# Trends in the Stability of Marital and Cohabiting Unions with Children

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**Abstract.** The share of births to cohabiting couples has increased dramatically in recent decades. The stability of these families provides critical insight into the process of family change and its potential implications for the well-being of parents and children. We use data from the 1995 and 2006-10 NSFG to: 1) describe change in the characteristics of unions with children over time; 2) compare changes in the stability of cohabiting and marital unions, net of changes in the composition of unions; and 3) run a set of simulations to flesh out the implications of our models. We find a striking shift from marital to cohabiting unions with children over time, and declines in the transition from cohabitation to marriage after the birth of a couple's first child. Despite the movement away from marriage and the higher risk of separation among cohabiting couples, the overall level of union stability remains virtually unchanged from 1985-95 to 1997-2010. We find that offsetting compositional changes and estimated associations with union stability yield on net little change in the context of union stability for children over time.

The share of births to unmarried women has almost doubled over the past 25 years: from 22% in 1985 to 41% in 2009 (Martin et al. 2011). The shift from marital to cohabiting births accounts for much of the increase over this period, particularly in the past decade (Kennedy and Bumpass 2011; Martinez, Chandra, and Daniels 2012; Raley 2001). As of the mid-2000s, 62% of births to unmarried mothers—or 22% of all births—were to cohabiting parents (Kennedy and Bumpass 2011, Table 6). How we evaluate the implications of these changes for child well-being depends on our understanding of cohabitation as a normative setting for having and raising children, which in turn depends critically on the stability of cohabiting families for children.

From the perspective of children, living with two cohabiting parents in many ways resembles living with two married parents, with two potential earners and care-takers in the household to provide and care for their children. But family transitions are negatively associated with child well-being (Fomby and Cherlin 2007; Wu 1996; Wu and Martinson 1993), and cohabiting unions are on average significantly less stable than marriages (Manning, Smock, and Majumdar 2004; Wu and Musick 2008). Children living with a cohabiting mother express greater ambiguity about their families, as reflected in differences in their reports of family structure as compared to their mothers' (Brown and Manning 2009). Children in cohabiting families also tend to exhibit elevated behavioral and emotional problems and less engagement with school than those in married-parent families (Brown 2004). Thus while the living arrangements of cohabiting and married-parent families may be similar, evidence points to differences in who selects into these arrangements and in what they mean to the families involved.

Given the shift from marital to cohabiting births, the relative instability of cohabitation, and the links between family transitions and child well-being, trends in the stability of cohabiting

families provide critical insight into the process of family change and its potential implications for the well-being of family members. The relative stability of marriage and cohabitation also speak to broader discussions about the changing role of cohabitation in the family system. From the perspective of the second demographic transition theory, cohabiting families should become more normative and look increasingly like marriage, for example, in their chances of staying together (van de Kaa 1987). A contrasting view frames cohabitation as a second-best alternative when marriage's steep emotional and financial prerequisites cannot be met (Cherlin 2009; Furstenberg 19996), suggesting growing differences between cohabitation and the increasingly privileged state of marriage.

We draw on data from the 1995 and 2006-10 National Survey of Family Growth (NSFG) to examine trends in the stability of marital and cohabiting unions with children from about 1990 to the mid-2000s. We compare union stability as measured from the time of the couples' first birth in marriage or cohabitation, and we pay close attention to union-birth trajectories, that is, to how couples move from cohabitation to marriage (or not) in the time around their first birth. Our analysis has three steps. First, we describe change in the characteristics of unions with children over time, looking both at the shifting sociodemographic composition of these unions and patterns of change in union transitions following a birth. Second, we use discrete-time event history analysis to compare changes in the stability of cohabiting and marital unions, net of changes in the composition of unions, for example, the respondent's education, age at birth, and prior childbearing and union experiences. Third, we run a set of simulations to flesh out the implications of our models, generating predicted probabilities of union dissolution altering assumptions about union formation and change in the composition of unions over time.

**BACKGROUND**

**Why might we expect changes in the stability of cohabitation over time?**

In analyzing patterns of family change across Europe, Kiernan (2000) posited a series of stages in the second demographic transition, with cohabitation emerging as a marginalized behavior and gradually becoming an accepted family form. Along the way, distinctions between cohabitation and marriage fade, and cohabitation transitions from a short-term and largely childless state to a much more stable arrangement in which having and raising children is commonplace. Predictions based on the second demographic transition are consistent with Cherlin's (2004) deinstitutionalization hypothesis, although the mechanisms differ. Cherlin argues that marriage is undergoing a process of deinstitutionalization while the social norms defining partners' behavior in cohabitation are becoming stronger, implying blurring boundaries between the two. The process of deinstitutionalization implies convergence in expectations around marriage and cohabitation, leading to growing similarity in childbearing behavior and relationship stability.

An opposing view suggests persistent differences and potentially divergence in the experiences of marriage and cohabitation. This draws more heavily on ideas emphasizing the growing symbolic significance of marriage as a marker of prestige (Cherlin 2009). Qualitative and quantitative accounts report that men and women of all education levels place a high value on marriage but perceive substantial economic prerequisites (Carlson et al. 2004; Edin and Kefalas 2005; Gibson-Davis 2009; Gibson-Davis, Edin, and McLanahan 2005; Smock, Manning, and Porter, 2005). Short of these prerequisites, couples opt into cohabitation, and cohabitation thus becomes the "budget" route into family formation (Furstenberg 1996). This is consistent with McLanahan's (2004) discussion of the differential impact of the second demographic

3

transition on women, with associated economic and ideational changes undermining stable

relationships for women at the bottom of the education distribution and strengthening them for

women at the top.  In their cross-national investigation of cohabiting fertility, Perelli-Harris et al.

(2010) emphasize the link between economic instability and the impermanence of cohabitation.

Together, these strands of research suggest that despite increases in cohabiting fertility, the

experiences of marital and cohabiting families may remain distinct – and potentially even

diverge over time.  In particular, cohabitation may remain a less stable union form, and

potentially less stable over time relative to marriage.

