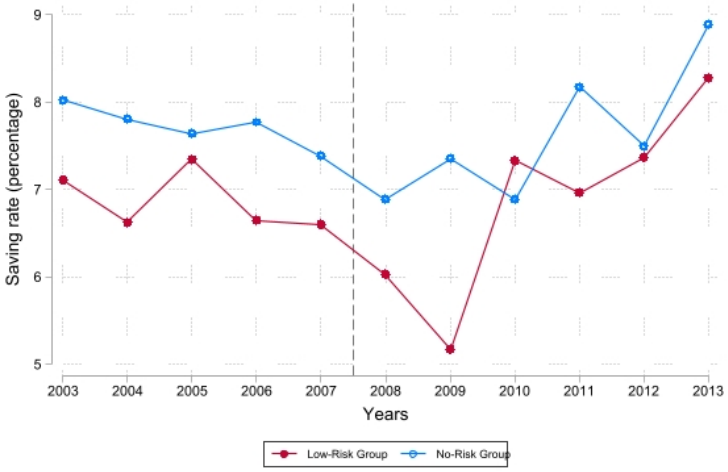
Figure (A2) Average Saving Rate Across Risk Groups



(a) High Risk Group

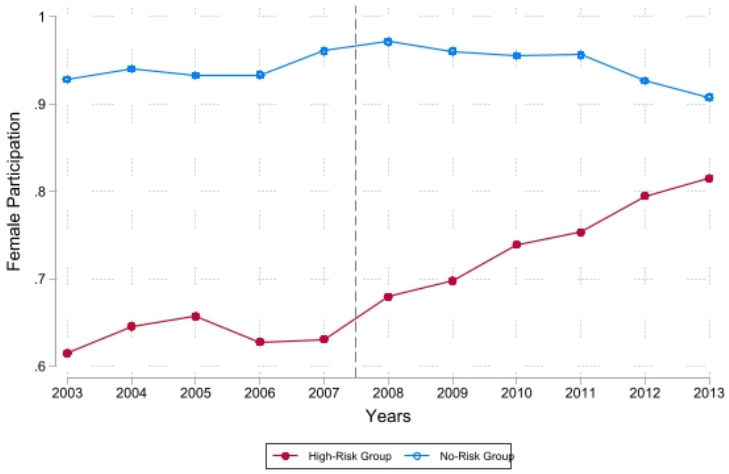


(b) Medium Risk Group

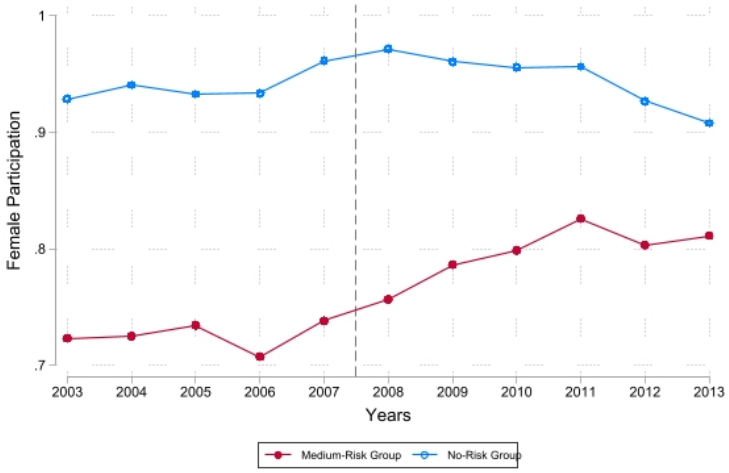


(c) Low Risk Group

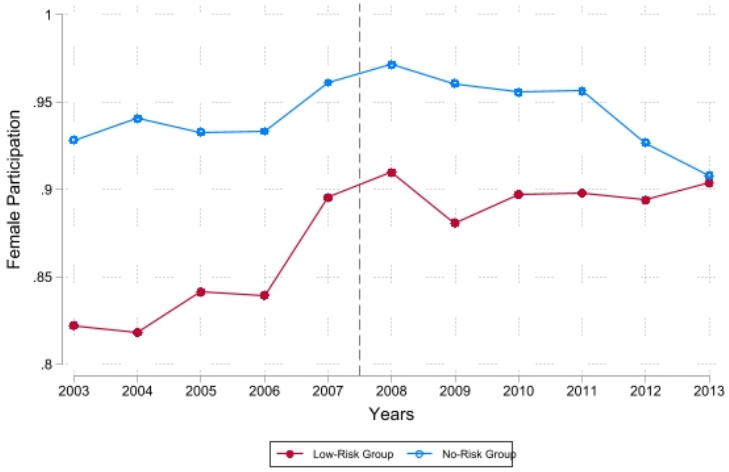
Figure (A3) Average Women Employment Across Risk Groups



