
Single Motherhood in East and West Germany: What Can Explain the Differences?

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Abstract

The share of single mothers is higher in East Germany than in West Germany. Using data from the Socio-Economic Panel (SOEP), we examine two transmission channels leading to single motherhood, namely out-of-partnership births and separations of couples with minor children. Women in East Germany have both a higher probability of out-of-partnership birth and a higher probability of separation. We find no evidence that availability of child care plays a role in the differences between East and West Germany. The differences in single motherhood appear to be rather driven by different gender role models and partially also by economic circumstances.

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1. Introduction

Two decades after reunification there are still large differences between East and West Germany. This does not only hold for the economic circumstances but also for the various dimensions of social life including single parenthood. Official statistics show that the share of parents living without a spouse or cohabiting partner in the household is substantially higher in East than in West Germany (Statistisches Bundesamt 2010). In the year 2009, 27 percent of East German families were single parent families. The share of single parent families in West Germany amounted to 17 percent.

This raises the question of what causes the differences between East and West Germany. As most single parents are single mothers, our study addresses the question by examining two transmission channels leading to single motherhood. Using data from the SOEP, we examine both out-of-partnership births and separations of couples with minor children.¹ Our results show that East and West Germany differ in both respects. Single women in East Germany are more likely to give birth to a child than single women in West Germany. Furthermore, East German couples have a higher probability to separate than West German couples.

We consider three possible explanations for the differences in single motherhood. First, East Germany is still characterized by poor economic outcomes implying that there is a lower share of men with a high earnings capacity. The lower earnings capacity of men may lead East German women to search more often for a new partner or to raise their children even without the help of a partner.

Second, availability of child care is much higher in East than in West Germany. Availability of child care allows mothers to combine work and family even if there is no

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¹ A third channel would be the death of the husband or cohabiting partner.

partner in the household. Hence, mothers' financial dependency on a partner may be lower in East Germany.

Third, cultural differences may play a role. People in East and West Germany lived under completely different political regimes for 45 years. This may have resulted in the emergence of different norms of love, partnership and family. The two parts of Germany differed substantially in their family policies. In West Germany, family policy was dominated for a long time by the traditional male breadwinner model with continuously employed men and only partially employed women. By contrast, the East German family policy promoted more equal gender roles and integrated women into full-time employment. To the extent people in West and East Germany have internalized the respective gender role model, one should still find behavioral differences even after reunification. More equal gender roles imply that women are not only economically, but also emotionally less dependent on a male partner. Thus, East German women may be more able and willing to raise children without a partner.

We run regressions with and without control variables for the economic situation and for the availability of child care. Including these variables does not change the pattern of results on out-of-partnership births. East and West German women differ in the probability of out-of-partnership birth even when taking the economic situation and the availability of child care into account. This suggests that the differences in out-of-partnership births may be rather due to cultural factors.

As to the higher rate of separations in East Germany, our estimates show that the economic situation but not the availability of child care plays a role. However, the higher rate of separations can also be explained by a higher share of cohabiting couples. Cohabiting couples have a higher likelihood of separation than married couples. Our results show significant differences in cohabitation between East and West Germany even when controlling for a rich set of explanatory variables. This is remarkable as we consider women with minor children in our separation and cohabitation regressions. The result is supportive of the hypothesis that East Germany is characterized by more equal gender roles. These more equal gender roles make women less dependent on a male partner so they are more willing to choose a less stable partnership arrangement even if they have children.

On a whole, our analysis suggests that cultural factors play a role in the East-West differences in both out-of-partnership births and separations. However, with respect to separations, we find that also economic factors contribute to the differences between East and West Germany. Our estimates provide no evidence that the availability of child care can explain the higher rates of out-of-partnership births and separations in East Germany.

On a broader scale, our study contributes to the literature on behavioral and cultural differences between East and West Germans. This literature indicates that the exposure to 45 years of communism in East Germany has had substantial long-term influences on solidarity and cooperation, social distrust, personality traits, and preferences for state intervention (Alesina and Fuchs-Schündeln 2007, Ariely et al. 2014, Friehe et al. 2015, Brosig-Koch et al. 2011, Heineck and Süßmuth 2013, Heywood et al. 2017, Lichter et al. 2015, Ockenfels and Weimann 1999, Rainer and Siedler 2009). Our study shows that there are also long-term consequences with respect to fertility and family.

The rest of this article is organized as follows. In the second section, we provide our background discussion. The third section presents the data and variables while the fourth section provides the estimation results. The fifth section concludes.

2. Background Discussion

2.1. Economic Situation

East Germany is still characterized by relatively poor labor market outcomes. In the year 2009, the unemployment rate amounted to 13 percent in East Germany compared to 7 percent in West Germany.² The average gross monthly wage of a full-time employee was 2486 Euro in East Germany compared to 3248 Euro in West Germany.³ Considering the economic theory of family, the poor labor market outcomes should play a role in the higher share of single parents in East Germany.

The economic theory of family assumes that joint production and consumption within a household is the reason for the formation of marital and cohabiting partnerships (see Bergstrom 1997 and Weiss 1997 for surveys). Consumption benefits result from consuming household public goods (including children). Gains in the production of household commodities result from economies of scale and returns to specialization. According to this theory, a man and a woman only form and sustain a partnership if the surplus generated by the partnership is sufficiently high. Other things equal, the size of the surplus depends on the partners' earnings capacity. Given the traditional specialization within families with women being disproportionately responsible for household labor and men being responsible for market labor, specifically a low earnings capacity of men should entail a smaller size of the surplus. This makes the formation of a partnership less likely (Willis 1999, Wilson 1987) and the dissolution of an existing partnership more likely (Becker et al. 1977, Weiss and Willis 1997).

Thus, the poor economic situation in East Germany may entail both a higher rate of out-of-partnership-births and a higher rate of separations. If single women in East Germany have a smaller chance to find a partner who brings resources to the partnership, they may decide to have a child without a partner. East German women living in a partnership may more often decide to search for a new partner or to raise their children as a single mother if the earnings capacities of their current partners more frequently turn out to be low.

2.2. Availability of Child Care

Availability of child care may be a second factor influencing the differences in single parenthood between East and West Germany. The socialist regime in the former German Democratic Republic (GDR) built up a comprehensive child care system. After German reunification the comprehensive child care system has, to a larger extent, survived so that availability of child care is higher in East than in West Germany (Schober and Stahl 2014, Wrohlich 2008).

As child care allows women to combine family and work, it lowers their financial dependence on a male partner (Bauernschuster and Borck 2012). This in turn may reduce women's incentive to form and sustain a partnership. Thus, a higher availability of child care may result in both a higher rate of out-of-partnership births and a higher rate of separations.

² See www.destatis.de/DE/ZahlenFakten/Indikatoren/LangeReihen/Arbeitsmarkt/lrarb001.html

³ See www.destatis.de/DE/ZahlenFakten/GesamtwirtschaftUmwelt/VerdiensteArbeitskosten/VerdiensteVerdienstunterschiede/Tabellen/Bruttomonatsverdienste.html

However, the comprehensive provision of child care was only one component of a family policy in East Germany that substantially differed from the West German one. The socialist regime pursued the goal of equality including the equality of men and women. It encouraged labor force participation of women by policies that helped reconcile work and family life.⁴ This policy may have changed gender roles and, thus, may have long-lasting behavioral consequences that persist even after reunification. In what follows, we discuss this possible explanation in more detail.

2.3. Gender Roles

During the years of separation, the two parts of Germany differed substantially in their family policies (Engelhardt et al. 2002, Hiekel et al. 2015, Pfau-Effinger and Geissler 2002, Rosenfeld et al. 2004). In West Germany, family policy was dominated for a long time by the traditional male breadwinner model. Instead of facilitating women's employment opportunities, the government focused on parental leave policies allowing mothers to stay at home with their children. By contrast, the family policy in East Germany promoted more equal gender roles. The main goals of East German family policy were to integrate women into full-employment and to encourage childbearing. The communist regime not only built up a comprehensive child care system that allowed women to stay in the labor force even during childbearing years. It also enabled women to reconcile work and family by measures such as child-illness leave or reductions in working hours for full-time employed mothers. The East German family policy provided parental leave, but parental leave was coupled with far reaching rights to job return. Moreover, in contrast to West Germany, the East German tax system provided no incentive for women to stay at home. Finally, some family policies in East Germany even privileged unmarried mothers. For unmarried women, the government permitted a 1-year paid maternity leave already for their first child. For married women, this maternity leave was granted for the second child only.