**What has recent data shown?**

In assessing change over the 1980s and early 1990s, Bumpass and Lu (2000) found that

cohabitation had become increasingly short-lived over time.  This trend has potentially stalled or

even reversed.  In a recent analysis of the 2006-08 NSFG, Kennedy and Bumpass reported little

change in the stability of children's families over time (births as the unit of analysis).  A greater

share of children were born to cohabitors, but both cohabiting and marital unions had become

more stable over time.  Cohabitation has consistently been found to be more weakly tied to

marriage, with fewer cohabitations transitioning into marriage over time (Bumpass and Lu 2000;

Kennedy and Bumpass 2011).  While trends do not appear monotonic, recent increases in

stability and the longer-term declines in transitions into marriage are consistent with ideas from

the second demographic transition theory that cohabitation is becoming a normative family

context distinct from marriage.

In addressing potential explanations for the growing instability of cohabitation, Bumpass

and Lu (2000) speculated that as cohabitation became more widespread, there would be fewer

barriers to entry and couples would enter into cohabitation at lower levels of commitment.  The

papers cited above provide a rich descriptive portrait of changing family life, but they do not provide a multivariate framework for assessing change, and thus questions remain as to how compositional shifts in who marries and cohabits affect stability—and changes in the relative stability of marriages and cohabitations—over time.

**Changes in the composition of cohabiting families**

The composition of men and women opting into cohabitation affects the stability of these relationships, net of broader shifts in shared understandings of the nature and meaning of cohabitation. Childbearing in cohabitation has increased among women of all education levels, with the exception of college graduates, for whom any childbearing out of marriage continues to be very rare. In the early 2000's, 21%, 33%, and 36% to women with some college, a high school degree, and no high school degree, respectively (Kennedy and Bumpass 2011, Table 6). This represents a massive change in the education distribution of cohabiting fertility, from 15%, 23%, and 32% to women with some college, a high school degree, and no high school degree, respectively, in 1997-2001. In both periods, just 3% of all births to college graduates were to cohabiting women. Fertility among cohabitors is clearly moving up the educational distribution, but not into the ranks of the college-educated.

The implications of changes in education patterns for the stability of families are not entirely clear. College graduates are increasingly distinct in their hold on childbearing in marriage, and the association between college and marital stability has strengthened over time (Raley and Bumpass 2003; Martin 2006). Nonetheless, relative to women who do not complete high school, those with a high school degree or some college should have more stable unions, and cohabiting family formation has moved especially rapidly into these educational ranks.

Higher average levels of education among cohabiting parents may promote stability, although perhaps not relative to married parents, who are increasingly selected on college graduation.

Changes in the relationships of partners preceding the birth of their child may also bear significantly on union stability – as well as the relative stability of marriage and cohabitation. The prevalence of cohabitation with more than one partner prior to marriage (or "serial cohabitation") has risen over time (Lichter, Turner, and Sassler 2010). Men and women with a history of more than one cohabitation tend to be disadvantaged socioeconomically and report lower marriage expectations and chances of marriage (Lichter et al. 2010; Lichter and Qian 2008; Cohen and Manning 2010). Cohabiting parents may be more likely to have a history of cohabitation with another partner, and research on marital dissolution suggests that this may affect the stability of the current union (Lichter and Qian 2008; Teachman 2003). The presence of children from another relationship (or "multipartnered fertility") has also risen and is more prevalent among unmarried parents (Carlson and Furstenberg 2006; Guzzo and Furstenberg 2007a, 2007b). Based on what we know about marital dissolution, the growing complexity of families formed out of marriage may lead to greater instability among cohabiting versus married-parent families. Yet as noted by Edin and Tach (2012:199), we know little about the stability of unions when unmarried mothers repartner.

**APPROACH**

Recent reports have highlighted the rise of births to cohabiting women (e.g., Martinez, Daniels, and Chandra 2012). Understanding the implications of this change for child well-being and more broadly for cohabitation's evolving place in the family system depends critically on the stability of cohabiting families. We examine change in the stability of cohabiting and marital unions at time of the couple's first birth. In doing so, we recognize that union status at the time

6

of the birth represents only a snapshot of family life, and thus we examine union-birth trajectories combining information on the couple's union status at the time of the conception, the birth, and up to ten years following the birth. We account for a host of union characteristics, including the respondent's education, age at birth, and prior childbearing and union experiences. Where possible, we also account for partner characteristics. There have been important changes in the educational and age distribution of births to cohabitors (Kennedy and Bumpass 2011). There has also been growing concern over changes in the complexity of families and implications for subsequent life histories (Lichter et al. 2010; Lichter and Qian 2008). But these have not been examined in the context of the stability of unions for children. Using an event history framework and other descriptive tools, ours is the first analysis to our knowledge to examine change in the stability of marital and cohabiting families and the factors contributing to this change over time.

**DATA AND METHOD**

**NSFG**

We use data from the 1995 and 2006-10 NSFG, nationally representative fertility surveys of reproductive-age women ages 15–44 (Abma et al. 1997; NCHS 2011). Interviews were conducted in person and include retrospective histories of childbirth, marriage, cohabitation, education (to varying degrees), and pregnancy intentions. The NSFG was conducted six times between 1973 and 2002. In 2006, the National Center for Health Statistics moved to continuous interviewing, and our analyses rely on the 2006-10 release of these data. Marriage and fertility histories have long been a part of the NSFG; full cohabitation histories were collected starting in 1995. Men were added to the NSFG as of 2002. Unfortunately for our purposes, this round contained an error in skip patterns resulting in substantial missing data on dates of marital

7

separation (Kennedy and Bumpass 2008), making it unsuitable for an analysis of union dissolution. We thus rely on data on women from the 1995 and 2006-10 interviews. The 1995 NSFG includes 10,847 women (79% response rate). Interviewing for the 2006-10 release was conducted from June 2006 through June 2010 and includes 12,279 women (78% response rate).[1] The 1995 NSFG oversampled Hispanics and blacks, and in addition to these groups, the 2006-10 NSFG oversampled respondents ages 15–24. Sampling weights adjust for differences in sampling rates, response rates, and coverage rates and are used in all analyses reported below.