(a) High Risk Group

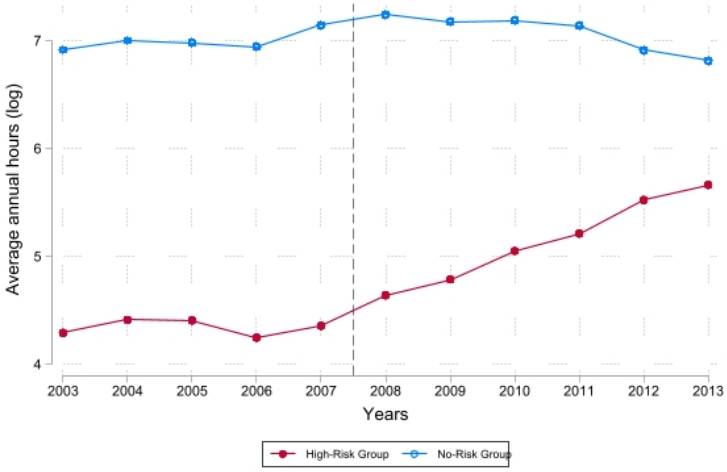


(b) Medium Risk Group

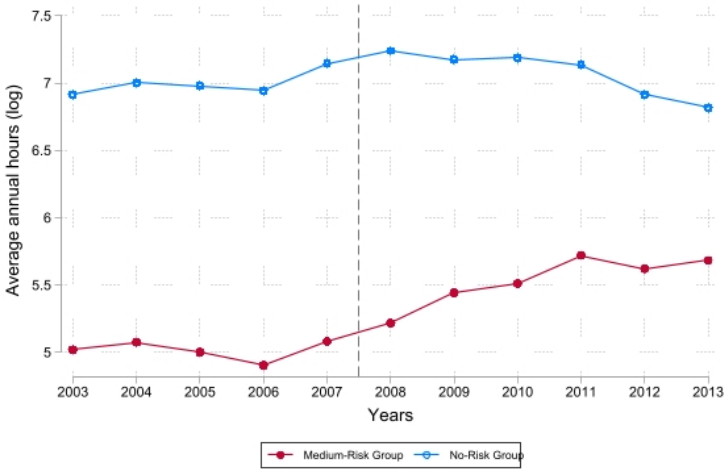


(c) Low Risk Group

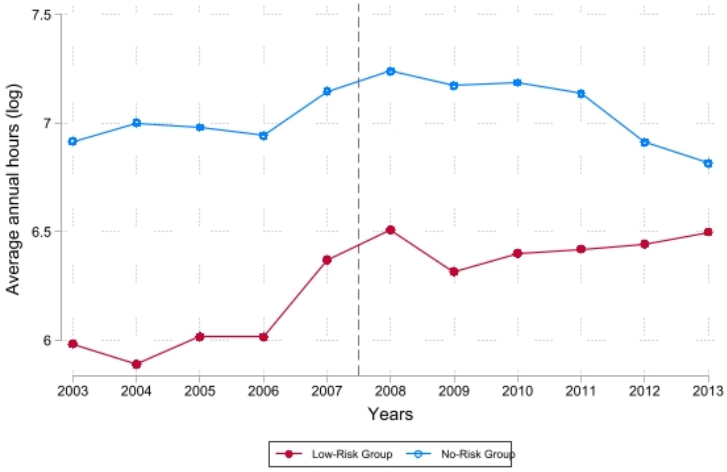
Figure (A4) Average Women Annual Hours Worked Across Risk Groups



(a) High Risk Group



(b) Medium Risk Group



(c) Low Risk Group

Table (B1) Descriptive Analysis: Descriptive Statistics by Instability Risk Group

