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Moving and union formation in the transition to adulthood in the United States

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Abstract

Although previous research has paid attention to profound changes in union formation among young adults, few studies have incorporated moving events in the estimation of union formation. Moreover, less attention has been given to detailed moving experiences in young adults' life course. Using panel data from the National Longitudinal Survey of Youth 1997, we examine the relationship between moving and first union formation of young adults in the United States. Moving events are aggregated by distance moved, economic conditions in origin and destination places (i.e. moving within the same county, moving to new counties with better or the same economic conditions, and moving to new counties with worse economic conditions) and the time since a move. Our findings suggest that moving events, regardless of type, are significantly related to first union formation for females while the time since a move is important to union formation of males.

Keywords

Transition to adulthood; migration; residential mobility; union formation; NLSY97

Introduction

Diverse changes have occurred in the transition to adulthood during the last few decades in most industrialized countries, e.g. in the United States, Europe, and Canada (Billari & Liefbroer 2010; Côte & Bynner 2008; Furstenberg, Rumbaut, & Settersten, 2005). In particular, the timing and type of union formation has changed considerably (Manning, Brown, & Payne 2013; Schoen, Landale, & Daniels 2007); first marriage is now delayed until the late 20s while cohabitation has emerged as either an alternative or a precursor to marriage for many young adults (Cherlin, 2010). As family formation appears to be a key

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contributor to diversity in the transition to adulthood (Amato et al. 2008; Billari & Liefbroer 2010), prior research has given much attention to possible factors associated with the difference in union formation. These studies have found that extended time in school and training for employment that can support a family have significantly transformed the way people form a union (Amato et al. 2008; Goldstein & Kenney 2001; Guzzo 2006). Marriage has also been delayed because young adults explore romantic relationships (Arnett 2004), usually via cohabitation, as part of the emphasis on exploring that occurs during this period of life (e.g. assessing compatibility of marriage or singlehood, Sassler 2010; Schoen, Landale, & Daniels 2007). While prior studies have investigated core life course events in concert with union formation during the transition to adulthood, few studies have considered geographic mobility. Moving is, however, a significant life event that most individuals experience multiple times, and one that has implications for young adult's life choices, e.g. by providing both new opportunities and constraints (Elder, King, & Conger 1996; Sharkey 2012).

Union formation and moving are closely related to each other throughout life (Kulu & Milewski 2007; Michielin & Mulder 2008; Speare & Goldscheider 1987). Mobility rates are high for newly-wed individuals although the rates decline as the marital duration increases (Speare & Goldscheider 1987). It is also possible that newly-wed couples consider residential change before a wedding or during pregnancy (Michielin & Mulder 2008). Particularly for young adults, residential change is a learning process that can promote independence and autonomy (Garasky, Haurin, & Haurin 2001; Goldscheider & Goldscheider 1999; Mulder & Clark, 2002). For example, when leaving the parental home, young adults start to manage budgets and life decisions independently from their family of origin. Becoming independent is a crucial developmental task for those in the transition to adulthood (Erikson 1968) that impacts all life course transitions, such as forming a family. Prior studies that have examined moving as a life course event are limited, however, because they use static measures of mobility such as ever moved (Jampaklay 2006), or are restricted to only married or cohabiting couples (Boyle, Kulu, Cooke, Gayle, & Mulder 2008; Clark & Withers 2007; Jacobsen & Levin 1997). Furthermore, no study has exclusively focused on young adulthood which is a dense period of demographic transitions.

The current study, therefore, expands upon our current knowledge and examines how moving is associated with first union formation among young adults in the U.S. First union formation in the current study refers to either cohabitation or marriage without premarital cohabitation. Findings from this study will expand our knowledge on the association between moving and union formation among young adults in at least three ways. First, we use longitudinal information from a nationally representative sample of young adults in the current study and include various life course transitions such as employment and educational history in the analyses. Studies that have reported the relationship between moving and union formation have employed cross-sectional data which are limited because they do not tell us how other factors interplay with the association between union formation and mobility. Second, we pay particular attention to contemporary young adults in the United States in this study. Although longitudinal information has been used in the past, no study has exclusively focused on young adults who undergo many life course transitions within a short time period. In addition, life course transitions have been restricted to only few years

in previous research (e.g. those aged 44 or younger and their five to six years of retrospective information, Guzzo 2006). Third, prior studies find that various types of moves have different motivations and implications for life course transitions (Schachter, 2001). Thus, this study disaggregates moving events in great detail by distance moved, economic conditions, and time since a move to examine how possible mechanisms influence the relationship between mobility and union formation. These contributions will add new knowledge that helps us better understand the role of mobility in the transition to adulthood in the U.S.