Our analysis focuses on the stability of unions with children. We thus generate a union-level file, including all marital and cohabiting unions bearing a child within 10 years of the interview date. Although uncommon, women may contribute more than one union to the analysis file. Our union sample includes 2,656 unions from the 1995 survey (2,562 women) and 3,046 unions (2,907 women) from 2006-10. To examine the monthly risk of separation in a multivariate discrete-time event history framework, we transform our union-level file into a union-month file, with one record for every month at risk of union dissolution. Our final union-month sample includes 136,955 months from the 1995 survey and 145,456 months from the 2006-10 survey. The two surveys cover unions bearing a first child in 1985-1995 and 1997-2010, respectively.

**Measures**

*Union status.* We focus on union status and transitions around the time of a (coresidential) couples' first birth together. We create 3 indicators: single, cohabiting, or married

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[1]Interviews were also conducted with 10,403 men (75% response rate). Male respondents are used here only in limited sensitivity analyses.

at conception; cohabiting or married at birth; and married at union duration $t$ following the couples' first birth (time-varying). Following Wu and Musick (2008), we combine these indicators to construct 4 union-birth trajectories: 1) the couple is married at conception and birth (M→B); 2) the couple is cohabiting at conception but married at birth (C→M→B); 3) the couple is cohabiting at conception and birth but marries at some time $t$ following the birth (C→B→M); and 4) the couple is cohabiting at conception, cohabiting at birth, and never marries (C→B). The chart below depicts how these indicators are combined to create our four union-birth trajectories:

| Union-birth trajectory | Cohabiting at conception (1=yes) | Cohabiting at birth (1=yes) | Married at duration $t$ (time-varying) |
|---|---|---|---|
| M→B | 0 | 0 | 1 |
| C→M→B | 1 | 0 | 1 |
| C→B→M | 1 | 1 | 1 from time of marriage |
| C→B | 1 | 1 | 0 |

Note that while we control for whether the conception occurred prior to cohabitation or marriage, we do not include this information in constructing union-birth trajectories. Sensitivity analyses showed that cohabiting and single conceptions were associated in similar ways with union dissolution. We thus show some descriptives on single conceptions, but focus on cohabiting conceptions in comparing our union-birth trajectories.

*Education.* The 1995 NSFG contains complete education histories, making it possible to map transitions into and out of schooling onto first birth and union transitions. Considerably less information on education is available in 2006-08 (only the date of high school graduation and, for the last year of interviewing, college graduation), precluding the possibility of precisely dating births relative to schooling transitions. We thus rely on education at interview and will assess in subsequent analyses the sensitivity of our results to this measurement strategy, namely,

the potential for overstating education at birth by including educational upgrading between birth and interview.

*Characteristics of the couples' first birth together.* We include controls for mother's and father's age at birth (for each pregnancy, women are asked the age of the birth father). We also control for whether the pregnancy leading to birth was intended, i.e., according to the respondent, whether she stopped contracepting around the time of the birth because she wanted to get pregnant, or reported that she wanted a baby at some time and her pregnancy came too late or at the right time.

*Respondents' childbearing and union experiences.* Relying on the full cohabitation and marriage histories, we are able to construct indicators for whether the respondent was previously married and whether she ever lived with another partner outside of marriage. Comparing union and fertility histories, we generate an indicator for whether the respondent had any children prior to moving in with or marrying her partner.

*Relationships of partners preceding first birth.* The NSFG includes very limited information on partners' characteristics, especially in 1995. In 2006-10, for each prior coresidential partner (marital or cohabiting), women are asked about partners' previous marriages and children from prior relationships. No information is available on partners' past cohabitations. In 1995, partners' prior marriages are ascertained only for a subset of unions (current husbands and cohabiting partners and all past husbands, but not past cohabiting partners), and there is no information on partners' children from prior relationships. We are thus limited by data availability in the 1995 survey in the extent to which we can compare partners' union and birth histories and their association with union dissolution over time. We do, however, run a supplementary model including information on partners from 2006-10. (We also

10

would have liked to have included other information on partners, such as race and education. But unfortunately these data are not available on all prior partners, nor are they available in the pregnancy histories on all birth fathers, as is father's age.)

*Controls.* We control for several background characteristics of the respondent, including racial and ethnic background, parents' educational attainment, whether she grew up with both biological parents, and whether she grew up attending church on a weekly basis. We also include a time-varying indicator for whether the couple had a second birth within their union. These factors are likely associated with both union status and stability and could potentially confound our estimates of the relative stability of marital and cohabiting unions (e.g., Teachman 2002).

In results not shown, we analyzed separate results for non-Hispanic Whites, non-Hispanic Blacks, and Hispanics. We also examined models run separately for men and women (in the more recent period only). Preliminary analyses suggest that key findings apply across race/ethnic groups and gender.

**Method**

Our first step is to describe compositional differences in unions and patterns of change in union transitions over time. We examine descriptive statistics on key covariates, including union status, education, partners' ages at the time of their first birth together, and the respondent's prior union and childbearing experiences. We use single-decrement life tables to explore union transitions following the couple's first birth. Although standard to think of the risk of union dissolution from the start of coresidence, we begin clocking risk at the time of the couple's first birth in a coresidential union, reflecting our primary interest in the stability of unions for children (see also Manning et al. 2004; Wu and Musick 2008).

As a second step, we examine patterns of change in a multivariate framework using discrete-time event history analysis. As noted, for this analysis, we transform our union-level file into a union-month file, with one record for every month at risk of union dissolution. The period of risk extends from the time of birth until separation or censoring at interview, for up to 120 months or 10 years. A union-month file allows for the precise timing of transitions into marriage and separation and is especially important in analyses of cohabitation, as transitions both into marriage and out of union may occur at short durations. We cluster on women to account for the possibility of multiple events (unions) per woman. Models are run separately for 1995 and 2006-10 surveys, and differences in model parameters are tested across models.

In the final step of our analysis, we run a set of simulations to flesh out the implications of our models in quantities that are easy to interpret. We use model-based estimates to generate monthly predicted probabilities of separation, varying key characteristics and holding others at their weighted mean values. Applying model results to various compositional assumptions makes clear the substantive implications of our results. Taking these monthly predicted probabilities (i.e., *conditional* predicted probabilities), we multiply them out to generate the probability of separation within 5 years of birth – a more intuitive measure of risk than either an estimated odds ratio or predicted monthly probability of risk.

