Does waiting pay off? –

The effect of partnership duration prior to household formation on union stability

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Abstract

This article investigates how the length of the non-residential partnership episode - known as LAT (living apart together) - relates to separation behavior. There is a large body of literature that studies the role of the cohabitation episode prior to marriage in union stability. However, little research exists that examines how the LAT period before moving together influences separation risks. This is surprising because this study finds that 90 percent of the unions were preceded by some LAT period. On one hand, one could expect that a short LAT period has a negative influence on union stability, because the information on the partner is low and mismatches are possible. However, also a positive influence is conceivable: a fast transition to household transition can show the couple's commitment to the union. Data for the empirical analyses comes from the German Family Panel. It includes 8,230 residential non-marital and marital unions of 2,899 men and 3,866 women born 1971 to 1973 and 1981 to 1983. Multilevel piecewise constant survival models are estimated to assess the influence of the length of the LAT (living apart together) period on stability. The results reveal that union stability is positively related to the LAT length. However, also unions without a prior LAT period encounter low separation rates. The LAT episode has a stronger impact on cohabitations than on marriages. The findings suggest that the LAT period is a significant phase in the partnership which enables couples to acquire information on the quality of the partnership.

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Introduction

During the past decades, in many western countries, new forms of living arrangements within partnerships have emerged. Partnerships can be defined as emotional relationships with the partners being married or not and the partners residing together or not. The term "union" usually refers only to couples living together – in cohabitation or in marriage. Couples living in two households represent a distinct partnership type referred to as "LAT" – living apart together (Duncan & Phillips 2011; Levin & Trost 1999). The proportion of partners living in non-marital union has increased in recent periods and cohabitation has replaced marriage as a choice of first union (Sobotka & Toulemon 2008). Besides cohabitation, also non-residential partnerships have become widespread at least in Western Europe (Duncan & Phillips 2011; Régnier-Loilier et al. 2009). This is interpreted by some scholars as an expression of individualization, which may imply less commitment towards others (Lesthaeghe & Surkyn 1988; Poortman & Liefbroer 2010). Delayed union formation, the increase in non-traditional living arrangements and rising rates of separation have been described as parts of a societal change denoted as the Second Demographic Transition (Lesthaeghe & Meekers 1986; Lesthaeghe 2010; van de Kaa 1987). Extended periods of LAT may therefore raise the concern that partnership life is becoming more fragile.

However, LAT often functions as a temporary arrangement preceding household formation (Ermisch & Siedler 2009): couples frequently have separate homes at the start of the partnership and there is a considerable flow from non-residential partnerships to cohabitation and marriage (Castro-Martin et al. 2008; Ermisch & Siedler 2009; Régnier-Loilier et al. 2009). How well the partners knew each other at the time of household formation and how much time the partners needed to decide to move together may have a critical impact on the stability of the union. According to the theoretical considerations of Becker et al. (1977) and Oppenheimer (1988), a stable relationship is more likely if the partners have solid information on their personal characteristics. A short LAT episode should be related to a high degree of uncertainty about the partner's attributes at the time the household is formed, which might decrease the prospects of union success. An alternative argumentation, however, suggests a negative relationship between non-residential partnership length and subsequent union stability (Thibaut & Kelley 1958). The process of developing intimate

relationships involves that the partners are motivated to invest in the partnership (Brown 2003). The hesitation to invest may indicate that the partners anticipate a high risk of disruption.

This study follows up on the view of the LAT partnership as a stepping stone to a more committed residential partnership and focuses on the separation behavior of couples which had just overcome the non-residential period. The article concentrates on the risk of separation among non-marital and marital residential unions. Married and cohabiting couples have a lot in common: the couples live in the same dwelling unit and they have evolved similar daily routines (Levin 2004; Jalovaara 2013; Rindfuss & VandenHeuvel 1990). There is empirical evidence that several determinants of union dissolution have a similar impact in both union forms (Jalovaara 2013). Residential unions profit from pooling their resources and from the economies of scale (Oppenheimer 1988). These advantages get lost, if the partners decide to dissolve the partnership (Rhoades et al. 2012). To avoid the high costs of separation, it is essential to form a residential union with high stability prospects. There is a large body of literature that focuses on premarital cohabitation as a stepping stone to marriage and studies its role in marital stability (e.g. Bracher et a. 1993; Jalovaara 2013, Thomson & Colella 1992, Lillard et al. 1995, Berrington & Diamond 1999). However, previous studies did rarely account for the non-residential partnership episode prior to household formation, because appropriate data was not widely available. Most common surveys are not suitable to address this research question, because they have not gathered partnership information that includes the non-residential partnership period. In this paper, the German Family Panel is used, which offers detailed partnership histories, including starting and ending dates of LAT episodes. German non-residential partnerships do not appear to be exceptional with regard to their prevalence and duration, as a British-German comparison revealed (Ermisch & Siedler 2009). Thus, although this study refers to a single country, the results may be transferable to other settings. Retrospective partnership histories of German women and men born between 1971 and 1973 or between 1981 and 1983 are used. This means that residential unions in early adult ages are considered in the first place, while little can be said about partnership dynamics in later stages of the life course. The analytical sample amounts to 8,230 partnerships.

This paper contributes to narrow the research gap on the non-residential partnership episode. It is the first study that seeks to explore how the LAT period influence the risk of separation among residential marital *and* non-marital partnerships.

Background

Theoretical considerations and hypotheses

In the economic theory of the family (Becker 1991; Becker et al. 1977), household formation is essential because it enables the production of commodities. Although the focus of this theory is on marriage, its findings can be well applied to unions, since household and marriage formation coincide in their view. Oppenheimer's theory of marriage timing (Oppenheimer 1988) as well concentrates on marriage and considers cohabitation as a potential pre-step to marriage. According to these theoretical concepts, information on the partner's compatibility is the key to union stability. Participants in the partner market have limited information about the utility they can expect with potential mates, because they have only limited information about their traits (e.g. honesty, reliability, personality traits). People date and search to improve the information about the partner and then estimate the traits of prospects. A good match is the result of a selection process and of adaptive socialization during the courtship process (Oppenheimer 1988). Due to the incomplete information about the partner at the start of the partnership, suboptimal matches are possible, which are related to high disruption risks. This implies that right after partnership formation, the couple is cautious to invest due to uncertainty. In consequence, couples which dedicate time to collect information about the potential domestic partner should have much higher prospects of union success than couples which hasten to move together. Those partners who discover that they do not match well are less likely to proceed to form a household and presumably end the partnership (Lillard et al. 1995). Thus, the high separation rates lead to a strong weeding-out of non-compatible couples. With increasing partnership duration, the partners remaining living apart together not only get to know each other better, but they also become more and more positively selected. This should enhance the union stability after household formation. Taken together, the

following main hypothesis can be derived: The longer prior partnership duration, the more stable is the union after household formation (Hypothesis 1a).

According to exchange theory (Thibaut & Kelley 1959: 12ff), a couple aims to broaden exchange and deepen investments. Relationship stability is determined by the intensity of successful interactions. Interactions are evaluated according to their rewards and costs and lead to the decision to further invest through more interactions or to end the interaction relationship. The rewards of the interaction are compared with potential rewards from available alternative partners. Partners that rapidly make investments should be strongly convinced that their partnership will last, while partners that hesitate to invest might have doubts whether the partnership will last and keep considering alternative partners (Brown 2003). Household formation is an investment that seems to be practically motivated by the transaction costs of interactions, which increase if interactions are extended, for example through more time spent together with leisure activities, cooking, sleeping etc. If the interaction density exceeds a critical mass, a joint household has strong interaction and specialization benefits, because the couple shares time, money and housework tasks. However, a certain loss of freedom and independency contributes to the costs of household formation (Rhoades et al. 2010, 2012). The non-residential partnership period can be regarded as a step in the courtship process. The longer the partnership persisted without moving together, the greater might be the perceived union instability, because of unrealized intentions to coreside. Among partners with long partnership duration prior to household formation, the costs of a joint household might outbalanced any rewards for a longer time compared to partners who quickly moved together. This might be the case because the costs of household formation were especially high. Potentially, this may be due to marked individualistic attitudes or practical reasons such as difficulties to find a job position for both partners at the same place (Carmichael 1995). On the other hand, it may be that the rewards of household formation are lower, for example, because the couple's intersection of daily life routines is low. These factors may decrease the benefits of a joint household also after moving together, and consequently, also union stability. A long partnership duration before household formation can further suggest a lower growth of interaction density. However, interaction density seems to be essential for union stability. If interaction density continues to be slow-growing after household formation among couples

who took a long time to move together, it is likely that their union stability is lower compared to couples who started to coreside shortly after the partnership was formed. In consequence, the competing research hypothesis is that the length of the partnership episode before the household was formed negatively affects union stability (Hypothesis 1b).