Specifically, this study aims to answer the following research questions:

1. What are the patterns of union formation and mobility among young adults in the U.S.?
2. How are moving events related to first union formation?
3. How are different types of mobility related to the timing and type of first union formation?
4. How is the time since a move related to first union formation of young adults?

Theoretical Framework

Moving and Union Formation in the transition to adulthood

The transition to adulthood has extended and now includes more time spent in school, delays in family formation and entry into the labor force (Furstenberg, Rumbaut, & Settersten 2005; Rindfuss 1991). The most remarkable recent change in young adulthood is increased variation in the timing of family formation and composition of the families formed (Schoen, Landale, & Daniels 2007). The number of children born to unmarried parents has increased from about 30% in 1980 to 48% in 2010 (U.S. National Center for Health Statistics, 2011) and marriage has been delayed until the late 20s in recent years (ages 28.9 and 26.9 for men and women in 2011, US Census Bureau 2011). These demographic shifts parallel growing family diversity and the prevalence of nonmarital cohabitation, particularly among young adults. Young adulthood is a period of exploration for various life opportunities and a time for intensive self-focus, which is a key part of the identity formation process (Arnett 2004; Arnett et al. 2011). Cohabitation may represent an exploration of intimate relationships for young adults because cohabitation requires a lower level of commitment and responsibility than marriage (Cherlin 2010; Smock 2000). For example, Schoen, Landale and Daniels (2007) find that fewer young cohabiting couples have children together or transition to marriage, which implies that cohabitation is more of an alternative to singlehood rather than a substitute or antecedent of marriage for this group.

For young adults who are the most mobile group (Franklin 2003), moving can be closely related to union formation. Migration theories suggest that moving is an investment for those who are rational and have an ability to calculate the costs and benefits of mobility (DaVanzo 1983; Massey et al. 1993; Tienda & Wilson 1992). Therefore, moving should improve one's human capital (Massey et al. 1993), and it may also influence the timing and type of union formation (Carlson, McLanahan, & England 2004; Oppenheimer, 1988, 2003).

For example, men's higher economic status promotes marriage among single and cohabiting couples (Carlson et al. 2004; Oppenheimer 1988; Smock & Manning 1997). Cohabitation, in contrast, is considered a transitory state for those with unstable economic positions (Oppenheimer 2003), and marriage is desired by most cohabiters once they establish economic stability (Cherlin 2004; Oppenheimer 1988). Therefore, positive gains from moving (i.e., higher earnings) can increase the likelihood of union formation, especially marriage. In addition, the association between moving and union formation may be more deliberate since moving changes socioeconomic conditions in which an individual resides. Studies find that variability of potential mates in a local marriage market influences individual's marital choices (Lewis & Oppenheimer 2000; Lichter et al. 1992; Lichter, Anderson, & Hayward 1995). Mate seekers search for partners within a local marriage market, but if the area fails to provide a sufficient pool, people expand their markets by adjusting the criteria for potential mates (Lichter et al. 1995). In such a situation, people are assumed to basically 'cast a wide net' while staying in the same marriage market. Due to constrained market conditions, however, people may instead move to another market, similar to job seekers who move from low to high wage places in order to maximize their income (Massey et al. 1993). If it is the case, moving to better marriage markets (i.e. economic contexts) should increase the likelihood of union formation.

Migration as a Life Course Event

The life course perspective emphasizes the timing and sequence of events as well as interrelations between various life course transitions (Elder, 1998). Mobility is one of the common life events which is closely related to other life course transitions. For example, changes in family size and marital status often trigger residential moves (Kulu & Milewski, 2007; Michielin & Mulder, 2008), and individuals consider aspects of new places, such as school districts, neighborhoods and climate, and how these will impact the quality of their lives (Clark & Huang 2003). Although most studies consider mobility as a consequence of other life course events, moving also motivates other life changes (Geist & McManus 2008). For example, movers are more likely to experience a change in marital status and household composition in the year following a move, even after controlling for age effects (Geist & McManus 2008). Moreover, moving influences income and poverty status, which either improves or jeopardizes movers' economic circumstances (Geist & McManus 2008).