**RESULTS**

**Table 1** shows characteristics of our sample of unions with children, for the full samples and separately by union status at birth. A few striking differences emerge over time, perhaps most notably the shift from marriage to cohabitation. Among unions bearing children in the 10 years prior to interview, there was a dramatic increase in conceptions and births to cohabiting couples. Conceptions within cohabitation increased from 17% in 1985-95 to 30% in 1997-2010,

12

and births within cohabitation more than doubled from 17% to 36%. Cohabitors were also less likely to transition into marriage following the birth of their child (38% in the earlier period vs. 32% in the later period, with no adjustments for censoring).

The education of women in unions with children also shifted, and changes are particularly dramatic when marital and cohabiting births are considered separately. Overall, mothers have become more educated, with a shift from high school to college education among those married at first birth, and a shift from high school to some college among those cohabiting at birth. A near majority of marital births (49%) in the most recent period are to college graduates, up from just 28% in the period ending in 1995. College graduates accounted for 5% or less of all cohabiting births in both periods; they appear to be the one educational group that remains firmly committed to childbearing within marriage.

Mothers are somewhat older at birth in the later versus earlier period, and here change appears to be due entirely to increases in age at birth among married mothers (who are significantly older than cohabiting mothers: 28 versus 23 in the later period). The share of intended first births among those married at first birth remained nearly unchanged at 83%; the share to cohabiting couples declined significantly, from 56% to 48%. Women in unions with children do not appear more likely to have had prior relationships, although the kind of relationship histories they bring to their current union has shifted from marriage to cohabitation. The share of unions involving previously married women declined overall from 1985-95 to 1997-2010, from 10% to 6%, and it did so among both those married and cohabiting at birth. The share of unions involving women with a prior cohabiting partner increased overall from 10% to 15%, and again, it did so among both those married and cohabiting at birth. Consistent with prior literature, we see evidence of increasing serial cohabitation. Less discussed, however, we

also see evidence of declining serial marriage. In both periods, cohabitors were somewhat more likely to have been married previously but much more likely to have cohabited previously, relative to those married at birth. For example, in 1997-2010, 23% of cohabiting unions versus 11% of marital unions involved a respondent who had cohabited previously.

Finally, we see that women in unions with children are increasingly likely to have children from a prior relationship (10.9% of all mothers in the later period vs. 9.8% in the earlier period). This moderate increase masks differential change by union status: the share of women in marital unions with children from a prior relationship did not change (about 6% of mothers in both periods), but the share of women in cohabiting unions with children from a prior relationship actually *declined* from 27% in the earlier period to 21% in 1997-2010. The overall increase in women with children from a prior relationship thus stems entirely from the shift into cohabitation, in which prior childbearing is more common.

**Table 2** shows life table estimates of union transitions after a cohabiting or marital birth. In the first column, we look at whether, overall, unions with children have become more or less stable from 1985-95 to 1997-2010. We show estimates of the percent of couples still together (i.e., for those cohabiting at birth, "together" means either married or cohabiting but not separated) over the two time periods. Despite changes in the composition of unions, we find no change in the overall level of union stability: 78% of all unions are estimated to be together after 5 years in the earlier period as compared to 80% in the later period (or 22% vs. 20% separating within 5 years). When we look separately by marital and cohabiting status at birth in columns 2 and 3, respectively, we see that both kinds of unions grew more stable over time: from 83% to 89% of marital unions still together, and from 50% to 60% of cohabiting unions still together after 5 years. Cohabiting unions with children remain much less stable on average than

14

marriages, but as the composition of unions with children shifted to cohabitation, both union types simultaneously grew more stable, such that overall separation rates stayed the same.

The next 3 columns highlight the weakening connection between cohabitation and marriage. Column 4 shows the percent still cohabiting over time (i.e., who neither separate nor marry). The percent still cohabiting with children after 5 years increased from 18% in the earlier period to 30 percent in the later period. The components of this are fleshed out in the competing risk life tables of columns 5 and 6, in which it is shown that net of separation, fewer cohabitors transition to marriage (60% in 1985-95 vs. 44% in the later period); and net of marriage, fewer cohabitors separate (64% in 1985-95 vs. 51% in the later period). Given the weakening tie between cohabitation and marriage, the greater overall stability of cohabitation with children is all the more striking.

**Table 3** presents results from discrete-time event history models of union dissolution over 10 years as a function of months duration since the couple's first birth together. Model 1 includes only our union status indicators, Model 2 includes sociodemographic background characteristics, and Model 3 includes information about education, union, and birth histories. We show a fourth model for the later period only, including additional information about partners' previous marriages and children from other relationships (data not available in 1995 but interesting in the context of concerns over the growing complexity of families). We explore the substantive implications of these models in greater detail in Table 4 and thus provide here only a cursory review of odds ratios presented in Table 3.

In 1995-85, indicators for union status at conception are weaker in magnitude relative to the later period, and the dummy for cohabiting at birth is stronger in magnitude. This holds across models. When we put these indicators together to assess the stability of specific union-

birth trajectories, differences in parameter estimates for the two time periods have offsetting effects. That is, when we combine indicators to look at the stability of union-birth trajectories, we find few differences over time in their relative stability. Comparing the stability of trajectories in this way provides a much more intuitive picture of relative risk (Table 4, below).

An examination of Table 3 is nonetheless helpful in understanding how other factors are associated with union stability. In the full model comparing the two time periods, Model 3, we see how the education, union, and birth histories of couples with children relate to separation risks. These appear to be associated with union disruption in much the same way in 1985-95 as compared to 1997-2010; we find no statistically significant differences in estimated coefficients tested across models run separately by survey year. Unions involving women with college degrees are 40% less likely to dissolve in any month, in both time periods. Unions in which mothers are older at birth are more stable in both periods, with an additional year of age reducing the risk of separation by 6-8%; father's age at birth appears to provide no additional protection above and beyond mother's age. An intended birth is associated with greater subsequent union stability (32% lower odds of monthly disruption for intended vs. unintended births; significant in the later period only).