Defined Risk Group	Mean	SD	Min	Max	N
No Risk Group "not eligible"					
Female Age	45.1956	6.2719	25	55	3303
Male Age	43.1714	6.4091	25	55	3303
Female Education	2.2183	0.5173	1	3	3303
Male Education	2.1355	0.4203	1	3	3298
Children (below 18)	1.1496	1.0534	0	5	3303
Region (West=1)	1.5553	0.4970	1	2	3303
Male Net Labor Income	1568.264	835.9528	0	9944.91	3303
Female Net Labor Income	1327.388	757.5446	0	8443.601	3303
Net Monthly Savings	276.3023	402.4178	0	5345.005	3187
Female Hours Worked	1744.300	723.2859	0	4988	3303
Male Hours Worked	2111.178	750.3923	0	5389	3303
Egalitarian Share	0.9004	0.2995	0	1	3303
Male Breadwinner	0.0478	0.2134	0	1	3303
Female Breadwinner	0.0448	0.2069	0	1	3303
Expected alimony(2007)	191.9857	115.6712	1.5	416	3,303
Low Risk Group					
Female Age	44.2353	6.4887	25	55	3319
Male Age	42.4655	6.5858	25	55	3319
Female Education	2.1612	0.5140	1	3	3319
Male Education	2.1262	0.4309	1	3	3319
Children (below 18)	1.3028	1.0515	0	5	3319
Region (West=1)	1.2998	0.4582	1	2	3319
Male Net Labor Income	1925.511	892.5214	0	7483.007	3319
Female Net Labor Income	864.7278	735.8293	0	5000.245	3319
Net Monthly Savings	223.3157	346.6864	0	4279.152	3158
Female Hours Worked	1267.272	814.0228	0	4676	3319
Male Hours Worked	2147.666	723.1745	0	5092	3319
Egalitarian Share	0.8265	0.3788	0	1	3319
Male Breadwinner	0.1253	0.3312	0	1	3319
Female Breadwinner	0.0422	0.2010	0	1	3319
Expected alimony(2007)	605.4883	100.8499	418.9579	766.3121	3,319
Medium Risk Group					
Female Age	44.1494	6.2767	25	55	3286
Male Age	41.8841	6.5487	25	55	3286
Female Education	2.1257	0.5138	1	3	3286
Male Education	2.1726	0.4807	1	3	3286
Children (below 18)	1.6442	1.2049	0	12	3286
Region (West=1)	1.1342	0.3409	1	2	3286
Male Net Labor Income	2515.624	915.5154	0	10754.99	3286
Female Net Labor Income	646.8928	777.8945	0	16887.2	3286
Net Monthly Savings	273.126	385.6203	0	3670.838	3139
Female Hours Worked	898.0320	799.5597	0	4994	3286
Male Hours Worked	2238.722	617.3378	0	5462	3286
Egalitarian Share	0.7343	0.4418	0	1	3286
Male Breadwinner	0.2416	0.4281	0	1	3286
Female Breadwinner	0.0228	0.1494	0	1	3286
Expected alimony(2007)	945.3579	106.2822	767.3278	1122.299	3,286
High Risk Group					
Female Age	45.0279	5.7315	25	55	3301
Male Age	42.9949	6.0210	25	55	3301
Female Education	2.2757	0.5056	1	3	3294
Male Education	2.5388	0.5423	1	3	3300
Children (below 18)	1.7546	1.0831	0	5	3301
Region (West=1)	1.0821	0.2746	1	2	3301
Male Net Labor Income	3925.913	1578.001	0	17773.97	3301
Female Net Labor Income	609.426	838.7707	0	8057.534	3301
Net Monthly Savings	561.5807	735.2178	0	11258.13	3202
Female Hours Worked	739.6131	728.2370	0	4363	3301
Male Hours Worked	2418.296	565.5642	0	7506	3301
Egalitarian Share	0.6725	0.4694	0	1	3301
Male Breadwinner	0.3169	0.4653	0	1	3301
Female Breadwinner	0.0103	0.1010	0	1	3301
Expected alimony(2007)	1639.583	637.4194	1122.807	7399.051	3,301

Note: Table 3.1 shows descriptive statistics of the married couples from no-risk, low-risk, medium-risk and high-risk groups. These statistics include mean, standard deviation, minimum, maximum and total number of observations. The key variable includes partners ages, education, number of children, monthly savings binary variable and amount, monthly household income, details about partners' employment status, annual hours worked, share of household model and region.

