Clean Breaks at Public Cost?

His Earnings and the Effect of Marital Separation on Her Social Assistance Take-up

Abstract

In cases where divorced women's income is insufficient to cover reasonable needs, Western welfare states rely on the principle of subsidiarity and on the regulations governing alimony to define who has access to social benefits. When women in need are considered entitled to alimony, the principle of subsidiarity defends the idea that social benefits should *only* be permissible if their ex-husband cannot provide sufficient financial support. However, increasing social and institutional support for "clean breaks" – i.e. divorce agreements that exempt ex-spouses from financial obligations towards each other - and divorced women's mounting reliance on government transfers suggest that the principle of subsidiarity might be disregarded.

In this study, we empirically tested this hypothesis by making use of uniquely tailored administrative data on Swiss women's social assistance (SA) take-up and couple earnings after marital separation. We found robust evidence in support of subsidiarity. Marital separation causes a 24-percentage point increase in the risk of SA take-up for women with few economic own resources and when their ex-husbands' earnings are located at the bottom quartile of employed men's income distribution. On the other hand, such women are nearly fully shielded from separation-induced SA take-up if their ex-husbands are top-25%-earners. These results suggest that the largest part of the public cost that accrues from marital disruption in the form of SA take-up is not attributable to "clean breaks". Rather, policies aiming to reduce divorce-related welfare expenditures should target increasing women's capacity in acquiring own economic resources.

Introduction

For four decades now, scholarly literature on the economic consequences of divorce has consistently concluded that women in most Western countries have been experiencing losses in economic well-being as a result of divorce (Bröckel and Andreß 2015; DiPrete and McManus 2000; Döring and Hauser 1989; Hauser et al. 2016; Hoffman 1977; Holden and Smock 1991; McKeever and Wolfinger 2001; Smock, Manning, and Gupta 1999; Tach and Eads 2015; de Vaus et al. 2017). Welfare transfers are effective means of alleviating divorced women's economic hardship (Aassve et al. 2007; Andreß et al. 2006; Uunk 2004). At the same time, however, they make up a large part of the total cost of divorce that accrues to the state. Empirical research has paid considerable attention to women's employment and earnings before and after separation (van Damme 2010; Herbst and Kaplan 2016; Özcan and Breen 2012; Raz-Yurovich 2013; Tamborini, Couch, and Reznik 2015) and has acknowledged its positive role for women's economic adjustment after divorce (Jansen, Mortelmans, and Snoeckx 2009). However, in the frequent situation where women earn too little to support themselves in the wake of a divorce, it is mostly ex-spouses' private transfers (such as alimony) that prevent them from recurring to government transfers and such mechanism has received only scant attention in empirical family research (Shehan et al. 2002).

In some form or another, Western welfare states follow the *principle of subsidiarity* and *regulations governing alimony* in determining the share of private and public transfers after divorce. *Subsidiarity* defends the idea that political and economic responsibility should be allocated to the lowest possible unit (Evans and Zimmermann 2014). It requires that public transfers are *not* issued to a divorced individual in economic need if her or his former spouse *could* provide financial assistance. *Alimony regulations* determine eligibility to alimony payments, and, by extension, the upholding of the principle of subsidiarity. Only under the condition that a divorced individual in need is *not* eligible for alimony, should the principle of subsidiarity be relaxed, and public transfers be paid out despite the presence of a sufficiently solvent former partner.

Recent international evidence suggests that private transfers between ex-spouses – which, in the vast majority of cases, flow from men to women - have been declining (for Germany see: Bröckel and Andreß 2015; for the US see: Crowley 2017; McMullen 2014; Meyer, Cancian, and Chen 2015; Tach and Eads 2015)[1]. Such declines partly occurred against the background of women's decreasing eligibility for alimony - e.g., due to their increased participation in the labor market and changes in children custody arrangements (Cancian et al. 2014; Meyer, Cancian, and Chen 2015; Tach and Eads

[1] Evidence of a decline of private transfers in the US is clear with respect to adult alimony but mixed in terms of child support payments. A Wisconsin study finds reductions in child support orders (Meyer et al. 2015), while national studies show increases in absolute levels of received child support payments reported by divorced mothers (Tach and Eads 2015).

2015). Increasing women's economic independence also provided the backdrop for raising social and institutional support for "clean breaks" (Bröckel and Andreß 2015; McMullen 2014; Berghahn 2004), that is for divorce arrangements that exempt both parties from requesting financial support from each other. This paradigm shift was also advocated with the hope of reducing litigations between ex-spouses and facilitating psychological adjustment to divorce (Crowley 2016, 2017; Cunha 2016; McVeigh 2017).

Yet, both German and US evidence show that divorced women's dependence on government transfers has also risen over the last decades (Bröckel and Andreß 2015; Tach and Eads 2015). Decreasing private transfers and increasing reliance on welfare benefits suggest the possibility that there has been a shift of responsibility for divorced women's economic well-being from former husbands to the public. Given such changes, the question arises of whether today part of women's welfare dependency related to marital separation is due to violations of the principle of subsidiarity. Evading spousal transfers at the expense of the state is not only problematic because it places an avoidable burden on the welfare system, but also because it makes men less accountable for marital exits, increases women's risk of falling into the poverty trap and intensifies already existent inequalities between former spouses (T. Leopold 2016).

Making use of uniquely tailored Swiss administrative data on social assistance[2] (SA) take-up and couple earnings after marital separation, this study tests the hypothesis that subsidiarity is disregarded and correspondingly asks a) *does marital separation increase women's SA take-up, b) does the effect persist independently of their ex-husbands' earnings, and c) can patterns a) and b) be observed for women who are eligible for alimony*? To answer these questions, we study the association between ex-husbands' earnings and the effect of marital separation on women taking up SA. We consider that the principle of subsidiarity is violated when separation causes women that would in fact be eligible for alimony to have a heightened probability of SA receipt, and if this holds irrespective of the level of husbands' earnings. We define women as eligible for alimony using two criteria derived from alimony theory (Landes 1978; Starnes 2011; Oster 1987; Jeandidier and Lim 2015): if marriage has caused great inequality in a couple's life-time earnings, or if the couple has child care duties at the moment of separation.