We find some evidence that unions involving a mother with prior relationships are less stable, although estimated associations are weaker than expected. Whether the respondent was previously married is not statistically significant in either time period; whether she had a previous cohabiting partner is associated with a 36% higher odds of monthly union dissolution, although statistically significant in the earlier period only. Whether the respondent had a child from another relationship is associated with a 46% higher odds of monthly union dissolution, statistically significant in the later period only. Adding information about the partner's prior

16

marriages and children adds little to the model (Model 4, 1997-2010 only). Neither variable is statistically significant on its own, and together they are only marginally statistically significant ($p$<.10), indicating a somewhat elevated risk of separation when partners are either previously married or have a child from a prior relationship.

**Table 4** facilitates the interpretation of union status indicators, illustrating the relative likelihood of separation and predicted probabilities of separation across union-birth trajectories estimated from the discrete-time event history models just described (M1-M3, Table 3). In the first few columns, coefficients are combined (as shown for selected contrasts in the methods section) and exponentiated to represent odds ratios. We shift the contrast category to show comparisons across all four trajectories of interest. We use the standard error of sums of estimated coefficients to test the statistical significance of our contrasts.

Basic patterns in the odds of union dissolution are similar across time periods. Estimated odds of separation are lowest among those married at the time of conception and birth (M→B) and highest among cohabiting unions that never transition to marriage (C→B). Differentials in union stability between these trajectories are quite steep in the baseline model (M1) with no controls, although accounting for differences in the characteristics of marital and cohabiting unions reduces the differences substantially. For example, in the later period, the odds of separation for the cohabiting unions that never transition to marriage are nearly 8 times higher than the odds for the group that is married at conception and birth. This differential reduces to 3 times in the full model (M3)—substantial, but much reduced by controls. Here, controls for education, union, and birth histories appear to play a more important role in accounting for differences than sociodemographic background factors.

Controls also reduce the odds of separation among the cohabiting unions that transition at some point to marriage relative to those married at conception and birth. Results suggest that whether a couple marries at all is generally more consequential for union stability than the timing of marriage; indeed in some cases, marriage timing has no bearing on subsequent union disruption. In the earlier period, with the full set of controls (M3), the odds of separation for those cohabiting at conception but married at birth are statistically indistinguishable from those married at conception and birth (odds ratio C→M→B vs. M→B vs. = 0.99). In the later period, the odds of separation for cohabiting couples who ultimately marry, whether before or after the first birth, are statistically indistinguishable and close to 1 in the full model (odds ratio C→B→M vs. C→M→B = 1.10). Table 4 makes note of statistically significant differences in relative risks across time periods. Whereas some of the *relative* risks are significantly different across time period (e.g., the risk associated with C→M→B *relative to* M→B in 1995 vs. 2007), we tested each of the trajectories in 1985-95 against the same trajectory in 1997-2010, and we found no statistically significant differences in union-birth trajectories over time.

The final column of Table 4 shows the predicted probabilities of separation associated with each of our union-birth trajectories. Predicted probabilities for each month are estimated from models in Table 3, varying union status indicators to generate our four union-birth trajectories and holding all other covariates at the weighted means of the union-month sample specific to each time period. Predicted probabilities of separation by month (each conditional on not yet having separated) are in turn multiplied to generate the estimated probability of separation within 5 years. Because differences in the separation risks of union-birth trajectories were not statistically significant over time, we focus on the latest period in describing predicted probabilities.

In 1997-2010, results from the baseline model (M1) indicate that 9% of those married at conception and birth (M→B) separated within 5 years as compared to 25% of those cohabiting at conception but married at birth (C→M→B), 35% of those cohabiting at conception and birth but married subsequently (C→B→M), and 54% of those cohabiting at birth without subsequently marrying. As indicated above, differences across union trajectories are substantially reduced by controls. Results from Model 3 show 11% separating within 5 years among the M→B group, 19% among the C→M→B group, 20% among the C→B→M group, and 31% among the C→B group. These predicted probabilities change little based on Model 4, illustrating that partners' prior union and birth histories are little associated with subsequent union dissolution, above and beyond other covariates.

Finally, **Figure 1** shows results of a set of simulations examining separation risks derived from the full model (M3, Table 3), varying the assignment of sample characteristics from 1985-95 and 1997-2010. This figure addresses: Had the characteristics of unions not changed between 1985-95 and 1997-2010, how would union stability in the most recent period compare to what was actually observed? As above, predicted probabilities are estimated for each month under various conditions and then multiplied to generate the estimated probability of separation within 5 years. The first column, using model results and weighted mean characteristics of the union-month sample for the 1995 survey, shows a predicted probability of separation within 5 years of 15.2%. The second column, using model results and weighted mean characteristics for the 2006-10 survey, shows a very similar level of separation risk at 14.8%. Keeping the 2006-10 model parameters and assigning union status dummies the means from 1995 but all other covariates their means from 2006-10, the predicted probability drops to 13.3%. This suggests that had nothing changed but union status from 1985-95 to 1997-2010, the probability of separating

would have been 10% lower than what was actually observed in the later period.  Keeping the 2006-10 model parameters and assigning all covariates the means from 1995, the predicted probability of separation within 5 years drops to 12.4% or 16% of the observed probability of separation in 1997-2010.  This final bar illustrates that if the characteristics of unions had not changed from 1985-95 to 1997-2010, the probability of separating would have been about 16% lower than what was actually observed in the later period.

**SUMMARY AND PRELIMINARY DISCUSSION**

The composition of unions has changed in striking ways over the past decade and a half.  Most notably, births within cohabitation more than doubled from 17% to 36%.  All else equal, this would tend to increase the overall instability of unions over time.  But we also saw increases in the education of respondents and their age at birth.  And our evidence is somewhat mixed with respect to the growing complexity of families with children: We found evidence of increasing serial cohabitation (consistent with prior literature), but also declining serial marriage.  Women in unions with children were modestly more likely to have children from a prior relationship.  Life table estimates indicated that taken together, and despite significant shifts toward cohabitation, the overall stability of unions with children changed little from 1985-95 to 1997-2010.  Both unions marked by a first birth in marriage and those marked by a first birth in cohabitation became more stable over time.  This took place as the link between marriage and cohabitation weakened among those cohabiting at the birth of their first child together, that is, as fewer of these unions subsequently transitioned to marriage.