After reunification, the West German family and marriage law was adopted by the whole of Germany. However, to the extent people in East and West Germany have internalized the respective gender role model, one should still find behavioral differences even after reunification. The experience of a new politico-economic regime is unlikely to make East Germans completely abandon the family and moral values they have acquired through socialization. Available evidence indeed suggests that the process of cultural transmission, if any, takes a long period of time.

Attitudinal studies show that East Germans are still much more likely to hold egalitarian sex-role attitudes (Bauernschuster and Rainer 2012, Dorbritz and Ruckdeschel 2009, Kreyenfeld and Geisler 2006, Lee et al. 2007, Scott 1999, Treas and Widmer 2000). East Germans are more likely to disagree with the view that women have to stay home in order to take care of children. They also more often refuse the view that a woman has to support the husband's career instead of making her own. Most interestingly, East Germans more often share the view that one parent can raise children as effectively as two parents can do.

Labor supply studies show that the attitudinal differences are matched by behavioral differences (Haan 2005, Haan and Wrohlich 2011, Kreyenfeld and Geisler 2006). Employment rates are still higher among East German than among West German

⁴ Of course, a further reason for the comprehensive provision of child care was that the regime tried to control the socialization and education of its citizens from the very start of their lives.

women. Furthermore, mothers in East Germany are more likely to work full-time than mothers in West Germany and their employment patterns are little influenced by their marital status.

The notion that different norms of love, partnership and family have evolved in the two parts of Germany is also supported by the fact that cohabitation is more prevalent among East Germans. While cohabitation is largely viewed as an inferior substitute for marriage in West Germany, it is socially more accepted and often viewed as an alternative to marriage in East Germany (Hiekel et al. 2015). Cohabitation relies to a lesser extent on formal commitments and, hence, entails more insecurity in case of a separation particularly if the woman has children. Thus, cohabitation indicates a greater independence of women. Economically and emotionally independent women are more likely to accept a living arrangement that involves a higher insecurity. Closely related to this, cohabiting couples rejecting marriage as an institution may be also likely to reject the roles of breadwinner and housewife that go along with traditional marriage (Baxter 2001). From a sociological viewpoint, cohabitation involves a greater lack of normative prescriptions for role performance. This leaves space for cohabiting couples to negotiate more egalitarian relationships.

Altogether, the available evidence is supportive of the notion that there still exist more equal gender roles in East Germany even though the former political regime is no longer in place. The more equal gender roles provide a third explanation for the differences in single parenthood between East and West Germany. More equal gender roles imply that that women are both emotionally and economically less dependent on a male partner. They are less likely to define themselves through a partner and the stronger labor force attachment enables them to earn their own living. This should increase their willingness to raise children without a male partner or spouse resulting in higher rates of both separations and out-of-partnership births.

3. Data and Variables

3.1. The Data Set

Our empirical analysis uses data from the SOEP (Wagner et al. 2007). The SOEP is a large representative longitudinal survey of households in Germany. Based on face-to-face interviews, a nucleus of socio-economic and demographic questions is asked annually. Different ‘special’ topics are sampled in specific waves.

For our analysis, we need information on the availability of child care. This information is not provided by the SOEP but can be obtained from official German statistics. Information on the availability of child care is only published for 2006 and subsequent years. Thus, we focus on waves 2006 to 2014 of the SOEP. We limit our analysis to women without migration background.⁵

⁵ The SOEP is stratified according to gender, migration background and age. As we focus on women without migration background, the first two stratification characteristics are not relevant for our analysis. We account for the third stratification characteristic by including age variables in the regressions. As shown by Winship and Radbill (1994), weighted regressions are not required if variables for the stratification characteristics are included in the regressions.

3.2. Key Variables

Table 1 provides the definitions of the variables. For the analysis of out-of-partnership birth, we focus on women who are singles (without husband or cohabiting partner) in the previous year and in the actual year. The dummy dependent variable for out-of-partnership birth is equal to 1 in the actual period if a single woman has no child in the previous year and has a child in the actual year. The variable is equal to 0 if the single woman has no child both in the previous and in the actual year. Our definition of the variable implies that, in the initial year 2006, we only consider single women without children and observe out-of-partnership births in each year from 2007 to 2014. For the empirical analysis, we pool the data from the years 2007 to 2014. The analysis on the determinants of out-of-partnership births is limited to single women who are 18 to 35 years old and initially have no child.

Note that the resulting panel for the analysis of out-of-partnership birth is unbalanced. Women enter the estimation sample if they have a change in partnership status and become singles after 2006. Single women also enter the estimation sample after 2006 if they belong to a refreshment sample. Women are dropped from the estimation sample if they are no longer singles or do no longer participate in the survey. Moreover, once we observe an out-of-partnership birth, the single woman is dropped from the sample for all subsequent years. As long as a single woman has no out-of-partnership birth, she is in the sample and, thus, may count more than one time in the pooled estimation sample.

The second dependent variable is a dummy variable for separations. As our study aims at examining the determinants of single motherhood, we focus on women with children under age of 16.⁶ The dependent variable is equal to 1 in the actual period if the woman has a husband or partner in the previous year and is separated from her husband or partner in the actual year. The variable is equal to 0 if the woman has the husband or partner in the previous and in the actual year. The definition of this variable implies that, in the initial year 2006, we consider only women with a husband or partner and observe separations in each year from 2007 to 2014. For the empirical analysis, we pool the respective data from these years. The analysis on the determinants of separation is restricted to women who are 18 to 55 years old.

The resulting panel for separations is unbalanced, too. Women enter the estimation sample if they report that they have a spouse or partner after the year 2006. Women with a husband or partner also enter the sample if they belong to a refreshment sample. Women are dropped from the estimation sample if they do no longer participate in the survey or stay single after the separation. As long as there is no separation, a woman with a husband or partner is in the sample and, thus, may count more than one time in the pooled estimation sample.

Our explanatory variable of primary interest is a dummy equal to 1 if the woman resides in East Germany. The dummy is equal to 0 if the woman resides in West Germany. We exclude women who have migrated from East to West Germany or from West to

⁶ Kraft (2001) and Kraft and Neimann (2009) have also used the SOEP to examine the determinants of separation. Our analysis differs in several respects from this previous research. First, while their studies focus on the divorce of married couples, we examine the separation of both cohabiting and married couples. Second, while their studies also consider couples without children, we focus on couples that have children. Third, the study by Kraft and Neimann (2009) is limited to West Germany whereas our study considers separations in East and West Germany.

East Germany. For our analysis, we focus on East German women who have lived in East Germany before the fall of the Berlin Wall. Accordingly, we focus on West German women who have lived in West Germany before the fall of the Wall. This helps capture the potential influence of long-term cultural factors.

The descriptive statistics shown in Table 2 provide first evidence that West and East German women differ in both out-of-partnership births and separations. In the East German sample there are 2.8 percent of observations with out-of-partnership birth compared to 0.7 percent in the West German sample. The share of observations with a separation is 2.2 percent in the East German and 1.6 percent in the West German sample. Hence, the descriptive statistics suggest that both a higher rate of out-of-partnership births and a higher rate of separations contribute to the higher share of single parents in East Germany.

In order to test whether the higher probabilities of out-of-partnership birth and separation among East German women can be explained by child care availability or economic circumstances, we will run regressions with and without including variables for these factors. If the higher availability of child care plays the crucial role, the dummy for residing in East Germany should only emerge as a significant determinant in regressions that do not control for child care availability. It should not emerge as a significant determinant in regressions that control for child care availability. If economic circumstances play the decisive role, the dummy for East Germany should only take a significant coefficient in regressions that do not control for the economic situation. It should not take a significant coefficient in regressions that include variables for the economic situation.

Our measure of child care availability is the number of child care facilities divided by the number of children under age 6 in the federal state the woman lives in. Additionally, we include two dummy variables indicating if the woman's mother and father live with her. These variables take into account that out-of-partnership births and separations may be influenced by the organization of the household. We also control for the woman's labor force participation by including variables for her actual working hours and for the commuting distance. These variables control for time restrictions. In the regressions on the determinants of separations, we additionally take the partner's commuting time into account.