B Tables

Table (B2) Düsseldorfer Table for Estimating Child Care Payments

A. Kindesunterhalt

	Nettoeinkommen des Barunterhaltspflichtigen (Anm. 3, 4)	Altersstufen in Jahren (§ 1612 a Abs. 1 BGB)				Prozent-satz	Bedarfskontroll-betrag (Anm. 6)
		0 – 5	6 – 11	12 – 17	ab 18		
	Alle Beträge in Euro						
1.	bis 1.500	279	322	365	408	100	770/900
2.	1.501 - 1.900	293	339	384	429	105	1.000
3.	1.901 - 2.300	307	355	402	449	110	1.100
4.	2.301 - 2.700	321	371	420	470	115	1.200
5.	2.701 - 3.100	335	387	438	490	120	1.300
6.	3.101 - 3.500	358	413	468	523	128	1.400
7.	3.501 - 3.900	380	438	497	555	136	1.500
8.	3.901 - 4.300	402	464	526	588	144	1.600
9.	4.301 - 4.700	425	490	555	621	152	1.700
10.	4.701 - 5.100	447	516	584	653	160	1.800
	ab 5.101	nach den Umständen des Falles					

Note: This table shows the standard child maintenance payments that the ex-spouse is eligible for after the divorce. The parent who takes the responsibility of the children is eligible for this payment. The child care payments are for the year 2008. Source: (Higher Regional Court of Düsseldorf, 2008)

Table (B3) Discrete Time Event History Model for Hazard of Divorce

	(Odds Ratio) Sample 1978-2021	(Odds ratio) Sample 2004-2012
Post Reform	0.0857	0.105
	(1.56)	(1.07)
Female	0.134***	0.577***
	(4.66)	(6.21)
Post x Gender	0.105	−0.109
	(1.47)	(−0.89)
Age Spline 18-30	−0.00696	0.0599
	(−0.76)	(1.71)
Age Spline 30plus	−0.0369***	−0.0262***
	(−13.58)	(−4.70)
Middle education	0.199***	0.217**
	(6.61)	(3.14)
High education	0.112***	0.0756
	(3.37)	(1.00)
Marriage Duration 0-1	0.829***	1.006***
	(16.61)	(6.57)
Marriage Duration 2-7	0.0287**	0.104***
	(3.02)	(4.69)
Marriage Duration 7plus	−0.0295***	−0.0264***
	(−8.97)	(−4.20)
Children: One	−0.532***	−0.412
	(−4.60)	(−1.39)
Children: Two	−1.129***	−0.797**
	(−9.43)	(−3.21)
Children: three	−0.154	−0.284
	(−1.63)	(−1.51)
Remarriage	1.350***	1.510***
	(41.24)	(21.52)
Constant	−5.952***	−8.816***
	(−22.59)	(−8.45)
Observations	629797	102509
Subjects	50,578	20,282

z score in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Table B3 shows the estimated odd ratios using discrete-time event history analysis. The estimates are based on individual level dataset from GSOEP panel survey for period 1978-2022 and controls for time and individual level fixed effects. Column 1 shows the log odds for time window 1978-2021 and column 2 shows estimations based on window 2004-2012. The main variable of interest is the interaction term post x gender which captures the gender specific risk of divorce after divorce.

Table (B4) Marginal Effects using Discrete Time Event History Analysis

	(Marginal Effects) Sample 1978-2021	(Marginal Effects) Sample 2004-2012
Female	0.00145***	0.00583***
	(5.69)	(8.52)
Post Reform	0.00149	0.00004
	(1.04)	(−0.04)
Age Spline 18-30	−0.0000674	0.000701
	(−0.76)	(1.71)
Age Spline 30plus	−0.000358***	−0.000307***
	(−13.41)	(−4.67)
Middle education	0.00193***	0.00256**
	(6.57)	(3.14)
High education	0.00104***	0.000831
	(3.34)	(0.99)
Marriage Duration 0-1	0.00803***	0.0118***
	(16.28)	(6.47)
Marriage Duration 2-7	0.000277**	0.00122***
	(3.02)	(4.65)
Marriage Duration 7+	−0.000286***	−0.000308***
	(−8.91)	(−4.17)
Children: One	−0.00417***	−0.00409
	(−5.95)	(−1.69)
Children: Two	−0.00687***	−0.00670***
	(−16.45)	(−4.72)
Children: three	−0.00143	−0.00299
	(−1.75)	(−1.72)
Remarriage	0.0218***	0.0301***
	(26.28)	(13.47)
Observations	629797	102509
Subjects	50,578	20,282