Our research expands the literature on the economic consequences of divorce in significant ways. First, our paper is among the first to investigate the indirect consequences of "clean breaks" on SA take up (cf. Bredtmann and Vonnahme 2017). By exposing violations of the principle of subsidiarity, it can indicate whether part of the cost of divorce borne by public funds is avoidable (e.g., by readjusting private transfer policies), or whether other measures (e.g. strengthening women's earnings) are better

[2] In Switzerland, SA is a means-tested social benefit for the working-age population and represents the financial safety net of last resort.

placed to efficiently reduce post-divorce SA take-up. Second, comparable to the US, Switzerland is a context where public transfers account for a relatively small proportion of divorced women's household incomes, but private transfers remain relatively important (de Vaus et al. 2017). More widely, Swiss data on the role of post-divorce private transfers in reducing public assistance is informative also for contexts where public transfers are more prevalent and where similar concerns of clean breaks occurring at public costs emerge. Ultimately, given our substantial sample size, we are better able to delve into the consequences of divorce for women with scarce economic resources and a high potential of transfer dependency. Such women are mostly under-represented in conventional panel studies, which thus miss to fully comprehend processes of cumulative disadvantage (Vandecasteele 2011; L. Leopold and Leopold 2016). Together with its long-term longitudinal data structure, our study thus responds to recent calls to tap into the potential of administrative data for research on the intersection between life-course risks and welfare state functioning (Connelly et al. 2016; O'Hara, Shattuck, and Goerge 2017).

Private and public transfers after divorce

As previously noted, the relative significance of private and public transfers after divorce is determined by both the *principle of subsidiarity* and *alimony regulations.* In questions of material livelihood, subsidiarity stipulates that if individuals are unable to make ends meet on their own, they should *only* receive public benefits if there are no family members who could provide financial assistance. Therefore, in the event of divorce, means-tested social benefit schemes – such as SA in Switzerland - assess whether ex-partners can be made to pay before allowing benefits.

However, regulations on alimony define situations where the principle of subsidiarity should be relaxed, that is, where an ex-partner should not be considered as belonging to the group of people who can be held responsible for a divorcee's livelihood. In this case, benefits could be paid out despite the presence of an ex-partner who *could* provide financial assistance. The legal theory literature (Starnes 2011; Oster 1987; Jeandidier and Lim 2015; Landes 1978) has enumerated several basic principles motivating transfer payments between ex-spouses. In the following, we outline two of the most notoriously discussed compensation guidelines that allow one to contrast couples for whom alimony should be high (and the principle of subsidiarity met) from couples for whom alimony should be absent (and the principle of subsidiarity relaxed): *marriage-related economic gains and losses,* and *child care status*. In the following, we develop alimony eligibility criteria for both principles.

Compensation of marriage-related economic gains and losses

The main assumption carried forward by "the marriage-related economic gains and losses" principle of alimony is the idea that marriage, and especially marriage combined with parenthood, causes one spouse to have greater and the other more restricted career development (Doriat-Duban and

Bourreau-Dubois 2012; Jeandidier and Lim 2015; Landes 1978; Oster 1987; Starnes 2011). The underlying processes are described by economic theories on the intersection between specialization and human capital accumulation (Becker 1985). After union formation, the partner with the more advantageous position in the labor market – in most cases the husband - invests larger amounts of time and resources to work, while the other partner - usually the wife – invests more time in caregiving and housework. Because children often initially decrease women's economic productivity and increase the amount of domestic tasks a couple has to accomplish, the potential benefits of specialization likewise increase, making parenthood an important driver of gendered role differentiation within couples (Budig and England 2001; Le Goff and Levy 2017; Killewald and García-Manglano 2016). Specialization increases the functional efficacy of the couple's household during marriage creating gender inequality in employment histories and human capital (Becker 1985). After a divorce, men's earning potential is higher than if they would have remained single while women's earning potential is lower (Cheng 2016).

Alimony can be justified in terms of distributional justice (Oster 1987). The primary argument is straightforward: without alimony, marriage-related economic gains after separation would fall fully upon the partner specializing in market work, while the economic losses would fall upon the economically weaker partner. Another argument for alimony refers to its behavioral implications. The appeal of specializing in caregiving and housework is crucially linked to continuous income sharing, and is feasible, even advantageous, if the couple shares one household. In contexts where divorce is widespread, it is less likely that the partner who specializes in domestic tasks would have done so without the safety blanket of alimony in the event of a divorce. Therefore, alimony is recognized as an instrument that encourages specialization, and, by that, the optimal resources allocation within marriages (Landes 1978). Both arguments entail that the more couple members specialize after marriage, the more alimony payments should be awarded frequently, and set at greater levels and for longer durations. Following this idea, our first criterion of marriage-related economic gains and losses is the extent to which the husband and wife of a given couple would be more equal in terms of their earnings histories than they are, had they remained unmarried and had they not had any common children.

Compensation of inequalities related to post-separation child care

The second central set of arguments for alimony payments is related to post-separation inequalities in child care. On the one hand, child physical custody moderates the economic effects of divorce by altering living expenditures. Marital separation leads to increased living costs for the couple taken together, given the reduced economies of scale related to the costs of two households instead of one (Bröckel and Andreß 2015). However, as children mostly reside with the mother after divorce (Cancian et al. 2014), the effects of divorce on living expenditures are usually higher for women (Bröckel and

Andreß 2015). Hence, in these cases, alimony payments for children are justified to ameliorate an unequal distribution of children's living costs after separation. Moreover, because child care obligations restrict the time women can allocate for paid work, divorced women with children are less likely to re-enter the workforce or to increase their working hours and earnings if they are already employed (van Damme 2010; Herbst and Kaplan 2016). Such views, in short, declare that economic transfers from husbands to wives – both child and adult alimony - are more justified when there are more children and when these children impose more time restrictions on the mother.

The decline in alimony

This article parts from the observation that alimony is on the decline. Explanations of this trend usually refer to two sources of change. First, the decline in alimony is linked to changes in divorcees' composition (Bröckel and Andreß 2015; McMullen 2014; Meyer, Cancian, and Chen 2015; Oster 1987). Increasingly fewer women meet the criteria that make them eligible for alimony payments. A central component of compositional change is the lesser impact marriage has had on women's careers (Tach and Eads 2015). Also, the weight of inequality in post-separation childcare in alimony agreements has decreased. This can be related to the sheer decline in the number of divorces that include minor children, which corresponds to a rise of divorce rates among older couples with major children (Brown and Lin 2012). The increased involvement of fathers in child care and physical custody after separation could likewise have fostered reductions in child support payments (Meyer, Cancian, and Chen 2015). Second, the decline in alimony is explained by means of political changes. Rulings that cut alimony eligibility were motivated by both economic and non-economic arguments. Because payers can reduce their obligations by reducing their own earnings, and payees have a lesser need to increase their own earnings than they would without alimony, alimony is believed to lower divorcees' labor supply (Bredtmann and Vonnahme 2017; Cancian, Heinrich, and Chung 2013; Chiappori et al. 2017; Covizzi 2008). This undesirable economic side-effect has fed criticism of alimony. Anti-alimony movements have additionally claimed that alimony hinders spouses' adaptation to divorce, arguing that payments prolong spouses' marital roles, which hinders them in adapting to their new lives and leaves them not only economically but also psychologically tied to their ex-spouses (Crowley 2016, 2017).