Up to now the potential effects of the LAT period on the stability of residential unions were considered, without differentiating by marital status. A couple can live together as a marital or non-marital union. The LAT period prior household formation might influence union stability differently, depending on whether the couple is married: Married couples should be more committed to the partnership, because they have entered into a formal arrangement that increases the rewards they can expect from the partnership and the costs of separation (Blossfeld et al. 1999; Le Bourdais et al. 2000; Perelli-Harris & Sánchez Gassen 2012). Because of this commitment, they may be less willing than non-married couples to end an unsatisfactory relationship and more willing to contribute to make a relationship satisfactory. The length of the LAT episode might influence the union stability positively (hypothesis 1a) or negatively (hypothesis 1b). In any case, it should have a stronger impact on the stability of non-marital unions, because they are more likely to answer to partnership difficulties by quitting the union. The influence of the LAT length might also depend on the mode of entry into union life (Klijzing 1992). Partners who get married before moving together (= direct marriages) often possess very traditional attitudes and present a selected subgroup (Köppen 2011: 235; Liebroer & Dourleijn 2006). According to Bennett et al. (1988) and Lillard et al. (1995), couples who start their union being married are more committed to the institution of marriage than are those who start their union as non-marital cohabitation and marry at some later point. Therefore, I expect that the duration of the LAT period should have a weaker effect on the stability of direct marriages, while the effect should be stronger among marriages preceded by cohabitation and strongest among non-marital cohabitations (Hypothesis 2).

Previous empirical findings

There is still very limited knowledge about how the partnership episode between dating and living together influences union stability. Few studies on marital stability accounted for the LAT period as a determinant of

marital stability. They have been able to show that the length of the relationship prior to household formation reduces the risk of a marital break-up (Brüderl et al. 1999; Brüderl & Kalter 2001; Engelhardt 2002; Murphy 1985; Niephaus 1999). Unfortunately, they did not analyze whether this effect differed between direct marriages and marriages preceded by cohabitation.

Most studies however did not consider the LAT period as an integral part of partnership dynamics relevant for the analysis of union stability. Probably, episodes of living apart together were of minor importance during the past decades: couples only did not live together as a reaction to external constraints. However, LAT is now increasingly recognized and accepted as a way of being a couple. Partners not only live apart because they are forced to do so by circumstances, but because they choose not to live together, even though it would be possible for them to do so (Duncan & Phillips 2011). Although a common stage on the way to cohabitation and marriage, non-residential partnership episodes were often ignored in social surveys (Castro-Martin et al. 2008), and in consequence, appropriate data (in terms of large representative samples with detailed date information) was not available. Most surveys only inform about the household formation date, which prior research has taken as the partnership start point (Manning 2001; Raley 2001). However, it is not that simple: the time spent in a partnership is not to be equated with time spent in a residential non-marital or marital union (Carmichael 1995).

Related literature on the effect of a cohabitation taking place before marriage helps to shed some more light on our research purpose. Similar to LAT, premarital cohabitation is a pre-step to a more committed partnership arrangement. Possibly, the effects of the lengths of these pre-steps on separation risks are alike. However, the premarital cohabitation episode differs from the LAT episode through the fact that it is often experienced only by a section of the couples, while the LAT episode should be a rather standard stage in the partnership life course. Referring to the decision to marry directly or after cohabitation, a large number of studies have analyzed *whether* premarital cohabitation affected the risk of marital dissolution (e.g. Brien et al. 2006; Brüderl et al. 1997; Kulu & Boyle 2009; Lillard et al. 1995; Svarer 2004). Comparatively few studies have considered how the length of premarital cohabitation relates to divorce risks. Several studies showed

that the risk of divorce decreases with the time the couple cohabited prior to marriage, given the cohabitation period did not exceed two years (Berrington & Diamond 1999; Bracher et al. 1993; Hoem 1989; Jalovaara 2013; Klijzing 1992; Murphy 1985). Couples who cohabited for a longer period faced lower marital stability. Other studies even found the risk of marital breakdown to be positively related to cohabitation length (Teachman & Polonko 1992; Thomson & Colella 1992). While the positive effect of cohabitation duration on marriage dissolution is explained by the lower commitment of long-term cohabiting couples, the negative effect of the cohabitation duration on separation is commonly attributed to the testing character of this partnership 'pre-step'.

Some studies have aimed to picture LAT partnerships in Germany and described the transition from LAT to coresidence or separation.[2] A study on German marriage cohorts formed between 1999 and 2005 showed that it took couples on average 2.4 years to move together (50 percent formed a household within the first year of the partnership) (Schneider & Rüger 2008). Survival estimates based on GSOEP data revealed that 80 percent of the non-residential partnership episodes lasted more than one year, but only 13 percent were intact after 10 years (Ermisch & Siedler 2009). Around 55 percent of these German LAT partnerships were transformed to residential unions, while 45 percent dissolved before household formation (Ermisch & Siedler 2009). Non-residential partnerships mainly concern young people: the earlier the partnership was formed in the life-course of the couple, the longer the non-residential period lasted (Schneider & Rüger 2008). Around the age of 25 the LAT partnership is often transformed into a residential union (Asendorpf 2008; Ermisch & Siedler 2009; Régnier-Loillier et al. 2009).

[2] These studies referred to data which included information on the LAT episode, but they had the drawback that date information was collected on a yearly base, that they did not account for partner changes (e.g. Ermisch & Siedler 2009), or that they only considered the partnership histories of marital couples (Schneider & Rüger 2008).

Methodology

Sample

The data were drawn from the German Family Panel (pairfam Release 3.1), a sample of 13,891 German adults born in 1971-1973, 1981-1983 and 1991-1993, including an oversample of eastern German respondents (DemoDiff 2.0) (pairfam: Huinink et al. 2010, Nauck et al. 2012; DemoDiff: Kreyenfeld et al. 2011, 2013a, 2013b).[3] A design weight was used in the descriptive analyses that accounted for the under-/overrepresentation of the birth cohorts in the gross sample and the oversampling of eastern Germans.[4] Personal standardized interviews were conducted annually from 2008 to 2012. Within the first interview, retrospective partnership histories on monthly basis were collected. The partnership information was updated with each subsequent wave. I made use of a ready-to use event history data set that incorporates all relevant partnership and fertility information (Schnor & Bastin, forthcoming). The analyses included the retrospective partnership histories of male and female respondents. A drawback of the data was that information on the individual characteristics of both partners was not available in case the partnership was dissolved prior to the first interview. This implies that only individual information for one of the partners was available, but no couple data. Thus, I decided to estimate separated analyses for male and female respondents.[5] Some variables should affect the separation risks of men and women in a different way, such as employment status (Jalovaara 2013). Beyond that, some variables might differ in their meaning: with regard to the age one has to consider that men are on average older than women at the time of partnership formation. Being age 23 when the household was formed might be rather standard among women, while it might signify an early event in the private life course of men.

[3] The German Family Panel is coordinated by Josef Brüderl, Johannes Huinink, Bernhard Nauck and Sabine Walper. It is funded as a long-term project by the German Research Foundation (DFG).

[4] In detail, we used the following weights (Kreyenfeld et al. 2013): birth cohorts 1971-73, eastern Germany (including East Berlin): 0.395; birth cohorts 1981-83, eastern Germany (including east Berlin): 0.414; birth cohorts 1971-73, western Germany: 1.098; birth cohorts 1981-83, western Germany: 0.961.

5 In a joint model I would have to interact gender with all other covariates to exclude that the influence on separation differs between men and women.