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Table B4 shows the estimated marginal effects based on event history model (B3) using discrete time event history analysis. The estimates are based on individual level dataset from GSOEP panel survey for period 1978-2022. Column 1 shows the probability of divorce for time window 1978-2021 and column 2 shows estimations based on window 2004-2012. The main variable of interest is the interaction term post x gender which captures the gender specific risk of divorce after divorce. The marginal effects for each gender and in post period are presented in the first two rows

Table (B5) Sample Distribution for Regressions by Potential Beneficiary

	High Risk Group			**Medium Risk Group**			**Low Risk Group**		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Saving	All	Beneficiary (F)	Beneficiary(M)	All	Beneficiary (F)	Beneficiary(M)	All	Beneficiary (F)	Beneficiary(M)
Treated	340	331	9	342	317	25	340	294	46
Control	368	234	134	371	233	138	375	235	140
Total	6,269	5,028	1,241	6,226	4,838	1,388	6,251	4,668	1,583
Female Participation	All	Beneficiary (F)	Beneficiary(M)	All	Beneficiary (F)	Beneficiary(M)	All	Beneficiary (F)	Beneficiary(M)
Treated	373	333	9	345	230	25	343	296	47
Control	342	236	137	375	234	141	381	238	143
Total	6,591	5,270	1,321	6,584	5,110	6,617	1,822	4,921	1696
Male Participation	All	Beneficiary (F)	Beneficiary(M)	All	Beneficiary (F)	Beneficiary(M)	All	Beneficiary (F)	Beneficiary(M)
Treated	342	333	9	345	320	25	343	296	47
Control	373	326	137	375	234	141	381	238	143
Total	6,591	5,270	1,321	6,584	5,110	1,474	6,617	4,921	1,696
Female Hours Worked	All	Beneficiary (F)	Beneficiary(M)	All	Beneficiary (F)	Beneficiary(M)	All	Beneficiary (F)	Beneficiary(M)
Treated	298	298	9	317	292	25	336	289	47
Control	364	227	137	369	228	141	375	232	143
Total	5,417	4,118	1,299	5,651	4,200	1,451	6,038	4,371	1,667
Male Hours Worked	All	Beneficiary (F)	Beneficiary(M)	All	Beneficiary (F)	Beneficiary(M)	All	Beneficiary (F)	Beneficiary(M)
Treated	341	333	8	345	320	25	338	296	42
Control	372	236	136	378	234	141	380	238	142
Total	6,406	5,200	1,206	6,584	5,110	1,474	6,315	4,814	1,501

Note: Table B5 shows the distribution of total sample of married couples by risk groups and potential beneficiary. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. For each risk group and subgroup, I show the number of observations of treated households, control households and total number of observations.

Table (B6) Sample Distribution by Subgroups

	High Risk Group			**Medium Risk Group**			**Low Risk Group**		
	(1) egalitarian	(2) male	(3) female	(4) egalitarian	(5) male	(6) female	(7) egalitarian	(8) male	(9) female
Treated	289	194	11	310	167	16	324	119	45
Control	357	65	56	362	62	58	367	63	58
Total	4942	1125	180	5083	923	215	5390	534	281
	low income	middle income	high income	low income	middle income	high income	low income	middle income	high income
Treated	269	243	72	170	307	165	212	291	128
Control	135	319	216	216	323	137	221	321	135
Total	2134	3061	1074	1561	3544	1141	1822	3479	943
	no kid	one kid	more than 1 kid	no kid	one kid	more than 1 kid	no kid	one kid	more than 1 kid
Treated	141	204	228	161	210	211	203	216	173
Control	283	212	124	283	217	124	288	213	125
Total	2372	1643	2254	2570	1677	1999	2897	1674	1673
	young	middle age	old	young	middle age	old	young	middle age	old
Treated	99	292	217	117	271	200	113	272	208
Control	97	279	250	97	283	252	97	279	258
Total	797	3027	2446	983	2958	2305	935	2929	2308