The available empirical evidence on alimony trends paints a relatively unambiguous picture (Crowley 2016, 2017; McMullen 2014). In absolute terms, the number of US women receiving support payments between 1994 and 2013 declined 17.5% (Crowley 2017). In a Wisconsin sample, the share of divorce settlements ordering alimony has been estimated to have dropped from 21% in 1978 to 9% in 2005 (McMullen 2014). The sole evidence in favor of a relatively constant role of private transfers are those paid to women with children: while the number of child support orders decreased (Meyer, Cancian, and Chen 2015), their absolute size in the immediate aftermath of divorce has climbed to some extent (Tach and Eads 2015). In Germany, men's economic burden stemming from spousal transfers after

separation has decreased. While private transfers raised the probability of a post-tax income loss for men as a result of divorce from 41.2% to 57.3% in the 1980s and the 1990s, its effect has been substantially reduced to an increase from 45.7% to 51.5% for recent separations (Bröckel and Andreß 2015). In Switzerland, where private transfers make-up a relatively important part of women's post-separation household incomes (de Vaus et al. 2017), the share of divorce decrees ordering spousal alimony has declined as well. The probability that a woman with two or more children is granted adult alimony in a divorce trial has declined from a high of 76% in 1995 to 48% in 2008 (BFS (Federal Statistical Office) 2017c). In sum, international trends in divorce law practice point towards a rise in "clean breaks", that is, divorce agreements in which former spouses are exempted from economic obligations towards each other that last beyond the union.

Hypotheses

Two pieces of evidence support the assumption that there has been a shift in the composition of the household income of divorced women from private to public transfers. For one, paradigmatic changes in alimony law did not have the hoped-for impact on women's economic self-sufficiency. In contradiction to economic theory, Bredtmann and Vonnahme (2017) show that the cuts in alimony eligibility in 2008 in Germany did not increase women's labor supply. Rather, the share of government transfers in divorced women's household incomes has increased in recent decades (Bröckel and Andreß 2015; Tach and Eads 2015). It seems reasonable to assume that decreases in alimony created conditions where women must recur to SA after divorce despite having former partners who could provide material assistance. The question then is: Do women nowadays take-up social assistance after marital separation in Switzerland because the principle of subsidiarity is being violated?

As laid out in our theoretical framework, verifying compliance with the principle of subsidiarity requires taking two pieces of information into account. First, we need to consider the association between ex-husbands' earnings and the effect of separation on women's social assistance take-up. If the *principle of subsidiarity holds*, we shall observe a negative statistical relationship: women whose ex-husbands earn little are more at risk of entering SA than women whose ex-husbands have high incomes, since the latter can rely on greater monetary and in-kind private transfers. Because the influence of husbands' earnings on the size of paid transfers is likely to follow a non-linear pattern, we expect that this relationship is staggered. Up to a certain level of income, husbands cannot make any transfer payments. Transfers thus begin to rise only after this level of husbands' earnings has been reached, and only then do we expect the risk of SA to start declining. Most importantly, we expect that the effect of marital separation on women's SA take-up vanishes after a certain earnings level of their husbands. Conversely, if the *principle of subsidiarity is violated*, we should observe that a higher ex-partner income does not reduce and eventually eliminate the influence of marital separation on the

risk of SA receipt. In other words, even women whose husbands earn high incomes experience a substantially increased risk of taking-up SA due to marital separation.

Second, since the principle of subsidiarity should be relaxed for women who do not qualify for alimony, we must consider *information on whether women are eligible for alimony*. We calculate women's alimony eligibility by referring to the above-outlined criteria. A woman is eligible for alimony if she would have earned a life-time income much more like that of her ex-partner if they had never married or never had a child together, *or* if she has an underage child from her ex-partner. In sum, we only speak of violations of the principle of subsidiarity if a) marital separation causes women to have a heightened risk of SA take-up, b) if this effect persists across the distribution of husbands' earnings *and* c) if this holds for women who are eligible for alimony.

Data and Methodology

Sample and data

The study draws on data from respondents to the Swiss Labor Force Survey (SLFS) who participated at least once between 2002 and 2014[3] (BFS (Federal Statistical Office) 2017a), of whom we selected a subsample of divorcees by using administrative information on civil status changes from the statistics on natural movements of the population (BEVNAT, BFS (Federal Statistical Office) 2017c). BEVNAT provided the social security identification numbers of ex-partners of SLFS respondents who divorced in 2011 or later. In total, we identified 7,185 cases of couples where one of the partners participated in the SLFS and the legal divorce was enacted between January 2011 and December 2015.

For 7,008 couples within this subsample, we could identify administrative information on earnings and SA take-up for both spouses. Earnings are measured through individual accounts from the Central Compensation Office. This data covers all market incomes made by wives and husbands between January 1982 and December 2014, including earnings from paid employment and self-employment[4]. To correct for secular trends in wages and prices, earnings have been adjusted to December 2015 price levels. Information on SA has been retrieved and merged to the dataset from individual-level records of the Swiss Social Assistance Statistics 2005-2014 (BFS (Federal Statistical Office) 2017b).

Because the economic consequences of divorce essentially emerge with the breakup of a household and not with the legal enactment of the divorce, the base sample was enriched with individual level information on address registrations within municipalities (see below for definition of marital separation). This data was drawn from the Population and Households Statistics (STATPOP). We deleted from our sample couples for whom a) no separation date could be identified, b) separation

[3] The average survey year of the sample is 2009. Descriptive analyses make use of survey weights standardized to annual SLFS sample sizes.

[4] Annual earnings below CHF 2,300 are not included.

dates did not fall between 2009 and 2015 (to reduce measurement errors[5]), c) no premarital earnings were observed (i.e. couples who married before 1983) and d) separation occurred after the woman's retirement age[6] (because SA allowances are restricted to the working-age population). Figure 1 displays the process of data linkage and sample construction and respective changes in sample sizes. We ended up with a final sample of 3,421 couples.

[Figure 1 about here]

Sample description

Table 1 gives an overview of our dependent, independent, moderator and control variables and their distributions. In addition, it provides a detailed description of the relevant processes affecting our sample in the period surrounding separation using additional information reported in the SLFS.

Women's SA receipt

To measure SA receipt, we use a binary indicator describing whether a woman has received any monetary SA from the municipality in each year. Despite women's increases in labor market participation, working hours and earnings at the time of marital separation, they experience a fourfold increase in the risk of receiving *SA* during the period from the calendar year before separation to the calendar year after separation. Husbands' risk of SA receipt, too, increases in this period, although at a substantially lower rate (cf. Table 1, Social assistance).