The economic situation is captured by the woman's earnings, unemployment status and unemployment benefits. Variables for house ownership and indebtedness are also taken into account. In the analysis on the determinants of separations, we also control for the partner's earnings, unemployment status and unemployment benefits. In the analysis on the determinants of out-of-partnership birth, we additionally include a variable for the male unemployment rate at the federal state level to account for the earnings capacity of potential partners.

If child care availability and economic circumstances cannot explain the differences between East and West Germany, the dummy for East Germany should still emerge with a significant coefficient of roughly the same size even when controlling for these factors. This would suggest that the differences in out-of-partnership births and separations can rather be explained by different gender role models in East and West Germany. Of course, this is not direct but rather indirect evidence of the role of cultural differences. The hypothesis that more equal gender roles explain the higher share of single mothers in East Germany is supported by excluding other potential explanations.

However, in the analysis on the determinants of separations, we also take into account whether the woman is married or lives in cohabitation. The descriptive statistics show that cohabitation is much more widespread among East German than among West German mothers. The share of mothers living in cohabitation is 26 percent in East Germany compared to 7 percent in West Germany. As suggested by our background discussion, cohabitation can be seen as a living arrangement that is based on less formal commitments and provides more scope for egalitarian relationships. Thus, by running regressions with and without the control variable for cohabitation, we can check whether the higher probability of separation in East Germany can be explained by the higher propensity for cohabitation. This can be seen as a further test of the role of different norms of partnership, love and family.

3.3. Control Variables

Building on the empirical literature on the formation and dissolution of families (e.g., Bruze et al. 2015, Kraft 2001, Kraft and Neimann 2009, Weiss and Willis 1997) we add control variables for health, age, education, urban residential area and religiosity. The estimations on out-of-partnership birth further include a control variable for previous relationships. The dummy is equal to 1 if a single woman reported that she had a partner since she entered the panel. As we consider women who are singles in the actual and the previous year, the variable for a previous relationship refers to a relationship two years ago or earlier. In the regressions on the determinants of separation, we also account for the number of children and for age differences and educational differences between the partners.

4. Results

4.1. Determinants of Out-Of-Partnership Birth

Table 3 provides a series of probit estimations on the determinants of out-of-partnership birth. In regression (1), we include only a constant and the dummy variable for residing in East Germany. The variable takes a significantly positive coefficient. The corresponding marginal effect implies that a single woman in East Germany has a 2 percentage point higher probability of giving birth to a child. Taking into account that this probability is 1 percent for West Germany, the difference between the two parts of Germany is substantial.

In regression (2), we expand the specification by additionally including basic control variables for age, education, health, residential area, a previous relationship and the year of observation. The basic control variables do not emerge with significant coefficients and their inclusion does not change the result on our key explanatory variable.

In regression (3), we add controls for child care availability, actual working hours, commuting distance, and the woman's parents living with her. Commuting distance has an inverted u-shaped influence while a father living in the woman's household appears to be a significantly negative determinant of out-of-partnership birth. The coefficient on availability of child care is insignificant and even takes a counterintuitive negative sign. The variable for East Germany remains a significantly positive determinant of out-of-partnership birth. Thus, the estimation provides no evidence that the differences between the two parts of Germany can be explained by the higher availability of child care facilities in East Germany.

In regression (4), we add variables for the economic situation to our basic specification (2). Most of these variables do not emerge as significant determinants of out-of-partnership birth. An exception is the variable for indebtedness. Indebtedness emerges as a negative determinant. Most importantly, the coefficient on the dummy for East Germany still remains significant. Hence, the regression does not suggest that economic factors can explain the differences in out-of-partnership birth.

Finally, in column (5), we present the results of a full specification that accounts for all explanatory variables including religious affiliation. In this regression, single women in East Germany also remain significantly more likely to become single mothers. The estimated coefficient and the marginal effect have even increased in the fully specified model. Single women in East Germany have a 2.5 percentage point higher probability of out-of-partnership birth than single women in West Germany.

Altogether, our analysis provides no evidence that the higher likelihood of out-of-partnership birth in East Germany can be explained by the higher availability of child care or the poor economic situation. This suggests that other factors should play a role. As discussed, different norms of love, partnership and family have developed in East and West Germany. People in East Germany are more likely to have non-traditional sex role attitudes. As a consequence, single women in East Germany appear to be more willing to give birth to a child.

4.2. Determinants of Separation

Table 4 shows the results on the determinants of separation. Regression (1) only includes a constant and the dummy variable for East Germany. The dummy takes a significantly positive coefficient. In East Germany, a woman with children has a roughly 1 percentage point higher probability to separate from her husband or partner. This suggests that also a higher rate of separations contributes to the higher share of single women in East Germany.

Regression (2) additionally includes a series of basic control variables. Education and health are negative determinants of separation. Furthermore, both age and age differences play a role. The risk of separation is higher for younger mothers. It is also higher if there is an age difference between both partners. The influence of the age difference is stronger if the woman is the older partner. Returning to our main topic, the inclusion of the basic control variables does not change the result on our key explanatory variable. Mothers in East Germany have a higher likelihood of separation.

In regression (3), we additionally include the variables for child care availability, working hours, commuting distance, and the woman's parents living with her. The variable for child care availability does not take a significant coefficient and most of the other additional variables also do not emerge as significant determinants. The dummy for East Germany remains a significantly positive determinant. Thus, we find also with respect to separations no evidence that availability of child care can explain the differences between East and West Germany.

By contrast, economic circumstances now appear to play a role in the differences between the two parts of Germany. As shown in column (4), the size and the significance of the coefficient on the dummy for East Germany wane when including the variables for the economic situation. Among these variables, unemployment of the partner, indebtedness of the household and the woman's own labor income emerge as significantly positive determinants of separation whereas house ownership is a significantly negative

determinant. All in all, this estimation suggests that the poor economic situation contributes to the higher rate of separations in East Germany.

However, regression (5) demonstrates that also cultural differences may explain East Germany's higher rate of separations. The specification of the regression adds a dummy for cohabitation to the basic set of control variables. Conforming to expectations, this variable turns out to be a significantly positive determinant of separation. The influence is quite substantial. Cohabitation is associated with a more than 2 percentage point higher probability of separation than marriage. Importantly, controlling for cohabitation renders the coefficient on the dummy for East Germany insignificant. This shows that the much higher frequency of cohabitation in East Germany also contributes to the higher rates of separation.

Finally, column (6) shows the regression results of a full specification that includes all explanatory variables. The coefficient on our key explanatory variable is again insignificant.

4.3. Determinants of Cohabitation

Altogether, the estimations shown in Table 4 suggest that both the poor economic situation and a higher propensity to form a cohabiting union can explain the higher rate of separations in East Germany. On the one hand, our background discussion suggests that cohabitation may reflect an alternative concept of love, partnership and family that relies to a lesser extent on formal commitments and provides more scope for egalitarian relationships between partners (Baxter 2001). In this sense, different propensities to form a cohabiting union can indicate cultural differences between East and West Germany. However, on the other hand, a higher propensity for cohabitation may simply reflect specific circumstances that lead couples to prefer household formation without marriage. For example, uncertainty about the quality of the match can make it more attractive to form a cohabiting union (Stevenson and Wolfers 2007). Such uncertainty should be higher if economic prospects are poor.

In order to examine this issue in more detail we estimate the determinants of cohabitation. Table 5 provides the results of a series of regressions with different specifications. The dependent variable is a dummy equal to 1 if the mother lives in cohabitation. It is equal to 0 if the mother is married.

Many of the control variables take significant coefficients. Residing in an urban area is associated with a higher probability of cohabitation. The number of children in the household and the woman's religiosity are negative determinants. The probability of cohabitation is higher for younger women. It is also higher if there are age differences between the partners. The effect is more pronounced if the woman is the older partner. While the woman's education is a negative determinant, the probability of cohabitation is higher if the woman is more educated than her partner. Actual working hours and the woman's labor income are positive determinants. Both own unemployment and the partner's unemployment increase the probability of cohabitation. Unemployment benefits received also play a role. While the woman's unemployment benefits are a positive determinant, the partner's unemployment benefits are a negative one. The woman's commuting distance and her partner's commuting distance play also opposite roles. Finally, indebtedness and house ownership are negative covariates of cohabitation.