The analysis was limited to residential partnership episodes of women and men born in 1971-1973 or 1981-1983. Persons of the youngest cohort (born 1991-1993) were not considered because the largest fraction (95 percent) had not experienced household formation until the latest date of interview. Partnerships formed before the 14th birthday of the respondent were excluded because the pairfam questionnaire only asked for partnership episodes starting after that date. I also excluded partnerships which started after household formation, partnerships with cohabitation breaks, partnerships in which residential episodes with different partners overlapped, partnerships which ended with the partner's death, as well as partnerships for which the partnership duration prior to household formation exceeded ten years. Unions in which the joint household was dissolved while the partnership remained stable were dropped, because this rather related to job mobility than to union stability. Further, partnerships were omitted if information on the partnership or fertility biography or the country of birth was missing. Same-sex residential partnerships were excluded as well, because there were only few cases in the sample.[6] The remaining sample amounts to 6,536 first residential unions and 1,694 higher order residential unions of 2,899 men and 3,866 women.

Method and Operationalization

I aimed to model the union stability of residential unions with special regard to the impact of the partnership duration before the partners moved together. Therefore, the period observed and the event of interest had to be defined. The data offers information on the date of household dissolution (= union dissolution) as well as on the date of partnership dissolution (= separation), as the partnership history beyond residential union episodes was collected. Household dissolution was defined as the dependent variable, because the study focused on residential unions and thus, the main interest lay in the length of the residential episode. In most cases, household and partnership dissolution were anyway close together in time, and occurred within a time frame of one year, as can be seen from Figure 4 (Appendix). A multilevel piecewise constant survival model serves to estimate the relative risks of household dissolution (Gutierrez 2002). The observation time started with household formation. The observation was censored with the time of the latest interview and eight years after household formation to account for the young age structure of the respondents. The household episode

[6] There were 77 same-sex unions in the sample, which presented less than one percent of the analytical sample.

was splitted into yearly intervals within the first three years and additionally after five years, resulting in five baseline categories (0-1 years, 1-2 years, 2-3 years, 3-5 years, 5-8 years). There was data on the household dissolution of one or more unions per respondent. This implied a multilevel structure of the data: To account for within-respondent heterogeneity, a random intercept for each respondent was added to the model.

The partnership duration prior to household formation was considered as an independent time-constant variable. The information on the partnership formation date was based on self-reported partnership histories. One has to consider that in contrast to the marriage date, the partnership formation date is often less clear definable (Duncan & Phillips 2011; Régnier-Loillier et al. 2009). Partnership formation may be perceived as a period rather than a date, and its definition can be related to the first kiss, the first night spent together, the first love declaration or the introduction of the partner to friends/parents. The questionnaire did not specify any criteria and led the definition up to the respondent. Information was gathered on episodes of partnerships, residential unions and marriages. With regard to the retrospectivity of the partnership information one should keep in mind that the information might have been subject to recall problems (Reiner 2005). The respondents might not remember the concrete dates correctly (Dex 1995; Reimer 2005: 35) or mixed dates up. In the case of unions without prior LAT episode for example, the household formation date might be remembered as the partnership start date, although the partnership had started some time before. Direct marriages without prior non-residential episodes present a special case.[7] They might indicate a recall problem, because it seems unlikely that partnership, cohabitation and marriage formation were commenced simultaneously. However, the definition of the partnership start was upon the respondent, and there might have been reasons to define the partnership start with marriage date. Difficulties of recalling past events and periods increase with age (Reimer: 40). In this study, the young age structure of the respondents minimizes the risk of recall bias. Research states that men recall retrospective information differently from women. Previous research indicated that the quality of partnership histories was better for women than for men (Cherlin & McCarthy 1984; Reimer 2005: 40, 79). This gives another reason to estimate the effect of partnership duration on stability separately for male and female respondents.

[7] Among all direct marriages, only 9 percent had identical dates of partnership, household and marriage formation.

Figure 1 informs on how the LAT length was distributed in the data. About 10 percent of the partnerships started directly with household formation, 50 percent of the partnerships formed a household within their first partnership year. Another 20 percent did so within the second union year. The vast majority of 90 percent moved together within the first five partnership years, while only 10 percent experienced partnership durations of five to 10 years prior to household formation. Persons of the younger birth cohorts (1981-1983) did not have different lengths of partnership duration compared to those of the older birth cohorts (1971-1973). Likewise, the distribution of the variable was identical for male and female respondents.

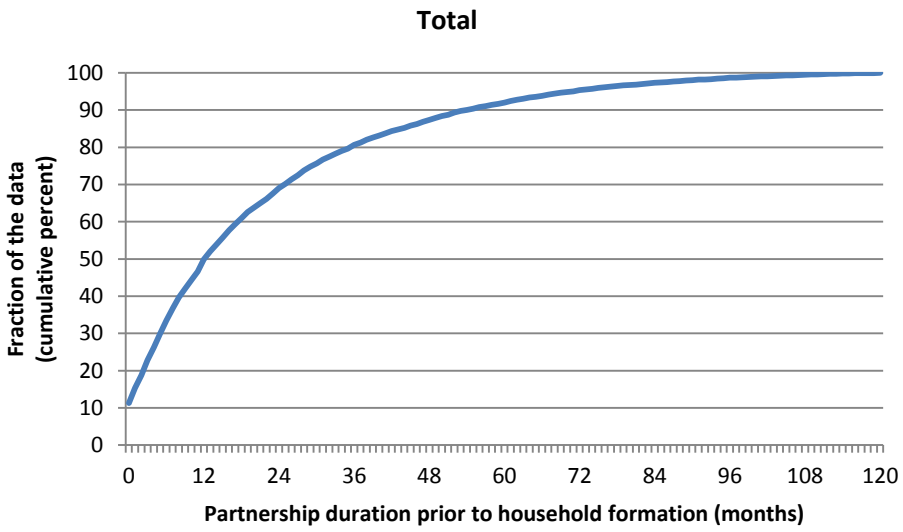

Figure 1: Cumulative percentage of partnership length prior to household formation. Weighted sample.

Previous studies which considered the LAT length included it as a linear measure with yearly intervals in the respective equations (Brüderl et al. 1999; Brüderl & Kalter 2001; Engelhardt 2002; Niephaus 1999). As half of the partnerships are transformed in residential unions within the first partnership year, the categorization in yearly intervals might be too rough. I therefore decided against any metrical (be it linear, squared or logarithmic) definition. Instead, I constructed a categorical variable in which partnership duration prior to household formation was grouped in terciles - according to the distribution in the data. The resulting final categories are "1st tercile: 1-9 months", "2nd tercile: 10-25 months" and "3rd tercile: 26-120 months". Those who stated to directly having started as residential unions were grouped to a separate category. An advantage

of this approach was that the risks of household dissolution of partnerships with average partnership duration (≈ 2nd tercile) could be compared to those of partners which moved together relatively early (1st tercile) or late (3rd tercile).

Several control covariates were considered in the multivariate regression models. There was information on the marital status of the partnership. In case the marriage occurred prior to household formation, a time-constant category stated that it is a "direct marriage"; two further time-varying categories accounted for the time being non-married and the time being married after some period of non-marital cohabitation ("converted marriage").

In previous studies, children were found to stabilize partnerships, especially when the children were young (Guzzo 2009; Jalovaara 2013; Wu 1995). A closer look on the children's characteristics however revealed that children from previous partners as well as children born before household formation in fact increased the risk of partnership break-up (Liu 2002; Teachman et al. 1991). The parental status of the regarded union was defined as being childless (= no common offspring) or having common children of a certain age. There might have been a common child present (or underway) at the time of household formation, which was labeled "pre-union child". Stepchildren were defined as biological offsprings of the respondent or his partner dating back to previous partners, who lived in the household at the time of household formation.

Several covariates informed about the partnership history of the respondent. This was the age at which a household was formed, the order of the residential union and the number of (previous) partners (including the partner with whom the household was formed). The age at entry into a cohabiting union has been shown to be negatively related to disruption risks, (Berrington & Diamond 1999, Jalovaara 2013, White 1990). This refers to the lower maturity of younger persons and the greater availability of alternative partners at younger ages (Becker et al. 1977). First residential unions might have a higher stability than higher order unions, because the latter might be formed by individuals who were more prone to separation. In previous studies, the cohabitation order was shown to have no effect on stability, while higher order marriages were found to be less stable than first marriages (Berrington & Diamond 1999; Manlove et al. 2012; Poortman and Lyngstad

2007; Steele et al. 2006). The number of previous partners can work as an indicator of extensive partner search (Becker et al. 1977). Having had prior partnerships may indicate that the current partner was tested and found suitable as residential partner (in contrast to prior candidates), which may be related to higher union stability. On the other hand, persons with partnership experience may face lower union stability, because they are more separation-prone than first-time partnered persons. There is also information on whether the respondent lived with his or her parents at the time of partnership formation. Living in the parent's house might suggest that these persons are less mature, which is associated with higher risks of union break-up (Becker et al. 1977).