Marital separation

The date of separation is defined as the first day after marriage that one of the spouses is registered at a new address without the other changing address on the same day and to the same municipality. SLFS data on household structure suggests that address registration does a relatively satisfying job of measuring *marital separation*. While in the calendar year before the date of their separation 84% of the female respondents surveyed in that year reported cohabiting with a spouse, in the calendar year after separation 80% reported living without a partner, 5% with an unmarried cohabiting partner and 15% with a married partner[7] (cf. Table 1, Dependent children).

[5] STATPOP includes information on the last date of address registration as of December 2010 and all dates of address registration between January 2011 and December 2015. To have a plausible range of differences between separation and divorce dates, we restrict our sample to couples who separated in 2009 or later, capping the distribution of divergence between separation and divorce dates at 6 years (separation date 2009, divorce date 2015). Robustness checks show that the effect of separation on social assistance take-up is slightly reduced by including earlier separations but is not increased when restricting the sample to later years, pointing to greater measurement error among cases with separation dates prior to 2009.

[6] Women above the age of 63.

[7] The 15 percent who reported living alone in the year before separation can be interpreted in terms of measurement error (actual separation was earlier), or in terms of a time lag between actual household breakup and registration to the new household after separation. This cannot be disentangled. The 15 percent who

Husbands' earnings

The lower economic risks that men incur in compared to women after separation can be related to their *relatively higher earnings*. In the calendar year after separation, ex-husbands in the lowest quartile of the earnings distribution earned an average annual income of 33,602, followed by 69,905 for those in the second quartile, 93,093 for those in the third, and 161,181 Swiss francs for those in the highest quartile. We use quartile adherence (defined by the distribution of non-zero earnings by husbands in each year as well as an additional category for zero-earners) as an indicator of husbands' earnings (see section "Modeling strategy").

Women's economic resources

Because women's own economic resources are positively correlated with their husbands' earnings, the estimate of the impact on husbands' earnings must be corrected for women's economic resources. We measure women's economic resources by women's annual earnings, which in the year before separation averaged 45,108 CHF. Also, we use a proxy for women's wealth based on their cumulated life-time earnings (since 1982). Since without marital contracts specifying alternative distributions, the total wealth accumulated by the couple during the marriage is split in half at divorce, the wealth variable is augmented by half of the husband's cumulated earnings during the union, which leads to an average value of approximated wealth of 1.09 million CHF in the calendar year after separation. For both earnings and approximated wealth, we use quartile adherence (with zero values categorized into the lowest quartile).

Alimony criteria

Table 1 also contains information on the distribution of our measures of alimony eligibility. In the calendar year after separation, a women's life-time earnings amounted, on average, to 38 percent of a couple's sum of life-time earnings (since 1982). Our measure of *marriage-related economic gains and losses* is the difference between this observed share and the counterfactual share if the couple remained unmarried and if they had no children together. The counterfactual share is the predicted value of a random effects model predicting the women's share of the couple's life-time earnings when marriage, birth of the first common child and separation are set to have not happened yet. The model used for the prediction leans on Cheng's (2016) specification of the long-term effects of marriage on wages. It includes dummy variables of the years before and after marriage, interactions between these dummies and the wife's share in the couples' annual earnings in the year before marriage, age at marriage of husband and wife, citizenship of husband and wife, a dummy for single civil status before

reported living with a married partner after separation can be interpreted in terms of measurement error (actual separation was later), or in terms of remarriage. Supplementary analyses using administrative data suggest that in the calendar year after separation, only 2.3% of women in our sample were remarried. Hence, around 13% of the women in our sample are thus wrongly coded as separated even though they still live with their husbands, which will lead to an underestimation of the effect of marital separation.

marriage of husband and wife, as well as year of marriage and controls for dummies capturing years since birth of youngest common child, dummies for years to separation, a continuous measure of years since first non-zero earnings (and a squared term of it, together capturing the influence of potential work experience) and observation year. On average, the counterfactual ratio is 46%, implying an 8-percentage point average differential to the observed situation. In our sample, marriage thus induced substantial inequality in couples' earnings histories.

We distinguish child care status by presence of at least one *child below age 15* in the calendar year after separation, which is the case for 45% of couples. This age threshold was chosen because a considerable portion of children leave school at age 15 and are believed to become less burdensome for the custodial parent in terms of time restrictions and financial support (as they start to contribute to the household income). Therefore, we argue that mothers either with no children or older children are less eligible for alimony payments than mothers with children under the age of 15. Among couples with a child in this age category, 84% of women and only 20% of men report cohabitation with a child in the calendar year after separation, which supports the underlying assumption of gender inequality in child physical custody after separation.

[Table 1 about here]

Control variables

Our analysis (see below) also considers several control variables. *Observation year* is included to capture secular trends in SA receipt, e.g., due to changes in eligibility criteria or the introduction of alternative transfers[8]. On average, the separations in our analytical sample took place in 2011, with an average lead time of two years to the legal divorce.

Age categories are included to capture processes of capital accumulation independent of earnings, e.g., *inheritance, donations or capital gains,* which are expected to reduce SA take-up. At separation, women average 40 years of age and husbands 43 years. Approximating economic support from social networks that is not reflected in earnings histories, to check for robustness, we include categorical variables for wives' highest educational attainment (see section "Potential biases and robustness checks"). Because women's highest educational attainment is only measured either if the wife was the survey respondent, or the husband was the survey respondent but was surveyed in the period when he was still cohabiting with his wife and delivered information on her educational attainment, such models controlling for educational attainment are based on a reduced sample (cf. Table 1).

Modeling strategy

All estimates of the effect of marital separation on wives' SA receipt are based on random effects linear probability models with annual observations from 2005 to 2014 nested in women, using

[8] The cantons of Geneva, Vaud and Solothurn (20% of the sample) introduced family subsidies during the study period, which reduced separated women's SA receipt (Baumgartner, Gautschi, and Ehrler 2014).

heteroscedasticity robust standard errors (the design resembles the ones used by other recent studies into the consequences of divorce, e.g. Couch, Tamborini, and Reznik 2015; T. Leopold and Kalmijn 2016). The effect of separation thus captures the difference in the probability of receiving SA between women who are observed before their separation versus women who are observed after their separation, as well as the difference in the probability of receiving SA between the observations of the same women before their separation and after their separation. Because our sample excludes both continuously married and single women, between-women estimates are not biased by unobserved differences between separating and non-separating women with respect to SA receipt. This makes the random effects specification, due to the greater variance it exploits, superior to a fixed-effects specification (Brüderl and Ludwig 2015).