Results from discrete-time event history models of union dissolution since the couple's first birth together implied little change in the factors associated with union stability from 1985-95 to 1997-2010.  Controls were largely associated with union stability in expected directions,

although the magnitude of association between the respondent's relationship histories and union stability were weaker than expected. Basic patterns in the odds of union dissolution were similar across time periods, with the estimated odds of separation lowest among those married at the time of conception and birth and highest among cohabiting unions that never transition to marriage. Whether a couple married at all was generally more consequential for union stability than the timing of marriage. Adding controls reduced differentials across union-birth trajectories, with final models for 1997-2010 showing predicted probabilities of separation within 5 years of 11% among the M→B group, 19% among the C→M→B group, 20% among the C→B→M group, and 31% among the C→B group.

Simulations indicated that the overall probability of separating in 1997-2010 would have been about 16% lower than actually observed had the characteristics of unions remained at their 1985-95 levels. Changes in the composition of unions thus had a relatively small impact on the overall stability of unions. This was surprising to us, given the magnitude of the shift into cohabitation, as well as presumed implications of factors such as serial cohabitation and multipartner fertility on the stability of unions with children. A close examination of the evidence points to offsetting compositional changes combined with relatively modest associations between, for example, prior relationships and union stability. Cohabitors with children remain quite distinct compositionally, and on some descriptive measures, married and cohabiting families are diverging (e.g., the gap in intendedness at birth grew over time). But on others, they are converging (e.g., differences in the proportions previously married and with children from a prior relationship declined over time).

In conclusion, do we find evidence that cohabitation is becoming a more normative environment for having and raising children? Our reading of the evidence suggests mixed

support.  The second demographic transition theory posits that nonmarital families should move from a deviant status to being ultimately equivalent to marriage.  As childbearing outside of marriage becomes more institutionalized, unmarried couples should feel less compelled to marry at any point along the path to parenthood, and among those living together, the stability of their unions should becoming increasingly stable.  Consistent with this idea, we find that cohabiting families have become more loosely tied to marriage, with fewer couples transitioning to marriage after the birth of a child.  These families have also become more stable.  But contrary to the notion that the stability of cohabiting and marital families should be converging, we find remarkably little change in the *relative* stability of marital and cohabiting families over time.  As cohabiting families have become more stable, so too have marital families.

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Table 1. Characteristics of unions with children, 1995 and 2006-10 NSFG Women

| | All | | Married at birth | | Cohabiting at birth | |
|---|---|---|---|---|---|---|
| | 1995 | 2006-10 | 1995 | 2006-10 | 1995 | 2006-10 |
| Total | 1.00 | 1.00 | 0.83 | 0.64 | 0.17 | 0.36 |
| Union duration (months from first birth) | 51.21 | 51.88 | 54.15 | 58.76 | 36.40 | 39.48 |
| **Union status around the time of the birth** | | | | | | |
| Married at conception | 0.65 | 0.52 | 0.78 | 0.81 | 0.00 | 0.00 |
| Single at conception | 0.18 | 0.19 | 0.13 | 0.09 | 0.40 | 0.36 |
| Cohabiting at conception | 0.17 | 0.29 | 0.09 | 0.10 | 0.60 | 0.64 |
| Married at birth | 0.83 | 0.64 | 1.00 | 1.00 | 0.00 | 0.00 |
| Cohabiting at birth | 0.17 | 0.36 | 0.00 | 0.00 | 1.00 | 1.00 |
| Married after birth (time-varying)* | 0.93 | 0.81 | 1.00 | 1.00 | 0.38 | 0.32 |
| **Respondent sociodemographic background** | | | | | | |
| Racial-ethnic background | | | | | | |
| Non-Hispanic White | 0.74 | 0.65 | 0.83 | 0.79 | 0.61 | 0.59 |
| Non-Hispanic Black | 0.07 | 0.10 | 0.05 | 0.07 | 0.17 | 0.16 |
| Hispanic | 0.14 | 0.18 | 0.12 | 0.14 | 0.22 | 0.25 |
| Other | 0.05 | 0.07 | 0.06 | 0.08 | 0.03 | 0.05 |
| Father's education (highest grade) | | | | | | |
| Less than HS | 0.18 | 0.22 | 0.17 | 0.19 | 0.22 | 0.27 |
| HS degree | 0.43 | 0.31 | 0.42 | 0.28 | 0.45 | 0.35 |
| Some college + | 0.30 | 0.38 | 0.32 | 0.46 | 0.16 | 0.25 |
| Missing | 0.10 | 0.09 | 0.08 | 0.07 | 0.17 | 0.13 |
| Mother's education (highest grade) | | | | | | |
| Less than HS | 0.17 | 0.22 | 0.15 | 0.19 | 0.24 | 0.27 |
| HS degree | 0.54 | 0.35 | 0.55 | 0.34 | 0.52 | 0.37 |
| Some college + | 0.25 | 0.41 | 0.27 | 0.46 | 0.16 | 0.34 |
| Missing | 0.04 | 0.01 | 0.03 | 0.01 | 0.08 | 0.01 |
| Grew up with both parents | 0.63 | 0.62 | 0.68 | 0.70 | 0.39 | 0.47 |
| Attended church weekly | 0.36 | 0.32 | 0.39 | 0.39 | 0.23 | 0.20 |
| **Education, union, and birth histories** | | | | | | |
| Respondent education (highest grade at interview) | | | | | | |
| Less than HS | 0.13 | 0.16 | 0.09 | 0.09 | 0.30 | 0.30 |
| HS degree | 0.39 | 0.24 | 0.37 | 0.18 | 0.49 | 0.36 |
| Some college | 0.25 | 0.26 | 0.26 | 0.24 | 0.17 | 0.29 |
| College + | 0.24 | 0.33 | 0.28 | 0.49 | 0.04 | 0.05 |
| Respondent age at couple's first birth | 26.04 | 26.38 | 26.65 | 28.20 | 22.95 | 23.11 |
| Partner age at couple's first birth | 27.26 | 28.34 | 27.75 | 29.99 | 24.74 | 25.38 |
| Couple's first birth intended | 0.78 | 0.71 | 0.82 | 0.83 | 0.56 | 0.48 |
| Repondent married previously | 0.10 | 0.06 | 0.09 | 0.06 | 0.13 | 0.07 |
| Respondent cohabited previously | 0.10 | 0.15 | 0.09 | 0.11 | 0.16 | 0.23 |
| Respondent had other child(ren) at union start | 0.10 | 0.11 | 0.07 | 0.05 | 0.27 | 0.21 |
| Couple had another child (time-varying)* | 0.38 | 0.38 | 0.39 | 0.41 | 0.32 | 0.32 |
| **Partner history (available only in 2006-10)** | | | | | | |
| Partner previously married | N/A | 0.15 | N/A | 0.08 | N/A | 0.29 |
| Partner had other child(ren) at union start | N/A | 0.11 | N/A | 0.08 | N/A | 0.17 |
| | | | | | | |
| Number of unions | 2,656 | 3,046 | 2,144 | 1,698 | 512 | 1,348 |
| Number of women | 2,562 | 2,907 | 2,098 | 1,660 | 464 | 1,247 |