With regard to the moving event, the distance moved affects the outcome of a move (Boyle et al. 2008; Cadwallader, 1992; Clark & Withers 2007; Geist & McManus 2008). Longer moves involve greater mental and physical stress for movers (Cadwallader, 1992; Magdol, 2002), which may in turn discourage other life course transitions such as courting or dating partners. Boyle et al. (2008) find that two or more moves increase the likelihood of union dissolution for Austrian couples, especially if they are long-distance moves. Others find that long and short distance moves have different motivations. For example, long distance moves (i.e., moves across counties) are found to be motivated by work or family issues whereas short distance moves (i.e., moves within the same county) are more often housing-related and reflect the less stable socioeconomic status of a mover (Schachter, 2001). The distance of a move is further linked to life course trajectories since long distance moves more often alter the socioeconomic context in which a mover is embedded, and thus is more likely to

impact individual's life course (Elder 1998; Sharkey 2012). Moreover, studies have found that the time since a moving event significantly influences other life course events. For example, Kulu and Steele (2013) found that pregnancy rates increase during the first few months and then decreases about one year after a move.

Based on the previous research, we posit several hypotheses in the current study. First, we expect that mobility is closely related to the hazard of first union although the associations may vary by the distance moved and economic conditions in origin and destination places. Second, we expect that the type of move, migration versus residential mobility, is differentially related to different types of unions. Third, we expect that the close relationship between moving and union formation may weaken as the time since a move increases.

Data and Measures

We use public and geocode data from the National Longitudinal Survey of Youth 1997 (NLSY97) which contains information on 8,984 respondents in the United States who were born between 1980 and 1984. The NLSY97 has interviewed these respondents annually from 1997 until recent years which include ages 12-18 to the middle and late twenties. Panel data from 1997 to 2011 are utilized and transformed into person-month files to estimate event history models in the current study.

The outcome variable in this study is *union formation*. Union formation is measured by either first cohabitation or marriage without prior cohabitation. Regarding union formation, although the previous dating status is important to the first union formation, we are limited by data available in the NLSY97. The NLSY97 asked all respondents whether they have ever been on a date or social outing, how often the respondents have dated and the number of different people the respondent has gone out with in the past year (wave 1) or since the last interview (all subsequent waves) (Center for Human Resources 2014). These questions, however, do not correspond to any particular person and thus make it impossible to match the information to the first cohabiting or marital partner. Moreover, the dating histories are yearly measures which eliminate possibility of multiple partners within a year. Thus, among those with no prior union experience, we are not able to track previous dating records before the date of first cohabitation or marriage. This is a limitation of this study, which we will return to in the discussion.

Respondent's *moving experiences* are created using both the public and geocode files from the NLSY97. The NLSY97 provides information about the respondent's migration history, classifying moving into 4 categories in the public file; move within the same county, move within the same state but different county, move between states, and move to or from a foreign country (Center for Human Resources, 2014). Using the information, we create two dummy variables for moving and non-move is treated as a reference category. First, a within-county move is considered a short distance move called *residential mobility*. Second, a long distance move is defined as a between-county move including those who change their residence to different county either within the same state or in different states, and is considered a *migration event*. From the geocode file, we are able to match the origin and destination of each move to the Federal Information Processing Standards (FIPS) codes.

Then, we categorize the migration experiences by economic conditions in origin and destination places. We import *county unemployment rates* from the Local Area Unemployment Statistics (LAUS) of the Current Population Survey (CPS) which is the official measure of the national labor force in the United States (Bureau of Labor Statistics 2013). Using these data, migration events are separated into two categories: moving to another county with lower unemployment rates and moving to another county with higher unemployment rates. Very few respondents (n=115) moved to a county with the same unemployment rate, and so these cases were combined with the cases that moved to a county with lower unemployment rates. To be certain that the moving is initiated by young adults, we drop all moving events with parents. In addition, international migration, moving from or to a foreign county (about 4% of the moving cases), is excluded from the analysis because we are not able to assign employment conditions to the moves. Moreover, in the United States, where the internal migration rates are high, international migration has led to different life trajectories (Clark, Glick, & Bures 2009). We expect that the hazard of union formation is subject to the time since a moving event and thus a series of dummy variables for different time periods since a move (i.e. 0-3 months, 3-6 months, 6-12 months, 12-24 months, 24 or more months, and no move as a reference group) are included in our models. Creating moving variables, we admit that a large share of young adults may move for college during the transition to adulthood. The NLSY, however, does not ask the reason for residential moves. Moreover, respondents are asked about their household information and moving experiences based on their permanent address which is mostly their parental home (Center for Human Resources 2014). For example, less than 5% of the moving events occur within 3 months of college enrollment in the NLSY97¹. We are, therefore, uncertain about whether the move is motivated by college enrollment or not. We will return to this point in the discussion.