Our base model includes all possible interactions between a dummy measuring whether the separation occurred in the observation year or before, husband's earnings quartile adherence, wife's earnings quartile adherence, wife's approximated wealth quartile adherence and controls for marital duration, alimony criteria (impact of marriage on inequality and presence of child below 15), age of husband and wife and observation year. To substantiate the direction and shape of the association between husbands' earnings and the effect of marital separation on wives' SA take-up, we report average marginal effects (AME) of separation when all observations are set to the first, second, third and fourth quartile of husbands' non-zero earnings while leaving the rest of covariates as observed. The usage of quartiles allows us to capture non-linearity in the association between husbands' earnings and wives' SA take-up due to separation. To account for the role that a woman's own economic resources play in her eligibility for SA, we perform separate AME calculations by the level of a woman's own economic resources, defined by earnings and wealth quartiles.

In the second group of models, we restrict our sample to women in the bottom quartile of women's own economic resources. This allows us to depict the interaction between husbands' earnings and alimony criteria for the instructive case of women who are highly prone to SA take-up. In these models of the restricted sample, we include all possible interaction terms between a separation dummy, wives' earnings (continuous), husbands' earnings (quartiles) and our measures of alimony eligibility. We calculate separate models for each measure of alimony eligibility: a first one including the counterfactual-observed-wife-share-difference and a second one including a time-varying dummy for the presence of a child under age 15. In each of these models, age of husband and wife, observation year as well as the other, non-interacted compensation criterion, figure as control variables in the model specification. AMEs of separation are then calculated by categories of husbands' earnings and by levels of alimony eligibility. Eligibility for alimony is represented by AMEs at a counterfactual-observed-wife-share-difference of 30% - the woman's share of the couple's life-time earnings would be 30 percentage points higher than observed if the couple had remained unmarried and had no child

together - and the presence of a child under 15. Ineligibility for alimony is represented by husbands'-earnings-specific AMEs at respective values set at 0%[9] - marriage did not coincide with increases in inequality between wives' and husbands' life-time earnings - and by absence of a common child under 15.

Results

The effect of separation on women's social assistance take-up and its interaction with husbands' earnings

Figure 2 visualizes the point estimates (and 95% confidence intervals) of the effect of separation on women's SA take-up (Y-axes) by quartiles of women's own earnings and (approximated) wealth (bottom quartiles in both dimensions are shown in the top left panel, top quartiles in both dimensions in the bottom right panel) and quartiles of husbands' earnings (X-axes). First, the results show that – irrespective of husbands' earnings - marital separation does not significantly increase the risk of SA take-up for women in the top half of their distribution of economic resources. The greatest part of the average increase in the risk of SA take-up is concentrated among the lower ranks of the distribution of women's earnings and wealth. For women who belong to the lowest quartile and whose husbands are bottom quartile earners (q1), separation leads to an average increase of 23.8 percentage points in the risk of SA take-up. The level of the effect is substantially reduced when switching to upper quartiles of husbands' earnings (q2, q3 and q4). More specifically, the comparison in the reduction of the effect when switching from q1 to q2 versus when switching from q2 to q3 supports our expectation of non-linearity. The decline when switching to the next higher quartile is significantly stronger at q2 than at q1 ($p<.05$), where ex-husbands cannot make any or only very small transfer payments. The most notable result with regards to our hypotheses is that although husbands' earnings strongly reduce the high SA risks after separation found for women with little own economic resources, the effect remains significant even when husbands' earnings are set to q4 (2.8 percentage points, $p<.05$).

[Figure 2 about here]

The role of alimony criteria

Does the reduction in the effect of separation on women's SA take-up by husbands' earnings hold for women who are eligible to alimony? Figure 3 shows AMEs of separation on women's risk of SA take-up by husbands' earnings, but now distinguishes between women who – according to our criteria – are

[9] 0 represents the 17th percentile of the distribution and 30 percentage point difference the 90th percentile of the distribution of the counterfactual-observed difference in the wife's share of the couple's life-time earnings.

eligible for alimony and women who are not eligible for alimony. Furthermore, the estimations are now based on restricted samples of women whose earnings and wealth belong to the lowest quartile, narrowing the focus to women who are highly prone to poverty and SA take-up. Estimates for women who are eligible for alimony are light-shaded, whereas estimates for women who are ineligible for alimony are dark-shaded.

The left-hand panel displays the comparison based on the criterion of marriage-related inequality in life-time earnings. We find mixed evidence for the view that alimony eligibility – defined by marriage-related inequality – strengthens compliance with the principle of subsidiarity. For couples whose earnings diverged strongly due to marriage, the effect of separation already becomes statistically non-significant at q3 (3.2 percentage points), whereas it remains highly significant (16 percentage points, $p<.001$) for couples for whom marriage had no impact on the level of inequality. The difference in the point estimates at q3 between the two groups ($p<.05$), as well as the difference in the reduction of the effect between q2 and q3 between the two groups, are statistically significant ($p<.05$)[10]. However, when switching to the top quartile, the effect of separation becomes statistically insignificant for both groups. The principle of subsidiarity thus not only holds for women from couples with large marriage-related inequalities, but also for women who exit marriages that did not lead to a divergence in earnings histories between the spouses.

[Figure 3 about here]

The right panel displays the effect of separation for women without versus women with children under age 15. For the former, the risk of taking-up SA after separation is significantly stronger when husbands' earnings belong to the lower half of the distribution. This difference displays the impact children have on women's ability to make ends meet due to an increase in living expenditures[11]. For these women, husbands' earnings are crucial. Whereas the estimate of the effect of separation is 33 percentage points at q1, it is nearly zero at q4. Although the reduction of the effect between q2 and q3 does not significantly differ between women with and women without children ($p=.07$), comparisons of effect levels reveal a substantive influence of husbands' earnings. While the difference between the two groups is high and statistically significant when husbands' earnings are set at q1 or q2, the effects do not differ anymore at q3 and q4. Again, note that, even for women without children under age 15, the effect of separation is substantially reduced at higher levels of husbands' earnings.

[10] These significant tests must be interpreted with caution because they do not account for the uncertainty inherent to the measure of marriage-related earnings inequality that accrues from it being a prediction.

[11] Differences in earnings between women with and women without children are cancelled out.

Potential biases and robustness checks

Two potential sources of bias could be driving our results. The first is common-cause confounding bias (Elwert and Winship 2014). A likely (unobserved) common cause of both husbands' earnings and women's SA receipt is women's social origin. Women from more privileged social backgrounds tend to marry husbands with greater earning potential (Mäenpää and Jalovaara 2015). Concurrently, it seems plausible that these women receive higher financial support from their own parents in case of marital separation. The lower risk of SA take-up after separation by women whose ex-husbands belong to the upper tiers of the earnings distribution could thus simply reflect the greater financial support these women receive from their parents and not the greater economic transfers they receive from their ex-husbands. Because the data do not include direct measures of social origin, we can only control for such heterogeneity by adjusting the distributions of women's educational attainment between women with low-earning and women with high-earning husbands. Results based on this method of approximate control do not suggest that common-cause confounding bias is substantially driving the differences in the effects of separation on SA take-up between these groups.