Source: 1995 and 2006-10 NSFG Women. Unions producing a birth within 10 years of interview.

Notes: Underlined terms are significantly different between 1995 and 2006-10 at $p < .05$.

*In event history analysis of union-months, indicator $= 1$ following the event (i.e., marriage or childbirth).

Table 2. Life table estimates of union transitions after a cohabiting or marital birth, 1995 and 2006-10 NSFG Women

| Duration (months) | All unions (1) % still together | | Married at birth (2) % still together | | Cohab at birth: no competing risks (3) % still together | | (4) % still cohabiting | | Cohab at birth: competing risks (5) % married | | (6) % separated | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1995 | 2006-10 | 1995 | 2006-10 | 1995 | 2006-10 | 1995 | 2006-10 | 1995 | 2006-10 | 1995 | 2006-10 |
| 12 | 0.94 | 0.96 | 0.96 | 0.98 | 0.85 | 0.90 | 0.66 | 0.77 | 0.20 | 0.14 | 0.23 | 0.13 |
| 24 | 0.89 | 0.91 | 0.92 | 0.96 | 0.72 | 0.81 | 0.46 | 0.59 | 0.34 | 0.25 | 0.39 | 0.25 |
| 36 | 0.85 | 0.87 | 0.89 | 0.94 | 0.61 | 0.73 | 0.32 | 0.48 | 0.43 | 0.31 | 0.52 | 0.35 |
| 48 | 0.81 | 0.83 | 0.87 | 0.91 | 0.54 | 0.66 | 0.23 | 0.38 | 0.54 | 0.38 | 0.59 | 0.44 |
| 60 | 0.78 | 0.80 | 0.83 | 0.89 | 0.50 | 0.60 | 0.18 | 0.30 | 0.59 | 0.44 | 0.64 | 0.51 |

Source: 1995 and 2006-10 NSFG Women. Unions producing a birth within 10 years of interview.
Notes: In life tables estimated with competing risks, in addition to censoring at interview, women are censored at separation (column 5) and marriage (column 6).

Table 3. Odds ratios from discrete-time event history models of union dissolution within 10 years of first birth, 1995 and 2006-10 NSFG Women

| | Model 1 (union indicators only) | | Model 2 (M1 + sociodemographic variables) | | Model 3 (M2 + education, union, and birth histories) | | Model 4 (M3 + partner variables) |
|---|---|---|---|---|---|---|---|
| | 1995 | 2006-10 | 1995 | 2006-10 | 1995 | 2006-10 | 2006-10 |
| Union duration (months from first birth) | 1.00 | 1.01 ** | 1.00 | 1.01 ** | 1.01 | 1.02 ** | 1.02 *** |
| Union duration-squared | 1.00 | 1.00 *** | 1.00 | 1.00 * | 1.00 | 1.00 | 1.00 *** |
| **Union status around the time of the birth** | | | | | | | |
| Married at conception (reference) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Single at conception | 1.93 *** | 3.42 *** | 1.79 *** | 3.35 *** | 1.04 | 1.74 *** | 1.71 ** |
| Cohabiting at conception | 1.67 *** | 2.96 *** | 1.46 ** | 2.95 *** | 0.99 | 1.67 *** | 1.62 ** |
| Married at birth (reference) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Cohabiting at birth | 1.85 *** | 1.07 | 1.64 ** | 0.94 | 1.63 *** | 0.82 | 0.80 |
| Married after birth (time-varying) | 0.62 ** | 0.40 *** | 0.65 ** | 0.39 *** | 0.67 ** | 0.43 *** | 0.43 *** |
| **Respondent sociodemographic background** | | | | | | | |
| Racial-ethnic background | | | | | | | |
| Non-Hispanic White (reference) | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Non-Hispanic Black | | | 1.62 *** | 1.16 | 1.78 *** | 1.23 | 1.23 |
| Hispanic | | | 0.83 | 0.78 | 0.76 * | 0.74 * | 0.75 * |
| Other | | | 0.68 | 0.69 | 0.81 | 0.76 | 0.76 |
| Father's education (highest grade) | | | | | | | |
| Less than HS | | | 0.88 | 0.85 | 0.88 | 0.78 | 0.78 |
| HS degree (reference) | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Some college + | | | 0.79 | 1.24 * | 0.92 | 1.30 * | 1.33 ** |
| Missing | | | 0.87 | 1.11 | 0.79 | 1.07 | 1.07 |
| Mother's education (highest grade) | | | | | | | |
| Less than HS | | | 0.95 | 1.01 | 0.90 | 1.05 | 1.05 |
| HS degree (reference) | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Some college + | | | 1.01 | 1.02 | 1.10 | 1.08 | 1.09 |
| Missing | | | 0.79 | 0.85 | 0.74 | 0.96 | 0.95 |
| Grew up with both parents | | | 0.72 *** | 0.57 *** | 0.81 * | 0.66 *** | 0.66 *** |
| Attended church weekly | | | 0.62 *** | 0.68 *** | 0.62 *** | 0.66 *** | 0.67 *** |
| **Education, union, and birth histories** | | | | | | | |
| Respondent education (highest grade at interview) | | | | | | | |
| Less than HS | | | | | 0.98 | 1.17 | 1.17 |
| HS degree (reference) | | | | | 1.00 | 1.00 | 1.00 |
| Some college | | | | | 0.85 | 0.94 | 0.93 |
| College + | | | | | 0.61 *** | 0.58 *** | 0.59 ** |
| Respondent age at couple's first birth | | | | | 0.91 *** | 0.94 *** | 0.95 *** |
| Partner age at couple's first birth | | | | | 1.00 | 1.01 | 0.99 |
| Couple's first birth intended | | | | | 0.87 | 0.68 *** | 0.68 *** |
| Repondent married previously | | | | | 1.26 | 1.06 | 1.05 |
| Respondent cohabited previously | | | | | 1.36 * | 1.11 | 1.10 |
| Respondent had other child(ren) at union start | | | | | 1.04 | 1.46 ** | 1.45 ** |
| Couple had another child (time-varying) | | | | | 0.75 ** | 0.57 *** | 0.57 *** |
| **Partner history (available only in 2006-10)** | | | | | | | |
| Partner previously married | | | | | | | 1.27 |
| Partner had other child(ren) at union start | | | | | | | 1.13 |