Most importantly, the dummy for East Germany takes a significantly positive coefficient in all regressions. While the inclusion of the other explanatory variables to some extent entails a decrease in the size of the coefficient, the basic point remains that

mothers in East Germany have a higher probability of cohabitation even when controlling for other influences such as the economic situation. This is consistent with the view that the higher propensity for cohabitation in East Germany at least partially reflects different norms of love, partnership and family.

4.4. Robustness Checks

We performed a series of robustness checks that increased the confidence in the pattern of our results. We used alternative measures of the availability of child care. Instead of child care facilities divided by the number of children under age 6, we considered child care facilities divided by the number of children under age 3 and child care facilities divided by the number of children under age 14. These variables also did not emerge as significant determinants. Their inclusion did not change the basic pattern of results.

Furthermore, in the estimates on the determinants of out-of-partnership birth, we replaced the male unemployment rate by the average male earnings in the federal state. This exercise also confirmed our basic pattern of results.

We also experimented with alternative estimation methods. In particular, we applied the rare events logit developed by King and Zeng (2001a, 2001b) to take into account that the shares of observations with an out-of-partnership birth or a separation are rather small in our sample. Tables 6 and 7 provide the results. The results based on the rare events logit are very similar to those obtained by using the probit procedure.

For a further robustness check, we returned to the probit method and added women who have migrated between East and West Germany to the estimation sample. Thus, the variable for East Germany is equal to 1 if a woman is born in East Germany regardless of whether the woman lives in the Eastern or Western part of Germany. The pattern of key results remains unchanged. In Table 8, we present the results on the determinants of out-of-partnership birth, separation and cohabitation when using the full set of control variables. Including the control variables (specifically including the control variables for cohabitation and the economic situation), the coefficient on East Germany is insignificant. By contrast, the variable for East Germany remains significant in the estimations for out-of-partnership birth and cohabitation.

Finally, we examined if the results are influenced by panel attrition or panel refreshment. We excluded women from the analysis who dropped out from the survey or were part of the refreshment sample during the years 2006 to 2014. This exercise also confirmed our pattern of key results. Table 9 shows the regression results when including the full set of control variables.

5. Conclusions

East Germany has a substantially higher poverty rate than West Germany. Single parenthood has been widely identified as a main factor contributing to poverty (Corak et al. 2008). This suggests that it is particularly important to examine the circumstances that lead to the higher share of single mothers in East Germany.

Our study shows that both a higher likelihood of out-of-partnership birth and a higher likelihood of separation contribute to the higher share of single mothers in East Germany. Our estimates provide no evidence that the higher likelihood of out-of-partnership births can be explained by child care availability or economic circumstances. The estimates show that East German women have a significantly higher probability of

out-of-partnership birth even when including a rich set of control variables. The East-West difference in out-of-partnership births is consistent with the view that different norms of love, family and partnership have evolved in the two parts of the country. While our approach might be viewed as providing rather indirect evidence of different gender role models, we stress that our finding conforms to attitudinal surveys and labor supply studies showing that there are indeed more equal gender roles in East Germany.

Our analysis of separations also suggests that there are different norms of love, family and partnership in East and West Germany. The higher rate of separations in East Germany can be explained by a higher propensity for cohabitation. Cohabitation reflects a type of love and partnership that is based on less formal commitments than marriage and leaves more space for egalitarian relationships. Thus, the higher propensity for cohabitation also indicates a greater independence of women in East Germany even if they have children. This notion is supported by regressions showing that East German women with children have a higher propensity for cohabitation. This result holds even when including a rich set of controls.

However, our analysis of separations also shows that the poor economic circumstances in East Germany contribute to a higher rate of separations. Future research should examine in more detail whether the higher propensity for cohabitation or the poor economic situation is the main factor driving the higher rate of separations in East Germany. Finally, we note that our estimates provide no evidence that the higher rate of separations can be explained by child care availability.

Altogether, the findings of this study indicate that the share of single mothers in East Germany is to a large extent due to cultural factors and, thus, will only slowly converge to the share in West Germany. A convergence of the economic conditions in both parts of Germany may only partially lead to a decrease in the differences in single motherhood. To the extent cultural differences play an important role, we may observe a higher share of single mothers in East Germany also in the long run.

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Appendix: tables

Table 1: Variable definitions

Variable	Description
Out-of-partnership birth	Dummy equals 1 if a single woman has no child in the previous year and has a child in the actual year.
Separation	Dummy equals 1 if a mother separates from her husband or cohabiting partner in the actual year.
East Germany	Dummy equals 1 if the woman resides in East Germany and was born in East Germany before the fall of the Berlin Wall. The dummy equals 0 if the woman resides in West Germany and was born in West Germany before the fall of the Berlin Wall. Women who migrated from East to West Germany or from West to East Germany are excluded from the analysis.
East Germany (alternative definition)	Dummy equals 1 if the woman was born in East Germany before the fall of the Berlin Wall. The dummy equals 0 if the woman was born in West Germany before the fall of the Berlin Wall. Women who migrated from East to West Germany or from West to East Germany are included in the analysis.
Child care availability	Number of daycare facilities per children under age 6 at the federal state level.
Ln(child care availability)	Log of child care availability.
Woman's mother lives in household	Dummy equals 1 if the woman's mother lives in the woman's household.
Woman's father lives in household	Dummy equals 1 if the woman's father lives in the woman's household.
Actual working hours	Actual working hours per week including overtime. The variable is set equal to 0 if the woman does not work.
Woman's commuting distance	Daily commuting distance of the woman in kilometers. The variable is set equal to 0 if the woman does not commute.
Partner's commuting distance	Daily commuting distance of the partner in kilometers. The variable is set equal to 0 if the partner does not commute.
Woman's labor income	Monthly gross labor income of the woman. The variable is set equal to 0 if the woman does not work.
Woman unemployed	Dummy equals 1 if the woman is unemployed.
Woman's unemployment benefits	Monthly unemployment benefits of the woman. The variable is set equal to 0 if the woman is not unemployed.
Home ownership	Dummy equals 1 if the woman's household owns dwelling.
Indebtedness	Dummy equals 1 if the woman's household is in debt.
Partner's labor income	Monthly gross labor income of the partner. The variable is set equal to 0 if the partner does not work.
Partner unemployed	Dummy equals 1 if the woman's partner is unemployed.
Partner's unemployment benefits	Monthly unemployment benefits of the partner. The variable is set equal to 0 if the partner is not unemployed.
Ln(male unemployment rate)	Log of male unemployment rate at the federal state level.

Variable	Description
Cohabitation	Dummy equals 1 if the mother has a cohabiting partner. It equals 0 if she is married.
Health	Current health coded from 1 (bad) to 5 (very good).
18-29 years	Dummy equals 1 if the woman is 18 to 29 years old.
30-39 years	Dummy equals 1 if the woman is 30 to 39 years old.
Skilled	Dummy equals 1 if the woman's highest educational attainment is a completed apprenticeship training.
University degree	Dummy equals 1 if the woman has a university degree.
Urban area	Dummy equals 1 if the woman resides in an urban area.
Catholic	Dummy equals 1 if the woman is catholic.
Protestant	Dummy equals 1 if the woman is protestant.
Previous relationship	Dummy equals 1 if a single woman had a partner two years ago or earlier.
Number of children	Number of children under age 16 in the household.
Woman older	Age difference in years if the woman is older. The variable is set equal to 0 if the woman is not older than her partner.
Partner older	Age difference in years if the partner is older. The variable is set equal to 0 if the partner is not older than the woman.
Woman more educated	Educational difference in years of education if the woman is more educated. The variable is set equal to 0 if the woman is not more educated than her partner.
Partner more educated	Educational difference in years of education if the partner is more educated. The variable is set equal to 0 if the partner is not more educated than the woman.
Year dummies	Seven year dummies.

Source: SOEP data. The reference group for the age group dummies contains women aged 40 to 55 years (30 to 35 years) in the regressions on the determinants of separation (out-of-partnership birth). The reference group for the education dummies contains unskilled women. The reference group for the religion dummies contains women who have no catholic or protestant religious affiliation.