The union formation of young adults in the NLSY97 is estimated with *relevant individual and family characteristics*. Individual characteristics include respondent's race/ethnicity, educational attainment and employment status. *Race/ethnicity* has three categories; Black and Hispanic, with non-Black non-Hispanic Whites and others being a reference category. *Education* is measured by time-varying covariates; a dummy variable of enrollment status (0= not enrolled in school, 1= enrolled in school) and a variable of highest education completed each month (earning a high school diploma or GED, a postsecondary degree, and less than high school degree as a reference category). We separate the postsecondary education by the institutional type (i.e., two-year colleges, an Associate Degree; four-year colleges, a bachelor degree) because different life trajectories are expected by the school type (Bozick & DeLuca, 2005). *Monthly employment status* is measured using data from the employment status history file in the NLSY97. Those who work on average more than 39 hours per week in a month are coded as being employed full-time, those who work less than 39 hours per week in a month are defined as being employed part-time and others are considered 'not working.' The not working group includes 1) no employment information reported, 2) no associated with an employer, 3) not searching for an employer job, 4) not

¹Only 2.9% of the moving events occur in the same month with college enrollment and about 4.3% take place within 3 months of the enrollment in the NLSY97.

working (unemployment vs out of the labor force cannot be determined), 5) associated with an employer but periods not working for the employer are missing, 6) unemployed, and 7) out of the labor force (Center for Human Resources 2014). Since individual's labor force participation is influenced by the macro labor force, we interact the individual employment status with county unemployment rates. Additionally, family background characteristics are included in models as explanatory variables. These include *mother's educational attainment* which is a continuous variable representing the highest grade completed and a dummy variable for whether the respondent lived with both biological parents (i.e. an intact family) in 1997. All time-varying control variables are lagged one month in the analysis to ensure that the explanatory events occur prior to union formation.

With regard to contextual influences, we include *unemployment rates* in the residence at the first interview and a time-varying measure of residence of *nonmetropolitan and metropolitan areas*. Due to changes in the standard measuring metropolitan and nonmetropolitan statistical areas in the NLSY97, 2003 Urban Influence Codes from USDA ERS (the United States Department of Agriculture Economic Research Service) were merged with the NLSY data. According to the US Census Bureau, about 16.6% of the U.S. population lives in nonmetropolitan areas (USDA, 2007); in our sample, 23.6% lived in nonmetropolitan areas in 1997.

Analysis

The relationship between moving and the outcome, first union formation, is examined using Cox proportional hazards models. We first perform four separate analyses by the type of mobility; model 1 includes moving events regardless of the type; model 2 includes the moving events differentiated by distance (residential mobility and migration); in model 3, residential mobility and 2 different types of migration events which are distinguished by economic conditions are included; model 4 includes all control variables and moving events detailed in the model 3. Following these analyses, we use a Cox proportional hazards competing risks model to present first union type (i.e., marriage or cohabitation) as competing risks (Box-Steffensmeier & Jones, 2004). In this analysis, we add the time since a move to the model to explore how the type of moving and time since a move play a role in first union formation of young adults. Different life course trajectories during the transition to adulthood are expected by gender (Widmer & Ritschard 2009), and so we estimate the models separately by gender.

In our study, the onset of the risk of union formation is set to age 16. About 2% of the sample (181 respondents) who cohabited or married before age 16 are excluded from the analyses. The final sample includes 8,803 individuals who contribute to 799,377 person months for analyses. To take into account the tied cases in the dataset, we employ the Breslow method of the Cox proportional hazards model (Box-Steffensmeier & Jones, 2004). All analyses are conducted using the survey setting command in Stata to account for the complicated sampling strategy of the NLSY97 (Cleves et al., 2010; Center for Human Resource Research, 2014).