The models further included personal information on the educational, religious and family background and on economic activity. The levels of school education were categorized into three categories: low (no certificate or lower secondary education), middle (secondary education) and high (high school diploma). Missing information on school education was ascribed to a separate category. Empirical studies have shown that higher educated individuals face better partnership prospects than lower educated persons (Brüderl et al. 1997; Jalovaara 2013; Berrington & Diamond 1999). Education can increase household stability, because highly educated persons are expected to have made better partner choices and having less communication problems (Amato 1996). A further variable informed about whether the male or female respondent was enrolled in education (including tertiary education) at the time the partnership was formed. This can be related a lower union stability, because the person is not yet settled and may be less mature and forward looking with regard to the partner choice (Becker et al. 1977).

The church membership gives information on the religious background. Respondents who were neither Catholic nor Protestant, but belonged to another religious community were grouped in one category. A number of papers showed that Catholics marry later and have lower risks of union dissolution than Non-Catholics (Hoem & Hoem 1992; Lehrer 2004; Lillard et al. 1995; Oláh 2001; Teachman 2002). The costs of union dissolution are particularly high in Catholicism, because it prohibits separation after entry into marriage.

The higher costs of making a mistake for Catholics implies a longer intensive search and suggests that they take more time to form a household (Lehrer 2004).

Persons who experienced parental separation are more likely to dissolve their unions (Lyngstad & Jalovaara 2010). There was information on whether the respondent lived together with both biological parents until his 18th birthday, which was taken as an indicator on whether a parental separation occurred during the respondent's childhood or adolescence. A time-varying variable informed about the current employment status. Based on the self-assessed employment history, I distinguished between employed and non-employed episodes. The information on the residence with both biological parents and on the employment status was not available for all respondents, because it was gathered in the second and third wave of the German family panel, respectively. A separate category indicated missing information, which applied if the respondent did not reply or did not participate in the respective waves.

Results

Descriptive results

In Figure 2, Kaplan-Meier survival estimates informs about the probability of union survival within the period observed. Unions formed within the first partnership months (1st tercile) had the lowest survival probabilities: only around 63 percent of the unions were intact eight years after household formation. In contrast, residential unions with a prior non-residential period of 10 to 25 months (2nd tercile) had somewhat higher survival probabilities, 67 percent did not experience household dissolution. A similar proportion (68 percent) was still in union among those who directly formed a household. Of those partners who spent a rather long period living apart before they moved together (3rd tercile) the probability of union survival was highest: 76 percent were still living together at the end of the observation period.

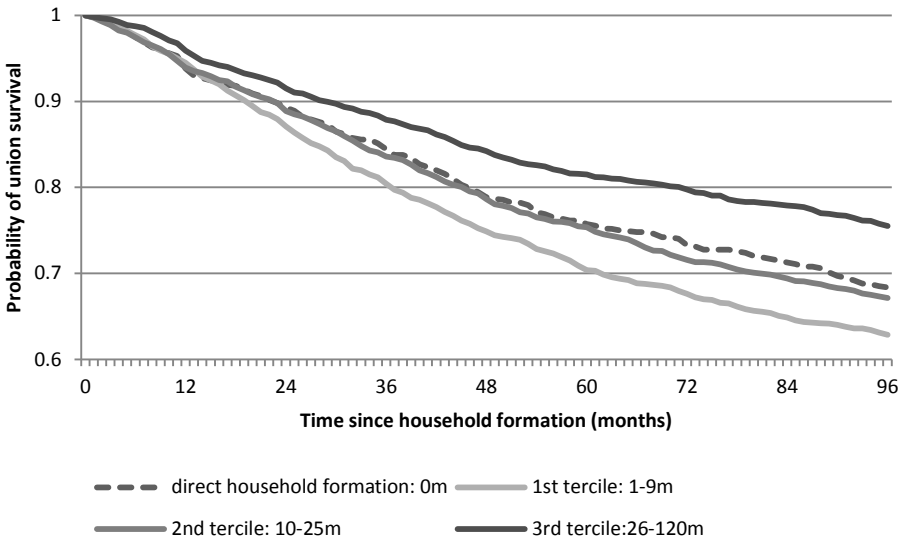

Figure 2: Kaplan-Meier survival estimates. Household stability by partnership duration prior to household formation (in terciles).

Source: German family panel (pairfam/DemoDiff), Release 3.0 (2011/2012)

Note: Weighted sample

Sample composition

The sample composition by gender and duration of the LAT episode is shown in Table 1.[8] It reveals whether persons with a short LAT period prior to household formation differed in their characteristics from persons who waited substantial time until they moved together with their partner.

Unions with different prior LAT length spent similar time being non-married after the household was formed. Direct marriages were most prevalent among unions who had no prior partnership duration. During the observation period, half the time is spent being childless. Unions with different prior partnership duration did not substantially differ in the time spent with children in different ages. Stepchildren were more predominant in households with short prior partnership duration stated by female respondents. According to Table 1, several couples conceived a common child prior to household formation.

At the time of household formation, men were on average two years older than women. Interestingly, the age at which a household was formed did not seem to be related to prior partnership duration. This suggests that partnerships which lasted for several years before the partners moved together were formed at younger ages compared to partnerships with shorter partnership durations, which was also revealed in the data. With regard to the partnership order, the sample demonstrates that the majority of the households were not formed with the first partner, but with partners of higher order. However, the regarded residential partnership was often the first one in the respondent's life course. This was more likely the case if the partners had been together for several years before moving in together. The correlation between the order of the partnership and the residential union was found to be modest (estimations showed a correlation coefficient of 0.42 for partnerships of male respondents and 0.44 for those of female respondents, respectively).

The majority of persons with a LAT length of 26 months and more (3rd tercile) lived together with their parents at the time the partnership started, while this was less common among persons with shorter partnership duration. Persons who spent several years dating their partner (3rd tercile) were also more highly

[8] Grey-coloured information added further insights into the composition, but it was not considered in the multivariate analyses due to high correlations with other variables.

educated and more often enrolled in education at the time of partnership formation. In sum, these characteristics picture long-term LAT couples as a special group, consisting of young persons who often did not have prior partnership experience and who did not live independently when they fell in love with their partner. Possibly, the student lifestyle and the still dominant parental influence keep these young adults from moving together (Brien et al. 2006; Thornton et al. 1995). Finally, also Catholic persons were more prevalent among the group of long-term LAT couples (3rd tercile).

Table 1 also reveals that partnerships which were directly transformed to residential unions represented a selective group. Both women and men of this category were more often non-Christian church members and foreign born, they formed more frequently direct marriages and had step children. On the one hand, these characteristics can suggest that these couples were more traditional; instead of prolonged dating, they rather got quickly committed to the partnership. It may also suggest that they defined the start of the partnership with the start of their joint life. The presence of step children can give a practical reason of why partners moved together right after the partnership start: Children living in the household of one of the partners make it necessary to organize child care in case the partners meet outside of this household. Thus, the partners may quickly choose to move together to simplify their partnership life.