Table 2: Descriptive statistics

Variable	Estimation sample for the analysis of out-of-partnership births		Estimation sample for the analysis of separations	
	West Germany	East Germany	West Germany	East Germany
Out-of-partnership birth	0.007	0.028	---	---
Separation	---	---	0.016	0.022
Child care availability	0.012	0.016	0.012	0.016
Woman's mother lives in household	0.634	0.660	0.064	0.113
Woman's father lives in household	0.560	0.482	0.049	0.084
Actual working hours	26.838	23.512	16.669	27.218
Woman's commuting distance	15.485	15.004	8.309	11.359
Partner's commuting distance	---	---	20.899	31.693
Woman's labor income	1383.795	817.680	1060.015	1282.856
Woman unemployed	0.042	0.155	0.035	0.107
Woman's unemployment benefits	8.155	14.642	5.207	16.356
Home ownership	0.482	0.394	0.690	0.549
Indebtedness	0.329	0.418	0.648	0.629
Partner's labor income	---	---	3986.928	2328.690
Partner unemployed	---	---	0.033	0.103
Partner's unemployment benefits	---	---	13.173	31.046
Ln(male unemployment rate)	1.880	2.576	---	---
Cohabitation	---	---	0.065	0.264
Health	3.838	3.772	3.580	3.695
18-29 years	0.687	0.761	0.037	0.105
30-39 years	---	---	0.308	0.497
Skilled	0.575	0.636	0.647	0.585
University degree	0.277	0.186	0.280	0.375
Urban area	0.776	0.462	0.722	0.338
Catholic	0.437	0.019	0.453	0.059
Protestant	0.445	0.242	0.436	0.239
Previous relationship	0.156	0.136	---	---
Number of children	---	---	1.712	1.495
Woman older	---	---	0.463	0.443
Partner older	---	---	2.994	2.948
Woman more educated	---	---	0.745	0.845
Partner more educated	---	---	1.021	0.634
N	1,883	749	6,057	2,008

Source: SOEP data. The table shows the means of the variables.

Table 3: Determinants of out-of-partnership birth; method: probit

	(1)	(2)	(3)	(4)	(5)
East Germany	0.580 [0.022] (4.043)***	0.538 [0.018] (3.959)***	0.567 [0.016] (2.903)***	0.530 [0.015] (2.401)**	0.750 [0.025] (2.122)**
18-29 years	---	-0.001 [-3e-05] (0.008)	0.123 [0.003] (0.722)	0.002 [0.0001] (0.013)	0.128 [0.003] (0.731)
Skilled	---	-0.084 [-0.003] (0.411)	-0.102 [-0.003] (0.429)	-0.004 [-0.0001] (0.019)	-0.118 [-0.003] (0.494)
University degree	---	-0.052 [-0.002] (0.223)	-0.071 [-0.002] (0.257)	0.169 [0.005] (0.663)	-0.015 [-0.0004] (0.056)
Health	---	-0.086 [-0.003] (1.020)	-0.063 [-0.002] (0.730)	-0.075 [-0.002] (0.897)	-0.076 [-0.002] (0.869)
Urban area	---	-0.204 [-0.006] (1.421)	-0.287 [-0.008] (1.758)*	-0.317 [-0.009] (2.026)**	-0.269 [-0.007] (1.665)*
Previous relationship	---	0.205 [0.006] (1.045)	-0.001 [-4e-05] (0.006)	0.186 [0.005] (0.835)	-0.008 [-0.0002] (0.035)
Actual working hours	---	---	-0.014 [-0.0004] (2.444)**	---	-0.008 [-0.0002] (1.003)
Ln(child care availability)	---	---	-0.391 [-0.011] (0.710)	---	-0.262 [-0.007] (0.422)
Woman's mother lives in household	---	---	-0.268 [-0.007] (1.621)	---	-0.315 [-0.008] (1.958)*
Woman's father lives in household	---	---	-0.695 [-0.019] (3.043)***	---	-0.731 [-0.019] (2.950)***
Commuting distance	---	---	0.028 [0.001] (3.077)***	---	0.034 [0.001] (3.398)***
Commuting distance squared	---	---	-0.0003 [-1e-05] (3.246)***	---	-0.0004 [-1e-05] (3.413)***
Labor income	---	---	---	-0.0001 [-4e-06] (1.133)	-0.0002 [-5e-06] (1.132)

	(1)	(2)	(3)	(4)	(5)
Labor income squared	---	---	---	1.9e-08 [1e-09] (1.408)	3.8e-08 [9e-10] (1.833)*
Unemployed	---	---	---	0.291 [0.008] (1.379)	0.129 [0.003] (0.551)
Ln(male unemployment rate)	---	---	---	-0.026 [-0.001] (0.096)	-0.174 [-0.005] (0.552)
Unemployment benefits	---	---	---	0.004 [0.0001] (1.401)	0.005 [0.0001] (1.638)
Unemployment benefits squared	---	---	---	-5.3e-06 [-1e-07] (1.053)	-6.3e-06 [-1e-07] (1.223)
Home ownership	---	---	---	-0.110 [-0.003] (0.700)	0.293 [0.008] (1.663)*
Indebtedness	---	---	---	-0.489 [-0.013] (2.662)***	-0.552 [-0.014] (3.004)***
Catholic	---	---	---	---	0.003 [0.0001] (0.011)
Protestant	---	---	---	---	0.106 [0.003] (0.493)
Constant	-2.491 (22.694)***	-5.627 (14.609)***	-7.801 (3.174)***	-6.405 (8.087)***	-7.173 (2.654)***
Year dummies	---	Included	Included	Included	Included
Pseudo R ²	0.050	0.099	0.191	0.159	0.233
N	2,632	2,632	2,632	2,632	2,632

Source: SOEP data. The table shows the estimated coefficients. Z-statistics are in parentheses. Standard errors are clustered by federal state and year of observation. Marginal effects are in square brackets. Marginal effects of dummy variables are evaluated for a discrete change from 0 to 1. Marginal effects of the education dummies and religion dummies are changes in probability compared to the respective reference group. *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level.

Table 4: Determinants of separation; method: probit

	(1)	(2)	(3)	(4)	(5)	(6)
East Germany	0.138 [0.006] (2.088)**	0.145 [0.007] (2.188)**	0.168 [0.007] (2.142)**	0.052 [0.002] (0.708)	0.006 [0.0003] (0.087)	-0.125 [-0.005] (1.155)
18-29 years	---	0.476 [0.020] (3.439)***	0.508 [0.021] (3.645)***	0.386 [0.016] (2.504)**	0.289 [0.012] (2.067)**	0.249 [0.010] (1.600)
30-39 years	---	0.177 [0.007] (2.083)**	0.190 [0.008] (2.217)**	0.154 [0.006] (1.763)*	0.109 [0.004] (1.238)	0.107 [0.004] (1.196)
Skilled	---	-0.246 [-0.010] (2.137)**	-0.260 [-0.011] (2.270)**	-0.149 [-0.006] (1.179)	-0.191 [-0.008] (1.662)*	-0.112 [-0.004] (0.890)
University degree	---	-0.330 [-0.014] (2.718)***	-0.352 [-0.015] (2.934)***	-0.222 [-0.009] (1.572)	-0.247 [-0.010] (2.018)**	-0.149 [-0.006] (1.045)
Number of children	---	0.021 [0.001] (0.493)	0.040 [0.002] (0.891)	0.025 [0.001] (0.567)	0.055 [0.002] (1.266)	0.064 [0.003] (1.412)
Health	---	-0.102 [-0.004] (2.626)***	-0.100 [-0.004] (2.572)**	-0.093 [-0.004] (2.374)**	-0.101 [-0.004] (2.576)***	-0.089 [-0.004] (2.271)**
Urban area	---	0.107 [0.004] (1.470)	0.093 [0.004] (1.201)	0.085 [0.003] (1.136)	0.069 [0.003] (0.934)	0.033 [0.001] (0.424)
Woman older	---	0.067 [0.003] (4.221)***	0.068 [0.003] (4.268)***	0.056 [0.002] (3.437)***	0.051 [0.002] (2.676)***	0.045 [0.002] (2.310)**
Partner older	---	0.020 [0.001] (2.066)**	0.019 [0.001] (1.957)*	0.016 [0.001] (1.700)*	0.017 [0.001] (1.789)*	0.014 [0.001] (1.457)
Woman more educated	---	0.016 [0.001] (0.734)	0.016 [0.001] (0.723)	0.014 [0.001] (0.629)	0.009 [0.0004] (0.387)	0.007 [0.0003] (0.278)
Partner more educated	---	-0.032 [-0.001] (1.450)	-0.026 [-0.001] (1.174)	-0.016 [-0.001] (0.632)	-0.033 [-0.001] (1.459)	-0.016 [-0.0006] (0.648)
Actual working hours	---	---	0.002 [0.0001] (0.869)	---	---	-0.001 [-3.7e-05] (0.288)
Ln(child care availability)	---	---	-0.302 [-0.013] (1.066)	---	---	-0.342 [-0.014] (1.193)
Woman's mother lives in household	---	---	0.296 [0.012] (1.709)*	---	---	0.297 [0.012] (1.655)*
Woman's father lives in household	---	---	-0.296 [-0.012] (1.517)	---	---	-0.244 [-0.010] (1.198)
Woman's commuting distance	---	---	0.002 [0.0001] (1.196)	---	---	0.002 [0.0001] (0.951)