Note: Table B6 shows the distribution of total sample of married couples by risk groups and subgroups. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. For each risk group and subgroup, I show the number of observations of treated households, control households and total number of observations. how the labor market behaviour of husbands differ across income distribution (low, middle, high), presence of children (0, 1 , more than one kid) and age cohort of head of household (young, middle, old). For example, in first category of high risk, total number treated egalitarian couples are 289, control group consists of 357 egalitarian couples and total observations for both treated and control for the observed period 2003-2013 are 4942.

Table (B7) Difference-in-Difference Estimates by Risk Group using Cohabitating Couples as Control Group

	High Risk Group			Medium Risk Group			Low Risk Group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent Variables	All	Female Beneficiary	Male Beneficiary	All	Female Beneficiary	Male Beneficiary	All	Female Beneficiary	Male Beneficiary
Savings Level	42.473	16.277	170.949	-17.445	-29.045	60.835	-22.613	-36.097	-26.960
	(31.294)	(41.121)	(105.081)	(25.072)	(36.606)	(61.861)	(23.695)	(34.088)	(44.170)
Saving Rate	0.005	0.000	0.026	-0.007	-0.012	0.009	-0.007	-0.010	-0.018
	(0.008)	(0.011)	(0.016)	(0.008)	(0.011)	(0.018)	(0.007)	(0.011)	(0.013)
Female Participation	0.059**	0.035	-0.042	0.057**	0.039	-0.008	0.026	0.009	-0.000
	(0.029)	(0.038)	(0.033)	(0.029)	(0.038)	(0.022)	(0.026)	(0.037)	(0.031)
Male Participation	-0.037**	-0.002	-0.058	-0.046**	-0.007	-0.024	-0.045**	-0.002	-0.063
	(0.015)	(0.009)	(0.045)	(0.018)	(0.010)	(0.054)	(0.019)	(0.011)	(0.056)
Female Hours Worked	0.116**	0.113*	0.092	0.075	0.068	0.056	0.029	0.027	-0.049
	(0.052)	(0.061)	(0.095)	(0.049)	(0.059)	(0.073)	(0.044)	(0.055)	(0.061)
Male Hours Worked	-0.030	-0.057**	0.081	-0.017	-0.033	-0.091	-0.005	-0.023	0.013
	(0.028)	(0.022)	(0.176)	(0.029)	(0.022)	(0.151)	(0.030)	(0.023)	(0.108)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Household FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: Table B7 shows the average treatment effects on treated (married couples) according to their exposure to risk of financial troubles in case of potential divorce compared to cohabitating couples as c control group. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. For each risk group, I show how the impact varies depending upon the potential beneficiary (Female or Male) of the maintenance payment. Column 1,4,7 ("All") shows the treatment effect without considering the potential beneficiary of the maintenance payment. Each row represents a separate regression model and shows the average treatment effect on the respective dependent variable including saving rate, female labor market participation, male labor market participation, female annual hours worked(log), male annual hours worked(log). The estimates are based on difference in difference framework and controls for husbands demographics, wife demographics, household characteristics, time and households level fixed effects.

Table (B8) Difference-in-Difference Estimates by Risk Group and Potential Beneficiary of Spousal Maintenance