Table 1: Sample composition by gender and partnership duration prior to household formation (terciles), in column percent

Dating length	**Direct household formation: 0 months**		**1st tercile: 1-9 months**		**2nd tercile: 10-25 months**		**3rd tercile: 26-120 months**	
Respondents	Male	Female	Male	Female	Male	Female	Male	Female
Partnership characteristics								
Marital status (TV)								
Cohabiting	47	46	53	49	49	50	49	47
Married (direct marriage)	28	28	13	14	18	17	17	19
Married (marriage after cohabitation)	25	26	34	37	32	33	34	34
Parental status (TV)								
No children	53	50	56	52	54	51	57	54
1child, <2 years	19	18	19	19	19	19	19	21
1 older child	10	9	9	9	9	9	8	7
2 or more children, youngest <2years	14	16	11	14	14	15	12	13
2 or more children, youngest older	5	6	4	6	5	7	4	4
Stepchildren in household (TC)								
No	93	83	95	86	96	91	99	95

Yes	7	17	5	14	4	3	1	5
Pre-union child (TC)								
No								
Yes	94	94	92	90	86	86	90	91
	6	6	8	10	14	14	10	9
Individual background characteristics								
Age when partnership was formed (mean in years) **(TC)**	25.8	23.3	25.2	23.4	24.3	22.7	21.6	19.8
Partnership order (TC)								
1st order	44	40	35	32	39	39	51	55
Higher order	56	60	65	68	61	61	49	45
Union order (TC)								
1st order	70	67	73	70	83	78	92	92
Higher order	30	33	27	30	17	22	8	8
Lived with parents when partnership was formed (TV)								
Alone	66	64	64	63	55	55	43	40
With parents	34	36	36	37	45	45	57	60
School education (TC)								
Low	30	31	27	22	27	19	21	14
Middle	39	42	37	44	35	41	33	39
High	30	26	35	33	37	39	45	46
Missing	<1	<1	<1	1	<1	<1	<1	<1
Enrolled in education when partnership was formed (TC)								
No	87	82	85	80	80	77	76	71
Yes	13	18	15	20	20	23	24	29
Church membership (TC)								
Catholic	25	22	27	27	30	29	36	37
Protestant	23	30	29	33	30	32	28	32
None	32	30	35	32	30	30	26	23
Other	20	17	8	7	9	8	9	8
Missing	<1	<1	<1	<1	<1	<1	<1	<1
Birth cohorts (TC)								
1971-1973	72	64	64	63	63	64	62	60
1981-1983	28	36	36	37	37	36	38	40
Birth place (TC)								
West G.	55	51	64	61	66	66	70	70
East G.	19	18	21	21	18	18	17	17
Elsewhere	26	31	15	18	15	16	13	13
Lived with both parents until age 18 (TC)								
Yes	47	51	50	48	58	57	60	59
No	19	25	20	24	15	18	11	14
Missing	34	24	30	28	27	25	29	27
Employment status (TV)								
Non-empl.	7	18	8	19	8	17	6	16
Employed	37	31	48	33	49	33	55	36
No inform.	56	50	44	49	43	50	39	48
Sample size	404	528	1,089	1,444	960	1,351	1,007	1,447
Events	106	163	361	468	263	378	200	310

Source: German family panel (pairfam/DemoDiff), Release 3.0 (2011/2012)

Notes: Weighted sample

TC: Time-constant information (presented in mean values or in column percent, respectively)

TV: Time-varying information (presented as relative exposure time in percent of total person months (column percents))

Multivariate results

Table 2 gives the multivariate regressions by gender. Results are shown in relative risks. In a first step, I estimated a basic model (Model 1), which included the baseline (time since household formation), the central covariate of interest (partnership duration prior household formation), as well as control covariates accounting for the special data structure of the German Family Panel (birth cohort design, oversampling of eastern Germans). Model 2 included other control covariates (religion, education, living with both parents, age at partnership formation, partnership order, presence of common and step children, marital and employment status). Figure 3 shows the results of an interaction of the marital status with the LAT length prior household information.

LAT length and union stability

The results in Model 1 and Model 2 show that whether the couple fast or slowly progressed to household formation had a significant impact on union stability. Compared to the 2nd tercile, the risk of dissolution was significant higher among those who moved together within the first nine partnership months (1st tercile) and lowest among couples who spent several years dating before forming a household (3rd tercile). The LAT length was clearly negatively linked to the risk of union dissolution. This gives support for the first research hypothesis (H1a), which assumed that a long LAT duration would improve the knowledge on the partner characteristics and thus, increase stability. Unions without prior LAT episode however did not fit in this picture: Compared to unions with a short LAT period (1st tercile), those who directly started as residential unions had somewhat lower risks of union dissolution. This suggests that those couples who directly formed a household represent a special group.

Other factors associated with union stability

The association between LAT length and household dissolution remained statistically significant when other individual and partnership characteristics were controlled for. Most of the results of the control covariates were in line with previous findings. Among male and female respondents, marriage was found to strongly promote union stability. Direct marriages had risks of union dissolution that were similar to that of marriages preceded by cohabitation. Common children reduced the risk of union dissolution if the child was not already present at the time the household was formed. Living in a stepfamily had a different impact on the union stability among male and female respondents. Women living with her or her partner's children from previous relationships had an increased risk of union dissolution, while men experienced significantly higher levels of union stability in case they formed a stepfamily. It is likely that the different recalling of stepfamily episodes by men and women have produced this finding, as has been argued by Martin and her colleagues (2011): According to official statistics (Statistisches Bundesamt 2012), the majority of the children live with their mother after their parents separated, which means that stepfamilies often consist of a biological mother and a non-biological father. In case this partnership splits up, the mother will continue to live with their children, while the children's contact to the stepfather might stop. This makes it likely that male respondents have more often underreported step-children. In consequence, the stability of unions with stepchildren among male respondents would have been overestimated in the analysis.[9] Partnerships formed by persons of the birth cohorts 1981 to 1983 had higher risks of household dissolution than had partnerships formed by men and women born 1971 to 1973. This might be related to the fact that the partnership histories of persons belonging to the younger cohorts were earlier censored. In consequence, early and probably more unstable partnerships were over-represented. Among female respondents, the disruption risks of eastern Germans turned out to be lower than of western Germans, once the control covariates were added. Separate

[9] This is indeed confirmed by model estimations which considered the stepfamily constellation. These results show that among unions stated by male respondents, stepfather families had significant *lower* relative risks of separation (0.23 ($p < 0.01$)) than unions without stepchildren (ref.). Stepmother families faced higher risks (1.63 (n. s.)). Among female respondents, stepfather families however had significant *higher* relative risks of separation (1.26 ($p < 0.05$), as had also stepmother families (1.33 (n. s.)).

estimations indicated that this decomposition effect was attributable to the religious background (results not shown). Women without religious denomination had elevated risks of experiencing household disruption. Non-affiliated persons are over-represented in eastern Germany (Schnor 2012). Controlling for the separation-proneness of religiously unaffiliated persons thus affected the coefficients on birth place. This relation was found only among female respondents, which suggests that the religious background played a more important role for women. Unions of persons who did not lived with both parents until they reached adulthood faced lower stability, as did unions of male respondents who were living with their parents at the time the partnership was formed. Women with a low educational background or episodes of non-employment had an increased risk of union dissolution.

Table 2: Relative risks from piecewise constant survival model of household dissolution within eight years after household formation among German men and women born 1971-1973 and 1981-1983

	Model 1		Model 2	
Respondent	**Male**	**Female**	**Male**	**Female**
Partnership duration prior household formation				
Direct household formation	1.02	1.13	1.00	1.09
1st quintile (1-9 months)	1.26***	1.19**	1.25**	1.15*
2nd quintile (10-25 months)	1	1	1	1
3rd quintile (26-120 months)	0.71***	0.76***	0.66***	0.81***
Baseline (time since household formation) (TV)				
0-1 years	0.91	0.79**	0.79**	0.69***
1-2 years	1	1	1	1
2-3 years	1.03	1.07	1.20*	1.22**
3-5 years	0.86	0.95	1.27**	1.30***
5-8 years	0.63***	0.68***	1.31*	1.23*
Residential union order				
1st order	1	1	1	1
Higher order	1.00	1.12	1.20	1.14
Birth cohorts				
1971-1973	1	1	1	1
1981-1983	1.89***	1.49***	1.36***	1.26***
Birth place				
West G.	1	1	1	1
East G.	1.03	0.95	0.94	0.67***
Elsewhere	0.44***	0.56***	0.76*	0.84*
Church membership				
Catholic			1.16	0.92
Protestant			1	1
None			1.15	1.39***

Other			1.18	0.72**
Missing			1.02	0.78
School education				
Low			1.13	1.17*
Middle			1	1
High			1.06	1.03
Missing			0.95	1.58*
Enrolled in education when partnership was formed				
No			1	1
Yes			1.13	0.89
Lived with both parents until age 18				
Yes			1	1
No			1.32***	1.44***
Missing			1.23*	1.07
Lived with parents when partnership was formed			1	1
No			1.15	1.06
Yes				
Age when partnership was formed				
14-19 years			1.12	1.13*
20-23 years			1	1
24-28 years			0.88	0.90
29-38 years			0.79*	0.77*
Partnership order				
1st order			1	1
Higher order			1.15*	1.13*
Stepfamily				
No			1	1
yes			0.45***	1.27**
Pre-union Child				
No			1	1
Yes			1.63***	1.31**
Parental status (TV)				
No children			1	1
1child, <2 years			0.27***	0.48***
1 older child			0.57***	0.84
2 or more children, youngest <2years			0.18***	0.26***
2 or more children, youngest older			0.52***	0.68***
Marital status (TV)				
Cohabiting			1	1
Married (direct marriage)			0.30***	0.50***
Married (marriage after cohabitation)			0.30***	0.34***
Employment status (TV)				
Non-employed			1.17	1.20**
Employed			1	1
Missing			0.95	1.03
N (unions) =	3460	4770	3460	4770
N (respondents) =	2888	3864	2888	3864
N (union dissolutions) =	930	1319	930	1319

Source: German family panel (pairfam/DemoDiff), Release 3.0 (2011/2012)

Notes: All models include a person-specific random intercept;

Significance levels: *** p < 0.01; ** p < 0.05; * p < 0.1.