	(1)	(2)	(3)	(4)	(5)	(6)
Partner's commuting distance	---	---	-0.001 [-2.8e-05] (0.742)	---	---	-0.0004 [-1e-05] (0.451)
Woman's labor income	---	---	---	0.0001 [2.6e-06] (2.089)**	---	0.0001 [2.1e-06] (1.162)
Partner's labor income	---	---	---	-1.9e-05 [-7e-07] (0.845)	---	-2.1e-05 [-8e-07] (0.995)
Woman unemployed	---	---	---	0.135 [0.006] (0.796)	---	0.093 [0.004] (0.542)
Partner unemployed	---	---	---	0.376 [0.016] (2.694)***	---	0.305 [0.012] (2.239)**
Woman's unemployment benefits	---	---	---	0.0003 [1.2e-05] (0.436)	---	0.0002 [8.0e-06] (0.307)
Partner's unemployment benefits	---	---	---	-0.0003 [-1e-05] (1.543)	---	-0.0003 [-1e-05] (1.564)
Home ownership	---	---	---	-0.175 [-0.007] (2.059)**	---	-0.121 [-0.005] (1.360)
Indebtedness	---	---	---	0.137 [0.006] (1.954)*	---	0.172 [0.007] (2.440)**
Cohabitation	---	---	---	---	0.554 [0.023] (4.806)***	0.496 [0.020] (4.053)***
Catholic	---	---	---	---	---	-0.218 [-0.009] (1.984)**
Protestant	---	---	---	---	---	-0.149 [-0.006] (1.407)
Constant	-2.144 (61.684)***	-1.959 (9.738)***	-3.383 (2.691)***	-2.072 (9.522)***	-2.068 (10.367)***	-3.585 (2.826)***
Year dummies	---	Included	Included	Included	Included	Included
Pseudo R ²	0.002	0.042	0.047	0.059	0.067	0.084
N	8,065	8,065	8,065	8,065	8,065	8,065

Source: SOEP data. The table shows the estimated coefficients. Z-statistics are in parentheses. Standard errors are clustered by federal state and year of observation. Marginal effects are in square brackets. Marginal effects of dummy variables are evaluated for a discrete change from 0 to 1. Marginal effects of the age dummies, education dummies, and religion dummies are changes in probability compared to the respective reference group. *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level.

Table 5: Determinants of cohabitation; method: probit

	(1)	(2)	(3)	(4)	(5)
East Germany	0.881 [0.199] (22.155)***	0.877 [0.168] (20.404)***	0.793 [0.121] (16.102)***	0.773 [0.111] (17.027)***	0.506 [0.081] (7.226)***
18-29 years	---	1.133 [0.174] (13.319)***	1.216 [0.185] (14.118)***	0.905 [0.131] (9.768)***	0.958 [0.136] (10.019)***
30-39 years	---	0.511 [0.079] (11.259)***	0.548 [0.083] (12.180)***	0.425 [0.061] (8.689)***	0.454 [0.065] (9.226)***
Skilled	---	-0.361 [-0.055] (5.426)***	-0.395 [-0.060] (5.823)***	-0.159 [-0.023] (2.336)**	-0.160 [-0.023] (2.310)**
University degree	---	-0.575 [-0.088] (7.506)***	-0.625 [-0.095] (8.245)***	-0.366 [-0.053] (4.189)***	-0.320 [-0.045] (3.623)***
Number of children	---	-0.329 [-0.051] (8.822)***	-0.298 [-0.045] (8.469)***	-0.282 [-0.041] (7.291)***	-0.253 [-0.036] (6.787)***
Health	---	0.016 [0.002] (0.554)	0.012 [0.002] (0.417)	0.021 [0.003] (0.732)	0.024 [0.003] (0.842)
Urban area	---	0.327 [0.050] (7.468)***	0.340 [0.052] (7.279)***	0.229 [0.033] (5.145)***	0.242 [0.034] (5.057)***
Woman older	---	0.142 [0.022] (13.802)***	0.143 [0.022] (14.233)***	0.122 [0.018] (11.449)***	0.121 [0.017] (11.486)***
Partner older	---	0.014 [0.002] (2.586)***	0.011 [0.002] (1.910)*	0.015 [0.002] (2.610)***	0.012 [0.002] (2.082)**
Woman more educated	---	0.046 [0.007] (3.253)***	0.044 [0.007] (3.102)***	0.051 [0.007] (3.682)***	0.049 [0.007] (3.419)***
Partner more educated	---	-0.038 [-0.006] (2.652)***	-0.030 [-0.005] (2.184)**	-0.020 [-0.003] (1.340)	-0.014 [-0.002] (0.990)
Actual working hours	---	---	0.006 [0.001] (4.375)***	---	0.011 [0.002] (5.598)***
Ln(child care availability)	---	---	0.202 [0.031] (1.304)	---	0.248 [0.035] (1.498)
Woman's mother lives in household	---	---	0.176 [0.027] (1.761)*	---	0.278 [0.040] (2.391)**
Woman's father lives in household	---	---	-0.131 [-0.020] (1.145)	---	-0.177 [-0.025] (1.404)
Woman's commuting distance	---	---	0.001 [0.0002] (1.376)	---	0.002 [0.0003] (2.015)**

	(1)	(2)	(3)	(4)	(5)
Partner's commuting distance	---	---	-0.001 [-0.0002] (2.516)**	---	-0.001 [-0.0001] (2.015)**
Woman's labor income	---	---	---	0.0001 [1e-05] (5.045)***	-3e-05 [-4e-06] (0.887)
Partner's labor income	---	---	---	-2e-05 [-3e-06] (1.590)	-1e-05 [-2e-06] (1.028)
Woman unemployed	---	---	---	0.131 [0.019] (1.404)	0.263 [0.037] (2.692)***
Partner unemployed	---	---	---	0.418 [0.060] (4.845)***	0.402 [0.057] (4.724)***
Woman's unemployment benefits	---	---	---	0.001 [0.0001] (1.909)*	0.001 [0.0001] (1.938)*
Partner's unemployment benefits	---	---	---	-0.0002 [-3e-05] (1.992)**	-0.0002 [-3e-05] (1.907)*
Home ownership	---	---	---	-0.553 [-0.080] (11.582)***	-0.544 [-0.077] (11.549)***
Indebtedness	---	---	---	-0.126 [-0.018] (2.678)***	-0.141 [-0.020] (3.002)***
Catholic	---	---	---	---	-0.268 [-0.038] (3.762)***
Protestant	---	---	---	---	-0.172 [-0.024] (2.411)**
Constant	-1.511 (53.174)***	-1.315 (8.128)***	-0.541 (0.785)	-1.176 (7.075)***	-0.081 (0.110)
Year dummies	---	Included	Included	Included	Included
Pseudo R ²	0.089	0.213	0.221	0.262	0.273
N	8,065	8,065	8,065	8,065	8,065

Source: SOEP data. The table shows the estimated coefficients. Z-statistics are in parentheses. Standard errors are clustered by federal state and year of observation. Marginal effects are in square brackets. Marginal effects of dummy variables are evaluated for a discrete change from 0 to 1. Marginal effects of the age dummies, education dummies, and religion dummies are changes in probability compared to the respective reference group. *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level.