Results

Bivariate Analysis

Descriptive findings for males and females are reported in tables 1 and 2, respectively. First, with regard to union formation, both men and women are more likely to cohabit than to marry, and a larger share of males are single compared to females (34% and 23%, respectively). The mean age at first marriage and cohabitation is about 25.2 and 24.1 for males, respectively, and about 24.6 and 23.3 for females, respectively. Second, for both men and women, African Americans are less likely than other racial/ethnic groups to form any union while Hispanics are more likely to marry and whites tend to cohabit compared to other racial/ethnic groups. Third, regarding education, those who are enrolled in school are less likely to be single but more likely to marry and cohabit compared to their counterparts who are not in school for both men and women. In addition, both men and women who complete at least a high school degree are less likely than those with less than a high school diploma to be single. Male respondents with a bachelor degree and females with an AA degree are most likely to marry compared to any other educational groups. With regard to cohabitation of both men and women, compared to those with less than a high school degree, those with a high school diploma are more likely to cohabit while those with more than AA degrees are less likely to do. Fourth, those who are employed either part-time or full-time are more likely to marry but less likely to cohabit compared to the not working group for both men and women. For males only, full-time employees are more likely than those who are not working or employed part-time to be single. On the other hand, females who are not working are more likely than part-time employees but less likely than full-time employees to be single. Fifth, for both men and women, those living in an intact family in 1997 are more likely than those who are not from the family to either be single or marry but less likely to cohabit. In addition, both men and women with higher mother's education are more likely to be single than to cohabit and marry. Finally, with regard to residence characteristics, both men and women who live in metropolitan areas are more likely to be single but less likely to cohabit compared to their counterparts who live in nonmetropolitan areas. Male respondents living in metropolitan areas are less likely than their nonmetropolitan counterparts to marry while metropolitan females are more likely than their counterparts in nonmetropolitan areas to marry. Moreover, males with higher unemployment rates in the county of residence are more likely to either marry or cohabit while females in the county with higher unemployment rates tend to be single.

The bottom panel of tables 1 and 2 shows moving patterns of both male and female young adults, respectively. For males (in table 1), those who move either short-distance or long-distance are less likely to marry but more likely to be single compared to those who never move. Male young adults who move within the same county are more likely than those who never move or who migrate to another county to cohabit but male long-distance movers are more likely to be single compared to short-distance movers and non-movers. Marriage and cohabitation occurs on average 19.4 and 20.0 months after moving for males, respectively. For females (table 2), however, those who move within the same county are less likely to either be single or cohabit but more likely to marry compared to their counterparts who never move. Female young adults who migrate to another county, on the other hand, are

more likely to either be single or cohabit but less likely to marry compared to those who never move and short-distance movers. Females marry and cohabit on average 18.6 and 19.2 months after a moving event, respectively.

Multivariate Analysis with type of mobility

Findings from the Cox models predicting the hazard of first union are displayed in table 3. Model 1 reveals that moving significantly increases the hazard of first union for females (OR=1.88). In addition, residential mobility and migration are significant in the hazard of first union for females in model 2. If we specify the migration type by economic conditions of origin and destination counties in model 3, migration to counties with higher unemployment rates is a strong predictor for the hazard of first union, compared to other types of migration for females. Controlling for all relevant factors in model 4, migration to new places with worse economic conditions increases the hazard of first union formation by about 2.4 times for females compared to those who did not move. In contrast, no significant association between moving and union formation is found for males, controlling for all other factors.

With regard to other factors, the findings show that educational attainment and family background characteristics are significantly related to first union formation for both men and women. Completing school (i.e. high school, AA, and BA degrees) significantly decreases the hazard of first union for young adults. Those having lived with both biological parents are less likely to form a union and increasing maternal educational attainment significantly decreases the hazard of a union for both men and women. For females only, however, African Americans are significantly less likely than their white counterparts to form a union. In addition, enrolling in school increases the hazard of union formation by 22% for females only. For males, employment status is significantly related to union formation. Those who are employed full-time are more likely than their counterparts not working to form the first union while part-time employees are less likely to form a union. However, part-time employment in the county with higher unemployment rates increases the hazard of union formation of males. Although findings from table 3 suggest that moving is a significant factor for young adult's first union, particularly females, it is possible that the timing of a move contributes to significant differences as well as the type of first union. In tables 4 and 5, therefore, we report estimates from Cox competing risks models predicting the type of first union which includes a series of dummy variables for the time since a move.