TV = time-varying covariate (on monthly base)

Marital status, LAT length and union stability

Figure 3 shows the effect of the LAT length on the risk of union dissolution, depending on the marital status of the union. Among non-marital and marital unions, the risk of union dissolution decreased with the length of the non-residential partnership episode. It was hypothesized that this effect would be stronger among non-marital cohabitations than among marriages. The partnership duration prior to household formation should least affect the stability of unions which married before household formation (direct marriages), because these couples feel very committed to the institution of marriage and would not easily dissolve the union (hypothesis 2). The empirical results provide some evidence for this hypothesis.

At first glance, there seems to be no interaction effect among unions stated by male respondents: The LAT length has a similar effect on marriages as on cohabitations. The results for direct marriages were identical to those for marriages preceded by cohabitation. However, significance tests revealed that only among cohabitations the effect of the LAT duration was significant.[10] Perhaps the number of cases in the categories of marital partnerships was insufficient to indicate significant differences; but this finding may also suggest that indeed the LAT period influenced the union stability of cohabitations more than the stability of marital relationships.[11]

The results for unions stated by female respondents differed somewhat from these findings. There is evidence for an interaction effect: As expected, a short LAT length (1st tercile) had a stronger impact on the stability of cohabitations than on marriages preceded by cohabitation. However, also among direct marriages,

10 Cohabiting unions with short LAT length (1st tercile) had 25 percent (p < 0.5) higher risks of union disruption compared to their counterparts with medium LAT length (2nd tercile). The risk was reduced by 32 percent (p <0.01) for unions with long LAT length (3rd tercile).

11 As direct marriages and marriages preceded by cohabitation have very similar separation risks, I grouped them in one category and estimated a model that considered the marital status as a binary variable (cohabiting vs. married). In this model, unions with long LAT periods (3rd tercile) had significant (p < 0.05) lower separation risks than unions within the 2nd tercile. Unions with short LAT duration (direct household formation, unions of 1st tercile) did not encounter significant different stability levels.

the risk of dissolution was increased in case prior LAT duration did not exceed nine months. Direct marriages of the first tercile are couples which decided hastily to get married. They have an increased risk of dissolution, eventually because the partners have not sufficiently tested each other prior to marriage. Marital couples who already lived together prior to marriage had time to screen their future spouse. Out-selection of non-compatible partners is likely to take place before marriage: within cohabitation. Possibly, this also explains why union stability is significantly lower among cohabitations. Whether the non-residential partnership endured two years together (2nd tercile) or more (3rd tercile) had an impact on the stability of cohabitations and marriages preceded by cohabitation: spending more than two years in a non-residential partnership before moving together produces the highest stability levels. This is less expressed among direct marriages. This result may give support for hypothesis 2. However, it can also be that the positive selection effect of long-term LAT couples was counteracted by a negative effect inherent to these couples: maybe, the couples' doubts in partnership survival prolonged the way to marriage and household formation.

The model results for male and female respondents differed with regard to the effect of the LAT length on the union stability of direct marriages and marriages after cohabitation. This reveals that the data did not rely on the same unions. The reasons behind these differences are hard to identify. Control covariates, like religious affiliation, did not produce these differentials; the interaction terms in a model without control covariates (equivalent to Model 1) show very similar results. The partnership histories stated by male respondents is often assumed to be less reliable than those stated by women; probably, men had more problems to remember the correct dates of marriage and household formation.[12] In this case, one would not compare the same kind of unions. One has further to consider that women and men belonged to the same birth cohorts, but they were at different ages when the household was formed. The analysis followed the union life in its first eight years; thus, the cut-off point may be different for male and female respondents.

[12] Identical dates of marriage and household formation can give a hint on recall difficulties. More men (43 percent) than women (34 percent) who were married at the time they moved together with the partner stated that the marriage formation date and the household formation date were identical.

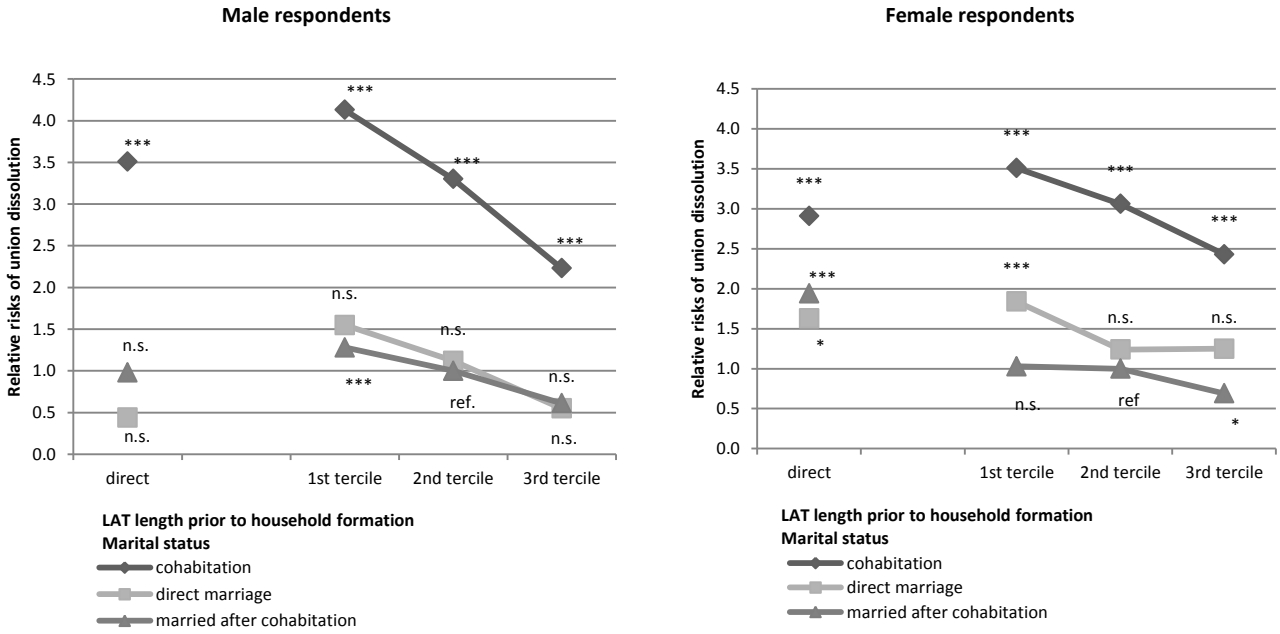

Figure 3: Transition to union dissolution; results of an interaction of marital status and LAT length, shown in relative risks (Marital unions who cohabited prior to marriage with a dating length of 13 to 21 months form the reference category)

Source: German family panel (pairfam/DemoDiff), Release 3.0 (2011/2012)

Notes:

Both models included a person-specific random intercept and controlled for the baseline, birth cohort and birth place, union and partnership order, church membership, school education, educational enrollment, age and living arrangement at the time the partnership was formed, residence with both parents until 18th birthday, presence of stepchildren and presence and age of common children, employment status.

Significance levels: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Conclusion – Does waiting pay off?