Table 6: Determinants of out-of-partnership birth; method: rare events logit

	(1)	(2)	(3)	(4)	(5)
East Germany	1.485 (3.913)***	1.339 (3.638)***	1.413 (3.020)***	1.234 (2.133)**	1.828 (2.124)**
18-29 years	---	-0.170 (0.434)	0.006 (0.014)	-0.107 (0.225)	0.065 (0.138)
Skilled	---	-0.306 (0.606)	-0.327 (0.598)	-0.060 (0.117)	-0.329 (0.609)
University degree	---	-0.115 (0.199)	-0.156 (0.237)	0.371 (0.586)	-0.038 (0.060)
Health	---	-0.215 (1.006)	-0.176 (0.844)	-0.199 (0.953)	-0.177 (0.820)
Urban area	---	-0.502 (1.385)	-0.641 (1.649)*	-0.709 (1.878)*	-0.579 (1.478)
Previous relationship	---	0.603 (1.259)	-0.027 (0.053)	0.506 (0.906)	-0.001 (0.001)
Actual working hours	---	---	-0.030 (2.287)**	---	-0.007 (0.324)
Ln(child care availability)	---	---	-1.102 (0.812)	---	-1.181 (0.743)
Woman's mother lives in household	---	---	-0.645 (1.577)	---	-0.719 (1.772)*
Woman's father lives in household	---	---	-1.689 (2.674)***	---	-1.680 (2.503)**
Commuting distance	---	---	0.054 (2.336)**	---	0.068 (2.895)***
Commuting distance squared	---	---	-0.001 (1.927)*	---	-0.001 (2.404)**
Labor income	---	---	---	-0.001 (1.531)	-0.001 (1.722)*

	(1)	(2)	(3)	(4)	(5)
Labor income squared	---	---	---	1.13e-07 (3.096)***	1.69e-07 (3.439)***
Unemployed	---	---	---	0.658 (1.332)	0.374 (0.676)
Ln(male unemployment rate)	---	---	---	-0.112 (0.162)	-0.546 (0.641)
Unemployment benefits	---	---	---	0.005 (0.825)	0.007 (0.988)
Unemployment benefits squared	---	---	---	-4.36e-06 (0.413)	-7.56e-06 (0.584)
Home ownership	---	---	---	-0.212 (0.490)	0.671 (1.492)
Indebtedness	---	---	---	-1.111 (2.217)**	-1.092 (2.104)**
Catholic	---	---	---	---	-0.002 (-0.003)
Protestant	---	---	---	---	0.304 (0.619)
Constant	-5.008 (16.122)***	-4.363 (3.900)***	-7.891 (1.304)	-3.706 (2.235)**	-7.616 (1.135)
Year dummies	---	Included	Included	Included	Included
N	2,632	2,632	2,632	2,632	2,632

Source: SOEP data. The table shows the estimated coefficients. Z-statistics are in parentheses. Standard errors are clustered by federal state and year of observation. *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level.

Table 7: Determinants of separation; method: rare events logit

	(1)	(2)	(3)	(4)	(5)	(6)
East Germany	0.348 (2.144)**	0.318 (1.968)**	0.385 (2.066)**	0.069 (0.385)	-0.065 (0.355)	-0.361 (1.375)
18-29 years	---	1.160 (3.611)***	1.245 (3.827)***	0.952 (2.720)***	0.703 (2.140)**	0.642 (1.817)*
30-39 years	---	0.463 (2.173)**	0.492 (2.320)**	0.386 (1.804)*	0.302 (1.406)	0.277 (1.290)
Skilled	---	-0.558 (2.023)**	-0.603 (2.218)**	-0.302 (0.996)	-0.437 (-1.599)	-0.221 (0.711)
University degree	---	-0.779 (2.609)***	-0.837 (2.890)***	-0.473 (1.369)	-0.577 (-1.911)*	-0.305 (0.840)
Number of children	---	0.053 (0.535)	0.098 (0.933)	0.070 (0.681)	0.139 (1.397)	0.160 (1.528)
Health	---	-0.248 (2.639)***	-0.243 (2.583)***	-0.229 (2.396)**	-0.251 (-2.641)***	-0.221 (2.333)**
Urban area	---	0.221 (1.214)	0.173 (0.888)	0.180 (0.983)	0.104 (0.561)	0.022 (0.113)
Woman older	---	0.162 (4.680)***	0.165 (4.822)***	0.138 (3.964)***	0.118 (2.667)***	0.108 (2.364)**
Partner older	---	0.050 (2.193)**	0.044 (1.948)*	0.041 (1.868)*	0.045 (1.976)**	0.033 (1.440)
Woman more educated	---	0.046 (0.826)	0.044 (0.797)	0.039 (0.677)	0.028 (0.480)	0.024 (0.390)
Partner more educated	---	-0.072 (1.262)	-0.059 (1.034)	-0.028 (0.440)	-0.068 (-1.170)	-0.031 (0.485)
Actual working hours	---	---	0.005 (0.912)	---	---	-0.002 (0.216)
Ln(child care availability)	---	---	-0.871 (1.256)	---	---	-0.946 (1.350)
Woman's mother lives in household	---	---	0.742 (1.821)*	---	---	0.646 (1.498)
Woman's father lives in household	---	---	-0.645 (1.382)	---	---	-0.484 (1.006)
Woman's commuting distance	---	---	0.005 (1.403)	---	---	0.005 (1.187)

	(1)	(2)	(3)	(4)	(5)	(6)
Partner's commuting distance	---	---	-0.001 (0.417)	---	---	-0.0003 (0.139)
Woman's labor income	---	---	---	0.0001 (2.255)**	---	0.0001 (1.216)
Partner's labor income	---	---	---	-0.0001 (0.968)	---	-0.0001 (0.964)
Woman unemployed	---	---	---	0.316 (0.779)	---	0.293 (0.716)
Partner unemployed	---	---	---	0.770 (2.445)**	---	0.602 (1.956)*
Woman's unemployment benefits	---	---	---	0.001 (0.542)	---	0.001 (0.433)
Partner's unemployment benefits	---	---	---	-0.0004 (0.960)	---	-0.0004 (0.844)
Home ownership	---	---	---	-0.418 (1.965)**	---	-0.256 (1.145)
Indebtedness	---	---	---	0.302 (1.706)*	---	0.367 (2.055)**
Cohabitation	---	---	---	---	1.311 (4.726)***	1.137 (3.816)***
Catholic	---	---	---	---	---	-0.528 (1.934)*
Protestant	---	---	---	---	---	-0.346 (1.327)
Constant	-4.113 (46.560)***	-3.675 (7.457)***	-7.732 (2.506)**	-3.906 (7.341)***	-3.898 (8.096)***	-8.091 (2.580)***
Year dummies	---	Included	Included	Included	Included	Included
N	8,065	8,065	8,065	8,065	8,065	8,065

Source: SOEP data. The table shows the estimated coefficients. Z-statistics are in parentheses. Standard errors are clustered by federal state and year of observation. *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level.

Table 8: Robustness check; alternative definition of East Germany; method: probit

	(1) Out-of-partnership birth	(2) Separation	(3) Cohabitation
East Germany (alternative definition)	0.732 [0.025] (2.190)**	-0.047 [-0.002] (0.502)	0.472 [0.077] (7.618)***
18-29 years	0.086 [0.002] (0.546)	0.162 [0.006] (1.067)	0.919 [0.135] (10.004)***
30-39 years	---	0.070 [0.003] (0.800)	0.412 [0.060] (8.773)***
Skilled	-0.079 [-0.002] (0.349)	-0.106 [-0.004] (0.862)	-0.138 [-0.020] (1.981)**
University degree	0.058 [0.001] (0.234)	-0.149 [-0.006] (1.096)	-0.200 [-0.029] (2.226)**
Number of children	---	0.060 [0.002] (1.383)	-0.240 [-0.035] (6.678)***
Health	-0.096 [-0.002] (1.164)	-0.103 [-0.004] (2.738)***	0.022 [0.003] (0.798)
Urban area	-0.231 [-0.006] (1.505)	0.026 [0.001] (0.345)	0.200 [0.029] (4.313)***
Previous relationship	0.085 [0.002] (0.419)	---	---
Woman older	---	0.039 [0.002] (2.014)**	0.119 [0.017] (11.888)***
Partner older	---	0.013 [0.001] (1.484)	0.020 [0.003] (3.819)***
Woman more educated	---	0.013 [0.001] (0.578)	0.049 [0.007] (3.720)***
Partner more educated	---	-0.015 [-0.001] (0.628)	-0.010 [-0.001] (0.709)