The second set of concerns is related to our measure of household separation. First, and most importantly, due to the restriction of our sample to household separations between 2009 and 2015, we lose a large share of our initial sample of divorced couples (cf. Figure 1). This loss could potentially be non-random. Second, as our descriptive analyses show, our measure of marital separation is prone to measurement error (see footnote 7). If part of our sample of women is coded as separated despite still living with their husbands (and being protected from SA take-up by the husband's earnings), the negative association between husbands' earnings and women's post-separation SA take-up is overestimated (i.e. it is less negative). A third substantial concern is related to our choice of household separation instead of legal divorce as the event of study. After the residential separation, many couples might not yet have agreed on post-marriage household transfers. Hence, transfer arrangements may vary substantially within a few years after residential separation, when divorce-related decisions have been made. To check whether these three concerns distort our results, we repeated the analyses with the full sample of divorcees, but with observations restricted to the post-divorce period, when the separation process is terminated and when transfer payments have been settled. Comparisons of the *level* of SA receipt between quartiles of husbands' earnings (for women in the lowest quartile) do not suggest substantive revisions of our main interpretations: if husbands' earnings are set to q1, women have a substantial risk of receiving SA after divorce, while the risk of SA receipt is not statistically significantly greater than zero at q4 for most estimates[12].

[12] For details on and results of supplementary analyses see online supplement: [insert link for online supplement here].

Discussion and conclusions

In cases where divorced women's incomes run short of minimum reasonable needs, Western welfare states rely on the principle of subsidiarity and the regulations governing alimony to define the right to claim social benefits. When such women are considered entitled to alimony, subsidiarity defends the idea that social benefits should *only* be allowed if their former husbands cannot provide financial support. Increasing social and institutional support for clean breaks and divorced women's mounting reliance on government transfers suggests that the principle of subsidiarity might no longer be respected. In this study, we tested this hypothesis by making use of uniquely tailored administrative data on Swiss women's SA take-up and couple earnings after marital separation. We examined whether a) marital separation increases women's SA take-up, b) whether this effect of marital separation persists independently of their ex-husbands' earnings and c) whether patterns a) and c) could be observed for women who are eligible for alimony.

Our main results show that there are no major violations of the principle of subsidiarity. Increases in SA take-up related to marital separation are largely restricted to women with little economic resources of their own. However, for this group of women it makes a vast difference whether their husbands belong to the lowest or the highest earnings strata: women whose husbands are bottom-25% earners show drastic increases in SA take-up, while women with top-25% earners are nearly fully shielded from such uptakes. More specifically, the protective effect of husbands' earnings follows a staggered pattern. While husbands' earnings within the lower half of the distribution have minor impact, additional husband earnings add the most protection for women with middle-earning husbands. Further, the results suggest some influence of alimony eligibility on SA take-ups. The protective marginal effect of husbands' earnings is enhanced for women who exit couples for whom marriage caused greater inequality in earnings histories between husbands and wives. This is arguably related to a greater tendency of post-marital economic transfers among such couples. Similarly, differences in the effect of separation on SA take-up between women with low- versus high-earning ex-husbands are larger for women with children from the dissolving marriage than for women exiting childless unions. Children increase women's risk of SA take-up by lifting the income threshold to which women run short of minimum reasonable needs and are eligible for SA. Private transfers are thus much more significant in protecting them from SA take-up. Finally, it was also somewhat surprising to discover that women whose ex-spouses are top earners are nearly fully shielded from SA take-up even if they are *not entitled* to alimony according to our definitions. Alimony eligibility criteria are thus only marginally relevant for women's SA receipt who exit such couples. This is arguably due to low relative importance of the minimum transfer payments required to prevent such women from taking up SA (in relation to their ex-husbands' total incomes).

We wish to acknowledge the few limitations that inevitably affect the current study and indicate pathways for future research. First, even if we do not observe severe violations of subsidiarity, we cannot conclude that the institutional shifts in maintenance law towards clean breaks have *not* increased divorcees' recurrence to social benefits. To this end, future studies might employ cross-cohort longitudinal data that includes information on separation, private and public transfers, as well as divorcees' composition in terms of employment and couple earnings. Decomposition analyses could reveal whether increases in the probability that divorced women receive public transfers can be explained by genuine changes in private transfer policies, whether such changes were related to their reduced eligibility for alimony, or if there are other dimensions of change in divorcees' composition that would explain changes in SA take-up. For the time being we can only conclude that there is yet no current pervasive "problem" of clean breaks at public cost in Switzerland. Second, because our study lacked information on alimony orders, we cannot conclude whether the important levels of protection through husbands' earnings that we find for women who are not considered eligible for alimony are due to "overcompensation". Do institutions make divorced husbands protect their ex-wives from SA take-up even if they are ineligible for alimony? Our results do not exclude the possibility that the protective effect of husbands' earnings among these divorced couples comes from voluntary transfers. We are thus unable to reach conclusions on unjustified enforced economic interdependence between ex-spouses. Third, due to data non-availability in Swiss administrative registers, we were unable to link SA and earnings for unmarried couples, i.e. cohabiting partnerships with and without common children and never-cohabiting parents with common children. Given the current level of diffusion of such forms of relationship (Author DATE), we expect there to be ongoing differences between individuals who choose them and individuals who enter marriages. Furthermore, alimony regimes for married and unmarried couples have only recently started to converge. Hence, future research should describe how much protection from welfare dependency through ex-partners' economic resources differs between married and unmarried couples, how much of this difference can be related to different alimony regimes and how much is due to selection.

Despite such limitations, our study makes original contributions to the literature on the interaction between life course risks and the social stratification of poverty entry and related poverty dynamics (e.g. Leisering and Leibfried 2001). Our results reveal on the one hand a persisting amount of post-separation economic interdependence among ex-spouses, but, on the other hand, that the protective effect of alimony is socially stratified. Women who are married to low-earning husbands only marginally benefit from it – many of them become unable to make ends meet after separation and must recur to social benefits. We show that it is women who were in couples in the lowest economic strata, as indicated by their own *and* their partners' economic resources, who face the largest risk of receiving SA due to marital separation. This diverges from conclusions drawn from earlier studies

claiming that partnership dissolution is a critical life event that raises individuals' risk of poverty entry in a similar fashion across all social strata (Vandecasteele 2011; L. Leopold and Leopold 2016). Possible explanations for such differences are specificities of the Swiss context, our study's more poverty-relevant indicator of social class (i.e. wives' and husbands' earnings instead of occupation or educational attainment), or the strict measure of poverty (i.e. social assistance rather than the usual income-based at-risk-of-poverty measures) we used.