Source: 1995 and 2006-10 NSFG Women. Unions producing a birth within 10 years of interview. N = 136,955 union-months from 1995; N = 145,436 union-months from 2006-10.
Notes: Underlined terms are significantly different between 1995 and 2006-10 at $p < .05$.

Table 4. Estimates of union dissolution within 10 years of first birth derived from event history models in Table 3, 1995 and 2006-10 NSFG Women

| 1995 | | Odds ratios | | | Predicted probability |
|---|---|---|---|---|---|
| | M-->B | C-->M-->B | C-->B-->M | C-->B | separation by 5 years |
| Model 1 | | | | | |
| M-->B | 1.00 | 1.67 *** | 3.67 *** | 4.96 *** | 0.14 |
| C-->M-->B | | 1.00 | 2.19 *** | 2.96 *** | 0.22 |
| C-->B-->M | | | 1.00 | 1.35 ** | 0.42 |
| C-->B | | | | 1.00 | 0.52 |
| Model 2 | | | | | |
| M-->B | 1.00 | 1.46 ** | 2.80 *** | 3.69 *** | 0.14 |
| C-->M-->B | | 1.00 | 1.92 *** | 2.53 *** | 0.19 |
| C-->B-->M | | | 1.00 | 1.32 ** | 0.33 |
| C-->B | | | | 1.00 | 0.43 |
| Model 3 | | | | | |
| M-->B | 1.00 | 0.99 | 1.86 *** | 2.40 *** | 0.14 |
| C-->M-->B | | 1.00 | 1.89 *** | 2.43 *** | 0.14 |
| C-->B-->M | | | 1.00 | 1.29 ** | 0.23 |
| C-->B | | | | 1.00 | 0.30 |
| | | | | | |
| 2006-10 | | | | | |
| Model 1 | | | | | |
| M-->B | 1.00 | 2.96 *** | 4.32 *** | 7.94 *** | 0.09 |
| C-->M-->B | | 1.00 | 1.46 ** | 2.68 *** | 0.25 |
| C-->B-->M | | | 1.00 | 1.84 *** | 0.35 |
| C-->B | | | | 1.00 | 0.54 |
| Model 2 | | | | | |
| M-->B | 1.00 | 2.95 *** | 3.80 *** | 7.06 *** | 0.09 |
| C-->M-->B | | 1.00 | 1.29 | 2.40 *** | 0.24 |
| C-->B-->M | | | 1.00 | 1.86 *** | 0.30 |
| C-->B | | | | 1.00 | 0.48 |
| Model 3 | | | | | |
| M-->B | 1.00 | 1.67 *** | 1.83 *** | 3.22 *** | 0.11 |
| C-->M-->B | | 1.00 | 1.10 | 1.93 *** | 0.18 |
| C-->B-->M | | | 1.00 | 1.75 *** | 0.19 |
| C-->B | | | | 1.00 | 0.31 |
| Model 4 | | | | | |
| M-->B | 1.00 | 1.62 ** | 1.72 *** | 3.00 *** | 0.12 |
| C-->M-->B | | 1.00 | 1.06 | 1.85 *** | 0.19 |
| C-->B-->M | | | 1.00 | 1.74 *** | 0.20 |
| C-->B | | | | 1.00 | 0.32 |

Source: 1995 and 2006-10 NSFG.  Estimates derived from discrete-time event history models of separation (Models 1-4, Table 3).
Note: *** indicates values statistically significantly different from 1 at $p < .01$.

**Figure 1. Predicted probability of separation within 5 years, altering model parameters and covariate means**
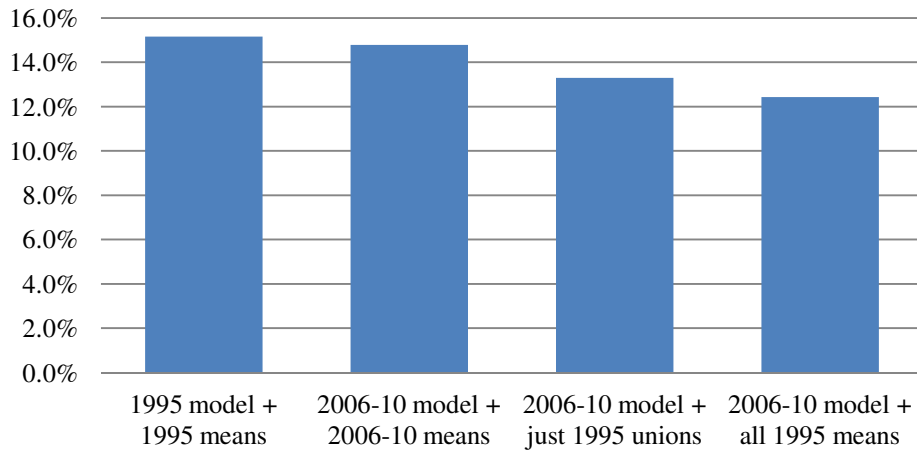
Source: 1995 and 2006-10 NSFG. Estimates derived from discrete-time event history models of separation (Model 3, Table 3).