This study dealt with the effect of partnership duration prior to household formation on union stability. Plenty of previous research has concentrated on the antecedents of union stability. However, the determining influence of the LAT period has been rarely examined. This seems surprising, because most partners lived in separate households before they moved in together: this study revealed that around 90 percent of the unions formed by men and women born 1971 to 1973 and 1981 to 1983 were preceded by some period of living apart together. 50 percent of the residential unions were formed within in the first partnership year, which confirmed the findings of previous research (Schneider & Rüger 2008). On one hand, one could expect that the LAT period has a stabilizing influence on union stability, but also a destabilizing influence was conceivable: The economic theory of the family (Becker 1991; Becker et al. 1977; Oppenheimer 1988) stresses the importance of knowledge of the partner's attributes. Couples should experience higher levels of union stability, if they had sufficient time to collect information about the partner before they invest in the partnership through household formation (hypothesis 1a). The competing hypothesis (1b) referred to arguments prevalent in exchange theory (Thibaut & Kelley 1958) and stated that the LAT length should negatively affect union stability, because it indicates that the couple hesitated to invest in the partnership.

The empirical results showed that the risk of household dissolution declines with the time spent in a partnership before household formation. The risk of union disruption was higher if the couple had a short (1 to 9 months) non-residential partnership period before the joint household was formed. Couples who spent 10 to 25 months living apart together had better union prospects. The chances of union survival were highest if the union belonged to the group of long-term LAT couples (> 26 months). It seems that the information argument (hypothesis 1a) prevails with regard to partnership duration. While keeping their separate residences, a couple can spend their day-to-day life together as a "trial union" to evaluate the partner's characteristics. Several traits can be readily assessed after the first meeting (like e.g. education, religion, family background, race, appearance). During the courtship process, traits that are more difficult to assess get

evaluated, like honesty, reliability and other personality traits (Oppenheimer 1988). The LAT period works as a testing stage that enables not only to select the appropriate partner, but also to adapt to each other in daily life and to work out commonalities. The shorter the LAT period, the more likely should be the emergence of partnership difficulties after household formation. In consequence, a long LAT period indicates not so much that the couple has a low interaction density, which is reflected in higher rates of union disruption after moving together, as has been postulated in hypothesis 1b. It rather shows that the couple matches very well, because the low barriers of separation favored a strong weeding-out of potential mismatches. If the couple overcame the obstacles of a household formation only after a long period, they could expect a high level of relationship stability. Unlike the premarital cohabitation episode, a longer duration of the LAT episode does not increase the risk of union dissolution again. Potentially, an optimal time frame exists only with regard to premarital cohabitation, with those hasting to marriage having an increased chance of mismatch and those who wait quite a while to marry having reasonable doubts about the marriage success.

A special case presented those partnerships that had no LAT period. In line with hypothesis 1a, these unions should have been more fragile compared to unions with a LAT length of 1 to 9 months. However, the results revealed that they were more stable. This may be the result of some recall problem: probably, partners who directly started to live together had in fact some prior LAT period, which was not remembered by the respondents. However, this finding may also show that these partners were highly committed. They decided to directly start their partnership within the more committed form of a residential union instead of the more noncommittal form of LAT, maybe because they were strongly convinced that their partnership will last.

The multivariate results revealed that cohabiting unions face much lower levels of union stability than marital unions. The LAT length was positively associated with union stability in both union forms. In hypothesis 2, it was assumed that the length of the LAT period would mostly affect cohabitations, but to a less extent marriages preceded by cohabitation. Direct marriages should be least influenced by the LAT period. Previous studies showed that the partnership duration prior household formation reduced the risk of separation among marriages (e.g. Brüderl et al. 1999; Brüderl & Kalter 2001). This study gave some evidence that the effect is

even more pronounced among cohabitations. In line with the prior argumentation, this leads to conclude that non-marital residential unions are somewhat more likely than marriages to answer to mismatches rising from insufficient testing prior household formation by quitting the union. However, it was not consistently found that direct marriages were to a lesser extent determined by the LAT period than marriages preceded by cohabitation. In fact, the stability of direct marriages was more affected by a short prior LAT period than the stability of premarital cohabitors (at least among unions stated by female respondents). This suggests that insufficient time to test the partner has also consequences for marital stability. In sum, the empirical findings provided some support for the raised hypothesis; however the conclusions remain rather tentative. Future studies are needed to shed more light on the effect the LAT period has on the stability of cohabitations in comparison to marriages.

This study provided a new insight into the topic of union stability and contributed to picture the non-residential partnership episode. It was shown that waiting pays off for couples, as the duration of the partnership period prior to household formation had a significant influence on the union dissolution risks. However, the empirical analyses could not disentangle the exact mechanisms that explain the positive relation between the LAT length and subsequent union stability. The theoretical literature suggests that personality traits should be more relevant than socio-demographic characteristics to explain the transition to household formation. This issue was not addressed, because individual information on both partners was lacking. It was assumed that the weeding-out process played a central role, however this aspect was not modeled in the empirical part. Future studies may decide to include the decision to form a household as a process in the modeling.

In the private life course of many individuals, the dates of partnership, residential and marital episodes fall apart. The study exemplifies that empirical research on separation needs to pay more attention on the appropriate definition of the events of interest. In the past, researchers changed their focus from the marriage episode to the episode of coresidence: some decades ago, scholars (e.g. Becker et al. 1977; Morgan & Rindfuss 1985; Teachman 1982; Teachman & Polonko 1990) agreed to define the date of marital dissolution

as the date the couple stopped living together rather instead of the legal end of a marriage, because it is a "more realistic marker of the end of a marital union" (Bracher et al. 1992: 405). These studies focused exclusively on the partnership stability of marriages. In more recent studies, researchers also considered non-marital residential episodes in their analyses and analyzed the union stability of marriages and cohabitations. This study shows that one needs to look further and to take the non-residential partnership episode as an integral part of the partnership. The date of partnership formation presents a more realistic marker of the start of a partnership than the date when the couple moved together. It was also shown that the event of separation and the event of moving out of the joint household do often not happen at once. This makes it necessary to justify the event of interest. In the present study, the focus laid on residential unions. Household dissolution was defined as the dependent variable. The detailed partnership information included in the German Family Panel enabled to distinguish the dates of partnership formation and household formation, as well as the dates of separation and household dissolution. Fortunately, there are more and more surveys which gather detailed partnership information. In the future, the distinction of partnership formation and household formation should be less a data concern.

In the past decades, new forms of private living arrangements such as cohabitation or the non-residential partnerships have been established in many societies. However, the fact that LAT partnerships become more widespread should not necessarily lead to the concern that partnerships in general are becoming more fragile. Rather, a long non-residential partnership episode helps to increase union stability. Waiting - not rushing - pays off.

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Appendix

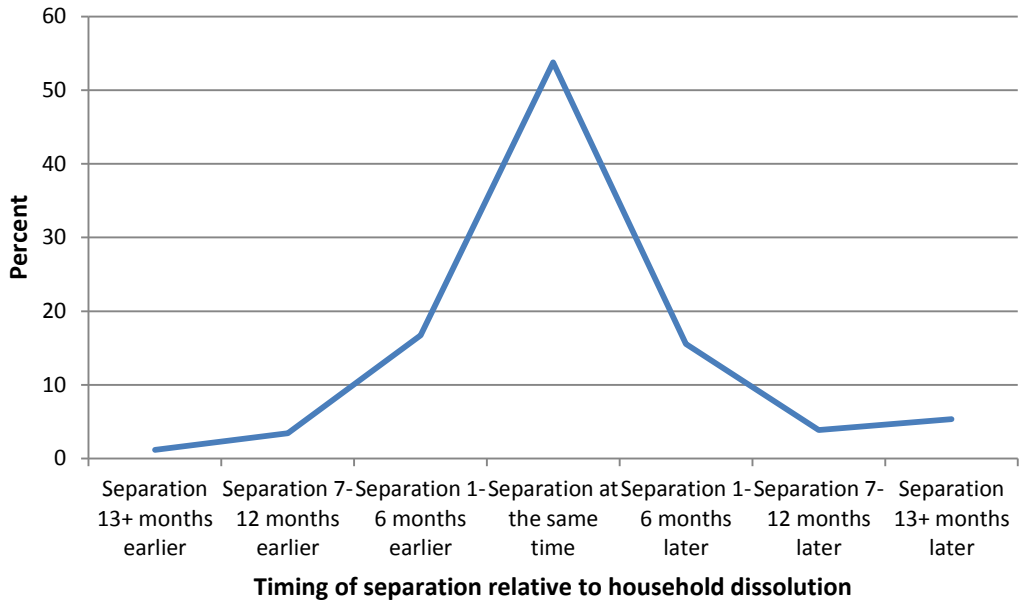

Figure 4: Timing of separation relative to household dissolution (= dependent variable) among partnerships in which household dissolution occurred within the first eight years of coresidence (N=2,249)

Source: German family panel (pairfam/DemoDiff), Release 3.0 (2011/2012)

Note: Weighted sample

Robustness checks

Several sensitivity checks were conducted to test whether the results concerning the determining influence of the LAT length on union stability were robust to changes in the sample (see Table 3, Table 4 and Figure 5 in Appendix). In check I, partnerships which started during teenag were dropped, because they might differ from partnerships formed in adult years. Check II excluded unions whose LAT length exceeded five years. Check III considered the total union episode gathered in the German family panel without censoring after eight years. In check IV the analysis was restricted to first unions. Separate models for the older and younger birth cohorts were estimated in check V. These modifications did not change the model results, however the coefficients lost significance in the sample that included only persons born 1981 to 1983, which is most probably attributable to the sample size.