Against this background, our results do not suggest that the main or best road towards reducing divorced women's SA dependency is an increase in private transfers. The women facing the highest risk are also the women whose husbands have the fewest resources. Hence, there is not "much more to get" through alimony, and "clean breaks" cannot be considered a main cause of divorce-related welfare expenditures. Rather, given the significant gender differences in the risk of taking-up social assistance after divorce, the results speak to policies aimed at reducing the earnings that women forgo when they enter marriage and parenthood. This can be achieved by improving the availability and accessibility of high-quality childcare and by providing opportunities for a more equal share of parental responsibilities through adequate parental and paternal leave policies. For such measures to be implemented, a shift towards a more egalitarian conception of marriage and the role of men and women within it needs to direct social policies on family affairs, which is currently still strongly founded on the main-breadwinner main-career template. While such a shift is already on its way at the level of the Swiss population and its attitudes (Author DATE), the institutional update has yet to occur.

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Figure 1: Data linkage and sample construction.

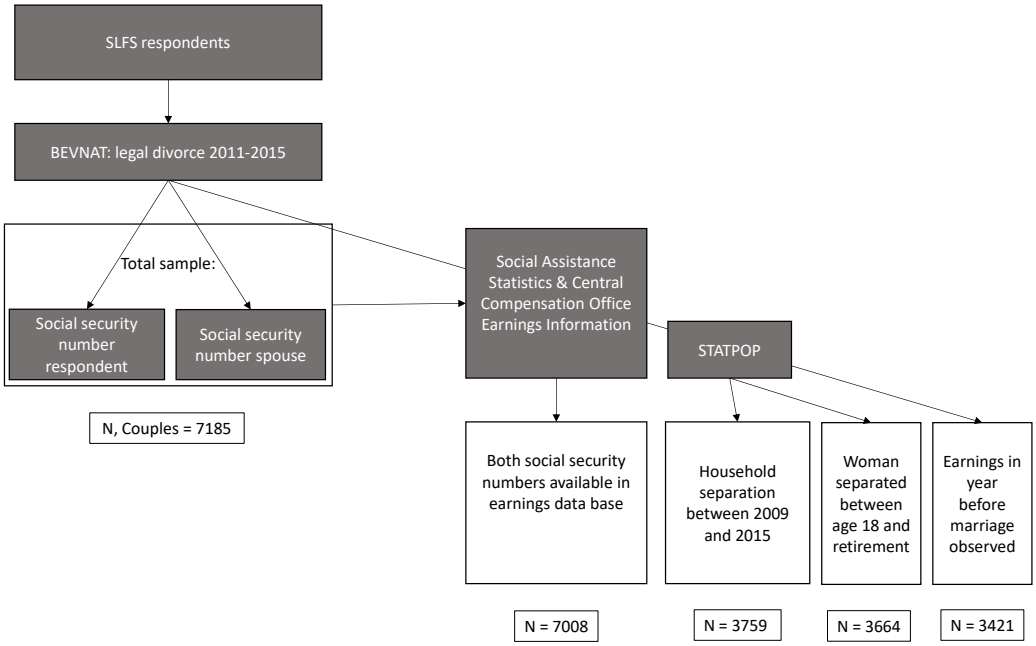


Table 1: Sample description around separation and time-constant characteristics

	Wives' economic situation around separation	***Calendar year before separation***		***Calendar year after separation***	
Household structure[1]	No cohabiting partner	15		80	
	Unmarried cohabiting partner	1		5	
	Married cohabiting partner	84		15	
Economic activity	Share with non-zero earnings	80		82	
	Weekly hours if employed[1]	27	*(12)*	31	*(12)*
	Annual earnings if non-zero, CHF	45 108	*(34868)*	50 049	*(35184)*
Approximation of wealth	Cumulated life-time earnings, CHF[2]	1 041 029	*(763886)*	1 088 811	*(773474)*
Social assistance	At least one month of transfer payments	2		9	
	Husbands' economic situation around separation				
Economic activity	Share with non-zero earnings	87		87	
	Weekly hours if employed[1]	42	*(8)*	43	*(10)*
	Annual earnings if non-zero, CHF, 1st quartile	33 602	*(17515)*	31 180	*(31180)*
	2st quartile	69 905	*(6139)*	71 735	*(17736)*
	3rd quartile	93 093	*(8204)*	97 118	*(7160)*
	4th quartile	161 181	*(78668)*	167 797	*(8451)*
Social assistance	At least one month of transfer payments	2		4	
	Compensation criteria				
Marriage-related economic gains and losses	Wives' %-share of couple's total earnings, observed			38	*(31)*
	Counterfactual - observed share[3]			8	*(36)*
Child care status	At least one child below age 15			45	
	Among wives with child: share cohabiting with child[1]	99		84	
	Among husbands with child: share cohabiting with child[1]	84		20	
	Other constant characteristics				
Year of separation	Calendar years		2 011	*(2)*	
Year of divorce			2 013	*(1)*	
		Wives		***Husbands***	
Age at marriage	years	29	*(7)*	32	*(8)*
Age at separation	years	39	*(8)*	42	*(9)*
Citizenship	Share non-swiss	24		23	
Educational attainment[1]	Less than vocational degree	25		19	
	Vocational degree	43		39	
	General education	13		13	
	Higher vocational degree	6		13	
	Tertiary degree	13		16	