	(1) Out-of-partnership birth	(2) Separation	(3) Cohabitation
Actual working hours	-0.008 [-0.0002] (1.065)	-0.001 [-0.0004] (0.288)	0.012 [0.002] (6.021)***
Ln(child care availability)	-0.173 [-0.004] (0.292)	-0.330 [-0.013] (1.118)	0.341 [0.050] (2.105)**
Woman's mother lives in household	-0.257 [-0.007] (1.596)	0.243 [0.010] (1.358)	0.236 [0.035] (2.104)**
Woman's father lives in household	-0.657 [-0.017] (2.687)***	-0.197 [-0.008] (0.959)	-0.175 [-0.026] (1.469)
Woman's commuting distance	0.024 [0.001] (3.398)***	0.002 [0.0001] (2.055)**	0.001 [0.0001] (1.398)
Woman's commuting distance squared	-0.0003 [-1e-05] (2.112)**	---	---
Partner's commuting distance	---	-0.0004 [-1.7e-05] (0.520)	-0.001 [-0.0001] (1.982)**
Woman's labor income	-0.0001 [-2.9e-06] (0.634)	0.0001 [2.4e-06] (1.475)	-5.6e-05 [-4e-06] (1.240)
Woman's labor income squared	2.9e-08 [7.3e-10] (1.632)	---	---
Partner's labor income	---	-1.7e-05 [-6.8e-07] (0.869)	-3.5e-05 [-2e-06] (1.916)*
Woman unemployed	0.187 [0.005] (0.833)	0.107 [0.004] (0.653)	0.281 [0.041] (2.972)***
Partner unemployed	---	0.309 [0.012] (2.355)**	0.342 [0.050] (4.451)***
Ln(male unemployment rate)	-0.064 [-0.002] (0.197)	---	---
Woman's unemployment benefits	0.003 [0.0001] (1.373)	0.0001 [5.7e-06] (0.252)	0.0003 [0.0001] (1.379)

	(1) Out-of-partnership birth	(2) Separation	(3) Cohabitation
Woman's unemployment benefits squared	-4.5e-06 [-7.5e-06] (1.056)	---	---
Partner's unemployment benefits	---	-0.0003 [-1.4e-05] (1.692)*	-0.0002 [-3.4e-05] (2.015)**
Home ownership	0.238 [0.006] (1.349)	-0.167 [-0.007] (1.914)*	-0.526 [-0.077] (11.296)***
Indebtedness	-0.396 [-0.010] (2.141)***	0.182 [0.007] (2.727)***	-0.122 [-0.018] (2.591)***
Cohabitation	---	0.520 [0.021] (4.620)***	---
Catholic	0.127 [0.003] (0.469)	-0.121 [-0.005] (1.238)	-0.248 [-0.036] (3.877)***
Protestant	0.244 [0.006] (1.356)	-0.076 [-0.003] (0.802)	-0.148 [-0.022] (2.295)**
Constant	-2.619 (1.044)***	-3.572 (2.746)***	0.324 (0.446)
Year dummies	Included	Included	Included
Pseudo R ²	0.194	0.086	0.256
N	2,898	8,612	8,612

Source: SOEP data. The table shows the estimated coefficients. Z-statistics are in parentheses. Standard errors are clustered by federal state and year of observation. Marginal effects are in square brackets. Marginal effects of dummy variables are evaluated for a discrete change from 0 to 1. Marginal effects of the age dummies, education dummies, and religion dummies are changes in probability compared to the respective reference group. *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level.

Table 9: Robustness check; controlling for panel attrition and panel refreshment; method: probit

	(1) Out-of-partnership birth	(2) Separation	(3) Cohabitation
East Germany	1.073 [0.034] (2.092)**	0.107 [0.004] (0.906)	0.557 [0.075] (8.125)***
18-29 years	-0.001 [-1.7e-05] (0.004)	0.256 [0.009] (1.268)	1.011 [0.137] (10.092)***
30-39 years	---	0.102 [0.004] (0.859)	0.487 [0.066] (8.416)***
Skilled	-0.318 [-0.007] (1.047)	-0.287 [-0.011] (1.961)**	-0.279 [-0.038] (2.754)***
University degree	-0.180 [-0.004] (0.567)	-0.319 [-0.012] (1.981)**	-0.289 [-0.039] (2.465)**
Number of children	---	0.061 [0.002] (1.239)	-0.251 [-0.034] (6.433)***
Health	-0.089 [-0.002] (0.850)	-0.077 [-0.003] (1.515)	0.085 [0.012] (2.184)**
Urban area	0.001 [1.1e-05] (0.002)	0.192 [0.007] (1.815)*	0.323 [0.044] (6.401)***
Previous relationship	-0.061 [-0.001] (0.216)	---	---
Woman older	---	0.059 [0.002] (2.816)***	0.146 [0.020] (11.675)***
Partner older	---	-0.003 [-0.0001] (0.28)	0.015 [0.002] (1.975)**
Woman more educated	---	0.015 [0.001] (0.581)	0.047 [0.006] (3.694)***
Partner more educated	---	0.001 [3.0e-05] (0.029)	-0.022 [-0.003] (1.458)

	(1) Out-of-partnership birth	(2) Separation	(3) Cohabitation
Actual working hours	-0.013 [-0.0003] (0.864)	0.0001 [4.3e-06] (0.036)	0.013 [0.002] (4.758)***
Ln(child care availability)	-0.582 [-0.012] (0.571)	-0.339 [-0.012] (0.896)	-0.020 [-0.003] (0.104)
Woman's mother lives in household	-0.002 [-4.1e-05] (1.958)*	0.465 [0.017] (2.369)**	0.109 [0.015] (0.785)**
Woman's father lives in household	-0.599 [-0.013] (1.872)*	-0.420 [-0.015] (1.770)*	0.072 [0.010] (0.499)
Woman's commuting distance	0.042 [0.001] (1.455)	0.001 [4.1e-05] (0.648)	-0.0001 [-8.1e-06] (0.073)
Woman's commuting distance squared	-0.001 [-2.1e-05] (1.547)	---	---
Partner's commuting distance	---	-1.5e-05 [-5.4e-07] (0.021)	-0.001 [-0.0001] (1.705)*
Woman's labor income	-0.0001 [-2.7e-06] (0.329)	0.0001 [2.1e-06] (1.038)	-0.0001 [-9.1e-06] (1.569)
Woman's labor income squared	2.7e-08 [5.6e-10] (0.691)	---	---
Partner's labor income	---	-1.7e-05 [-6.2e-07] (0.633)	-1.1e-05 [-1.4e-06] (0.709)
Woman unemployed	-0.124 [-0.003] (0.352)	0.138 [0.005] (0.616)	0.099 [0.013] (0.790)
Partner unemployed	---	0.392 [0.014] (1.993)**	0.428 [0.058] (3.845)***
Ln(male unemployment rate)	-0.394 [-0.008] (0.852)	---	---
Woman's unemployment benefits	0.010 [0.0002] (1.938)*	-0.0002 [6.8e-06] (0.255)	0.001 [0.0001] (1.792)*

	(1) Out-of-partnership birth	(2) Separation	(3) Cohabitation
Woman's unemployment benefits squared	-1.7e-05 [-3.6e-07] (2.018)**	---	---
Partner's unemployment benefits	---	-0.0004 [-1.6e-05] (1.409)	-0.0003 [-3.4e-05] (1.478)
Home ownership	-0.245 [-0.005] (0.823)	-0.130 [-0.005] (1.324)	-0.521 [-0.070] (9.526)***
Indebtedness	-0.055 [-0.001] (0.221)	0.278 [0.010] (3.337)***	-0.123 [-0.017] (1.950)*
Cohabitation	---	0.473 [0.017] (4.262)***	---
Catholic	0.004 [0.0001] (0.018)	0.040 [0.001] (0.316)	-0.300 [-0.041] (4.001)***
Protestant	0.262 [0.005] (1.179)	-0.014 [-0.001] (0.112)	-0.242 [-0.033] (3.076)***
Constant	-3.728 (0.899)	-3.889 (2.301)**	-1.526 (1.841)*
Year dummies	Included	Included	Included
Pseudo R ²	0.210	0.102	0.279
N	1,478	5,958	5,958

Source: SOEP data. The table shows the estimated coefficients. Z-statistics are in parentheses. Standard errors are clustered by federal state and year of observation. Marginal effects are in square brackets. Marginal effects of dummy variables are evaluated for a discrete change from 0 to 1. Marginal effects of the age dummies, education dummies, and religion dummies are changes in probability compared to the respective reference group. *** Statistically significant at the 1% level; ** at the 5% level; * at the 10% level.