In Table 2, the multivariate results in Model 2 showed that the risk of union dissolution decreased after the first year of household formation. It could be argued that a long dating period increases union stability, because the couple enters the analysis at a later point, when the baseline risk is already lower (Teachman & Polonko 1990). Engelhardt 2002, Niephaus 1999). This argument was tested in two ways. First, the union duration (baseline) was interacted with LAT length, which can reveal whether the baseline was shifted to the left among unions with longer dating duration (Figure 5). Second, I estimated a model in which the baseline date is shifted by the LAT length and treated couples with a prior LAT period as left-truncated cases (Check VI). However, these checks did not provide additional explanation. The sample statistics revealed that unions with different LAT duration spent similar time in marriage and with children. A plausible explanation is therefore that with household formation a new "clock" starts, and thus, the risk of union dissolution does not clearly continue the separation trend of the time while not living together.

When only higher order unions were considered (Check VII), the results revealed different relative risks for unions of different LAT lengths, e.g. the risk of union disruption of couples who directly formed a household was significant higher compared to the 2nd tercile, which always worked as the reference category. Accounting

for the faster transition to household formation among higher-order unions I found similar results compared to first unions.

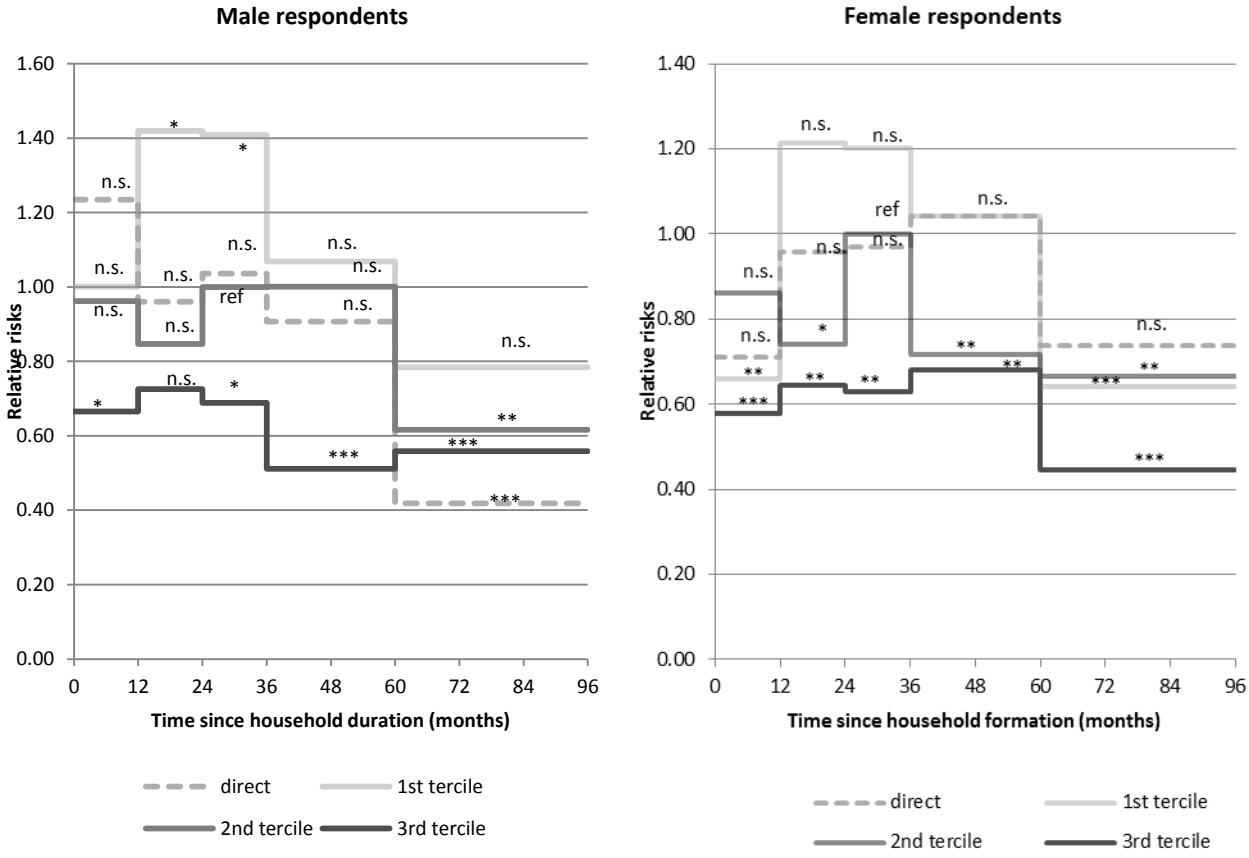

Figure 5: Robustness check VII: Interaction of the baseline with the dating length, results shown in relative risks.

Source: German family panel (pairfam/DemoDiff), Release 3.0 (2011/2012)

Notes:

Both models included a person-specific random intercept and controlled for birth cohort and birth place, union order.

Significance levels: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table 3: Robustness checks I-VI

	Check I	**Check II**	**Check III**	**Check IV**	**Check V**		**Check VI**
	Sample: only those who were age 18+ when partnership was formed	Sample: Only unions with maximum dating length of 5 years	Without censoring after 8 years (last observed exit at 282 months)	Sample: only first unions	Sample: only birth cohorts 1971-1973	Sample: only birth cohorts 1981-1983	Dating length considered as part of baseline; Sample: only first unions; Without censoring after 8 years
Unions stated by male respondents							
Direct: 0m	1.01	1.01	1.05	0.84	1.14	0.76	0.86
1st tercile: 1-9m	1.26**	1.26**	1.26***	1.18*	1.29**	1.24	1.21**
2nd tercile: 10-25m	1	1	1	1	1	1	1
3rd tercile: 26-120m	0.66***	0.71***	0.65***	0.64***	0.75**	0.55***	0.63***
Unions stated by female respondents							
Direct: 0m	1.16	1.08	1.14	0.90	1.13	1.02	0.98
1st tercile: 1-9m	1.18*	1.14**	1.13*	1.19**	1.14	1.14	1.16**
2nd tercile: 10-25m	1	1	1	1	1	1	1
3rd tercile: 26-120m	0.81**	0.85**	0.77***	0.83**	0.72***	0.91	0.78***

Source: German family panel (pairfam/DemoDiff), Release 3.0 (2011/2012)

Notes: All models included a person-specific random intercept and controlled for birth cohort and birth place, union and partnership order, church membership, school education, educational enrollment, age and living arrangement at the time the partnership was formed, residence with both parents until 18th birthday, presence of stepchildren and presence and age of common children, employment status, marital status.

Significance levels: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table 4: Robustness check VIII

Check VIII		
Sample: only higher-order unions		
	Unions stated by male respondents	*Unions stated by female respondents*
Direct household formation	1.85**	1.47**
original 1st tercile: 1-9 months	1.66**	1.02
original 2nd tercile: 10-25 months	1	1
original 3rd tercile: 26-120 months	0.95	0.62*
Direct household formation	1.13	1.40**
adapted 1st tercile: 1-5 months	1.19	0.98
adapted 2nd tercile: 6-14 months	1	1
adapted 3rd tercile: 15-120 months	0.59**	0.78

Source: German family panel (pairfam/DemoDiff), Release 3.0 (2011/2012)

Notes: All models included a person-specific random intercept and controlled for birth cohort and birth place, union and partnership order, church membership, school education, educational enrollment, age and living arrangement at the time the partnership was formed, residence with both parents until 18th birthday, presence of stepchildren and presence and age of common children, employment status, marital status.

Significance levels: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.