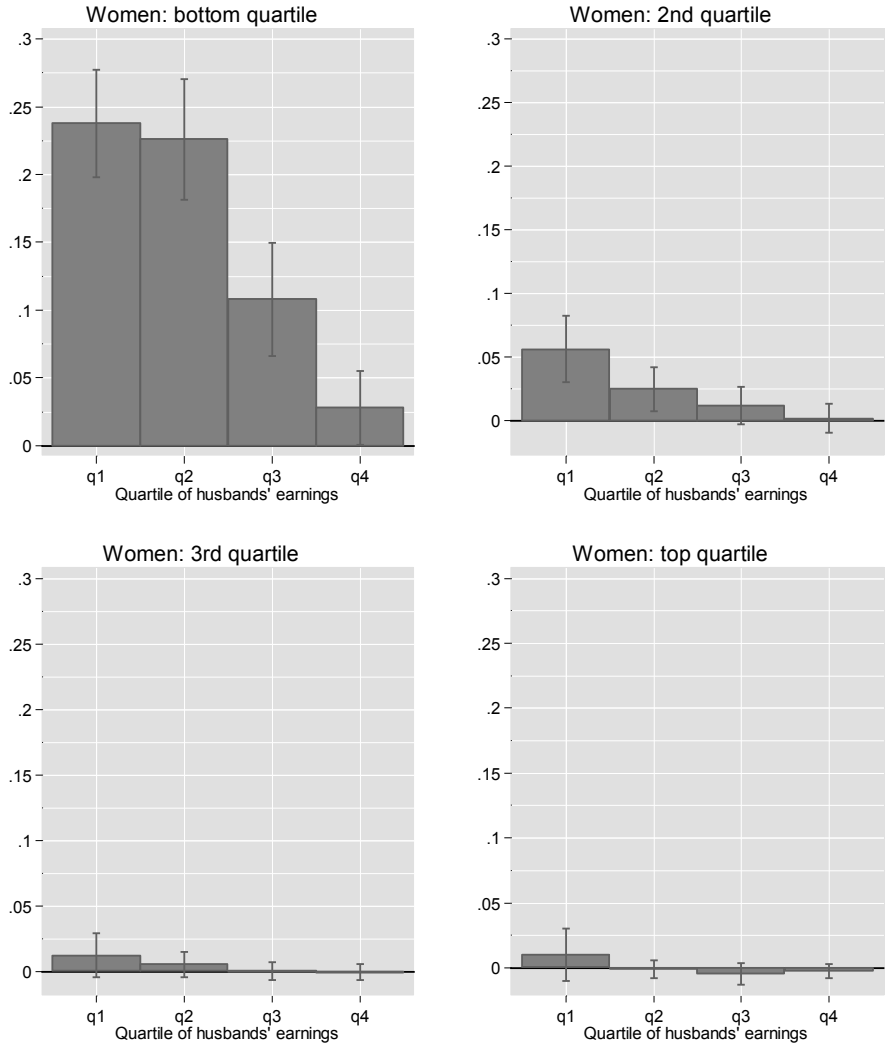
Notes: Reported are mean values (standard deviations in brackets) or percentage shares, both calculated using survey weights. General sample restrictions: separation dates between 2009 and 2015, divorce dates between 2011 and 2015, wives' age at separation between 18 and 63, at least one year of marriage. N=3421.

[1]: Only for subsamples with survey information on husbands' education (2524) or wives' education (2652), wives' partnership status before separation (182), wives' partnership status after separation (192), wives' (153) and husbands' (143) activity levels before separation and wives' (158) and husband's (158) activity levels after separation, as well as the share of wives (105) and husbands (80) who cohabit with a child before separation and the share of wives (106) and husbands (88) who cohabit with a child after separation.

[2]: Cumulated sum of annual sums of wives' earnings and, from the year of marriage to the year before separation, half of husbands' earnings.

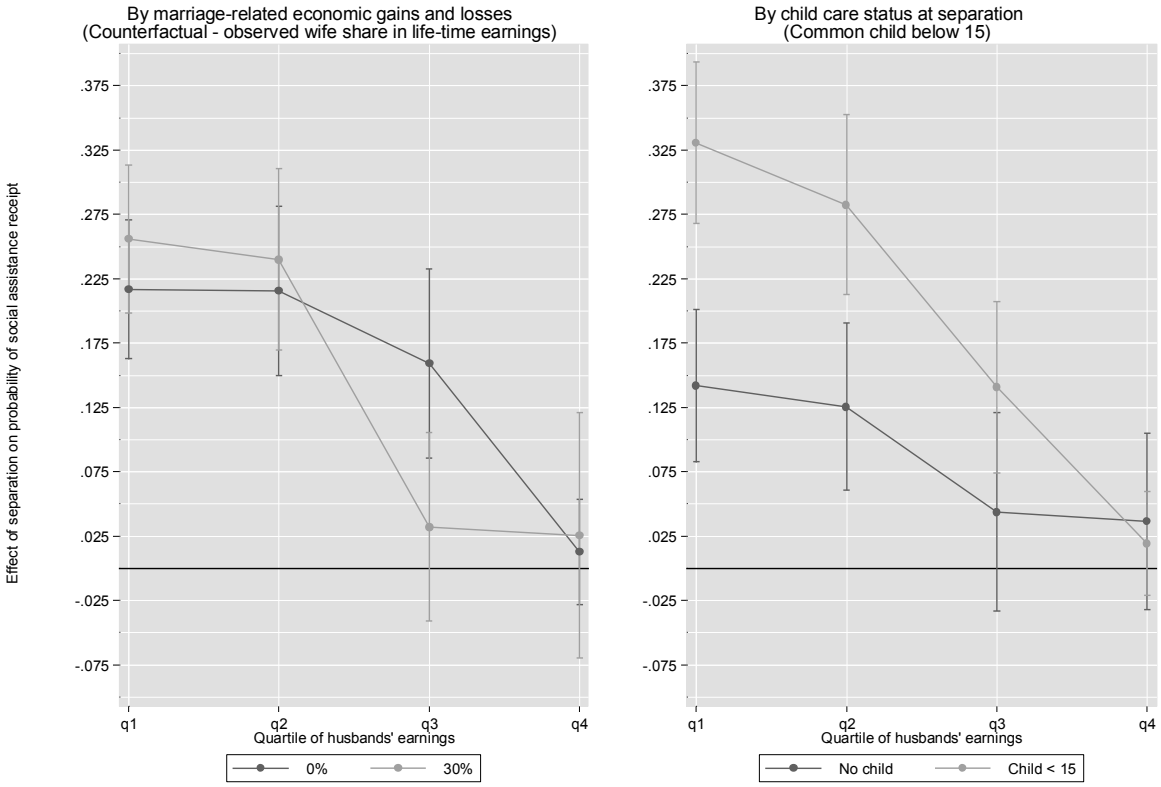
[3]: Counterfactual wives' share = predictions from random effects model on all couples with earnings information who separated between 2009 and 2014 (7008) if marriage and birth of child are set to lie four years ahead.

Figure 2: Average marginal effects of marital separations (and 95% confidence intervals) on women's social assistance receipt by husbands' earnings and women's economic resources (quartiles of earnings and wealth).



Notes: Based on random effects hierarchical linear probability models with annual observations nested in women under usage of robust standard errors. Predictions at observed distributions of age of woman, age of man, alimony criteria (counterfactual - observed wife share in life-time earnings, common child below 15 at separation) and observation year. N person-years = 33,988. Graph style adapted using grstyle (Jann 2017).

Figure 3: Average marginal effects of marital separations (and 95% confidence intervals) on women's social assistance receipt by husbands' earnings.



Notes: Women with earnings and approximated wealth in the first quartile of the annual gender-specific distribution. Based on random effects hierarchical linear probability models with annual observations nested in women under usage of robust standard errors. Predictions at observed distributions of age of woman, age of man, non-interacted alimony criteria (e.g., left-hand panel: presence of child under age 15) and observation year. N person-years = 8'326. Graph style adapted using grstyle (Jann 2017).