	High Risk Group			Medium Risk Group			Low Risk Group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent Variables	All	Female Beneficiary	Male Beneficiary	All	Female Beneficiary	Male Beneficiary	All	Female Beneficiary	Male Beneficiary
Monthly savings level	41.378*	22.207	180.736***	3.163	-13.095	57.519	17.595	11.863	-1.697
	(24.939)	(27.535)	(35.418)	(15.234)	(19.042)	(49.248)	(15.529)	(19.852)	(31.024)
Saving Rate	0.007	-0.000	0.049***	0.006	-0.001	0.025	0.009*	0.006	0.002
	(0.005)	(0.006)	(0.010)	(0.005)	(0.006)	(0.015)	(0.005)	(0.006)	(0.010)
Female Participation	0.107***	0.105***	0.028	0.078***	0.078***	0.069	0.023	0.024	0.010
	(0.019)	(0.023)	(0.020)	(0.020)	(0.024)	(0.050)	(0.016)	(0.021)	(0.018)
Male Participation	-0.008	-0.015*	-0.019	-0.018**	-0.020**	-0.039	-0.020	-0.030***	0.004
	(0.008)	(0.009)	(0.023)	(0.009)	(0.009)	(0.047)	(0.012)	(0.011)	(0.046)
Female Hours Worked	0.142***	0.146***	0.044	0.085***	0.088**	0.036	0.043*	0.042	0.031
	(0.040)	(0.043)	(0.063)	(0.032)	(0.036)	(0.048)	(0.023)	(0.028)	(0.040)
Male Hours Worked	-0.049***	-0.041**	-0.285***	-0.031**	-0.026	-0.067	-0.023	-0.018	-0.043
	(0.015)	(0.017)	(0.103)	(0.016)	(0.017)	(0.114)	(0.017)	(0.017)	(0.063)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Household FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: Table B8 shows the average treatment effects on treated (married couples) according to their exposure to risk of financial troubles in case of potential divorce. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce using income information for year 2006, as a robustness check. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. For each risk group, I show how the impact varies depending upon the potential beneficiary (Female or Male) of the maintenance payment. Column 1,4,7 ("All") shows the treatment effect without considering the potential beneficiary of the maintenance payment. Each row represents a separate regression model and shows the average treatment effect on the respective dependent variable including saving rate, female labor market participation, male labor market participation, female annual hours worked(log), male annual hours worked(log). The estimates are based on difference in difference framework and controls for husbands demographics, wife demographics, household characteristics, time and households level fixed effects.

Table (B9) Difference-in-Difference Estimates by Risk Group using Spousal Maintenance and Children Support Alimony

	High Risk Group			Medium Risk Group			Low Risk Group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent Variables	All	Female Beneficiary	Male Beneficiary	All	Female Beneficiary	Male Beneficiary	All	Female Beneficiary	Male Beneficiary
Saving Rate	0.008	-0.001	0.041***	0.007	-0.001	0.035**	0.003	-0.003	0.013
	(0.006)	(0.006)	(0.010)	(0.005)	(0.005)	(0.017)	(0.005)	(0.006)	(0.008)
Female Participation	0.070***	0.063***	0.006	0.069***	0.066***	-0.012	0.003	0.003	-0.016
	(0.019)	(0.022)	(0.031)	(0.019)	(0.022)	(0.016)	(0.015)	(0.020)	(0.018)
Male Participation	-0.014	-0.013	-0.009	-0.001	-0.000	-0.010	0.007	0.004	0.013
	(0.012)	(0.013)	(0.026)	(0.012)	(0.013)	(0.037)	(0.011)	(0.011)	(0.025)
Female Hours Worked	0.124***	0.111***	-0.090	0.111***	0.102***	0.067	0.019	0.020	-0.018
	(0.037)	(0.040)	(0.176)	(0.034)	(0.038)	(0.091)	(0.024)	(0.031)	(0.028)
Male Hours Worked	-0.034*	-0.027	-0.014	-0.009	-0.000	-0.064	0.015	0.007	0.052
	(0.018)	(0.019)	(0.052)	(0.016)	(0.018)	(0.080)	(0.019)	(0.019)	(0.049)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Household FE	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note: Table 4.2 shows the average treatment effects on treated (married couples) according to their exposure to risk of financial troubles in case of potential divorce. Column 1-3 "High Risk Group", Column 4-6 "Medium Risk Group" and Column 7-9 "Low Risk Group". Risk groups are defined based on the estimated potential expected loss of alimony for married households if they get divorce. Above 75th percentile are at high risk, 50-75th percentile are at medium risk, 25-50th percentile are low risk and below 25 percentile are almost at zero risk. For each risk group, I show how the impact varies depending upon the potential beneficiary (Female or Male) of the maintenance payment. Column 1,4,7 ("All") shows the treatment effect without considering the potential beneficiary of the maintenance payment. Each row represents a separate regression model and shows the average treatment effect on the respective dependent variable including saving rate, female labor market participation, male labor market participation, female annual hours worked(log), male annual hours worked(log). The estimates are based on difference in difference framework and controls for husbands demographics, wife demographics, household characteristics, time and households level fixed effects.