In table 4, we find that the timing of a move is more important than a moving event for the first union formation of male young adults. First, the risk of forming any union is highest within 3 months of a move, and increases the hazard of marriage and cohabitation by 2.7 and 1.5 times, respectively, compared to no union. Second, the risk of forming a cohabiting union, but not a marriage, is also significantly higher within 3-6 months of a move ($b=.34$, $p<.05$) and even a move 6 to 12 months prior to union formation more than doubles the hazard of marriage versus no union for men ($b=.81$, $p<.001$). The positive associations, however, disappear after 12 months. The risk of cohabiting versus no union significantly decreases within 12-24 months after a move while the risk of marrying versus cohabiting decreases during that time period. In addition, the risk of forming any union decreases

further more than 24 months after a move. After 24 months the hazard of marriage and cohabitation versus no union ($b = -.66, p < .001$ and $b = -1.08, p < .001$, respectively), and marriage versus cohabitation ($b = -1.60, p < .001$) decreases for male young adults.

Other than moving experiences, male African Americans are less likely than their non-Hispanic non-Black white counterparts to marry regardless of competing risks while Hispanic males are more likely than non-Hispanic non-Black whites to marry and less likely to cohabit. Completing school is negatively related to the hazard of cohabitation versus no union while completing a BA degree increases the hazard of marriage compared to no union. Full-time employment significantly increases the relative risk of marriage versus no union for males by 2.9 times. However, no significant relationship between employment status and union formation according to the county unemployment rates is found. Family background characteristics are significantly related to union formation; living in an intact family decreases the relative risk of cohabitation by about 38% while higher maternal education decreases the relative risk of marriage, regardless of its competing risks. No significant relationship between residence characteristics and union formation is found for male young adults.

Table 5 presents findings from a competing risks model for females. Residential mobility increases the relative risk of marriage regardless of its competing risks while migration (both to better or the same and worse economic conditions) increases a relative risk of cohabitation versus no union. Moreover, the time since a move is significantly related to the hazard of first union for female young adults. We find that the risk of marriage versus no union is highest within three months of a move. During this time the risk of marrying versus no union more than doubles, although there is no effect for the competing risk of marriage versus cohabitation. The risk of marriage versus cohabitation significantly decreases more than 3 months after a move, and the effect is strongest 3-6 months after a move ($b = -1.14, p < .05$) and more than 24 months after a move ($b = -2.25, p < .001$). The relative risk of cohabitation versus no union decreases with time since a move, especially more than 6 months after a move. In addition, after more than 24 months following a move the relative risk of marriage versus no union decreases by about 80%.

We also find that female African Americans are less likely than their non-Hispanic non-Black white counterparts to marry or cohabit versus no union. If marriage is compared to cohabitation, female African Americans are less likely to marry. Educational experiences are important to first union for female young adults. School enrollment increases the relative risk of cohabitation versus no union. Yet, school completion is negatively related to the hazard of first marriage and cohabitation versus no union, except for the finding of no significant relationship between completing an AA degree and marriage. Employment either full-time or part-time increases the relative risk of cohabitation versus no union although no significant association is found in employment status by county unemployment rates. Family background is significantly related to female union formation. Living in an intact family increases the relative risk of marriage, regardless of its competing risks, while it decreases the relative risk of cohabitation versus no union. Higher maternal educational attainment decreases the hazard of marriage and cohabitation versus no union, and if marriage is compared to cohabitation, higher maternal education decreases the relative risk of marriage.

While most residence characteristics do not appear significant for female union formation, living in metropolitan areas is positively related to the relative risk of marriage versus cohabitation.

Discussion

Using a nationally representative sample, this study examines first union formation and moving patterns among young adults in the United States. While much research attention has been paid to union formation, less has been given to geographic mobility as a life course event of young adults. Since the NLSY97 contains longitudinal information on various life course transitions among those who were born between 1980 and 1984, we are able to explore the association between moving and first union formation in conjunction with other life course transitions in great detail. In what follows, we summarize findings from this study and discuss each point.

First, consistent with previous literature (Schoen, Landale, & Daniels 2007), cohabitation is prevalent among both male and female young adults while few are involved in a marital relationship without prior cohabitation. More than 30% of men and 20% of women have not yet formed any union, which indicates a delay in union formation among young adults in the U.S. As such, a large proportion of marriages occur after age 30 (e.g. Copen et al. 2012) are right censored in our study. With regard to gender differences, a large proportion of males have not formed a union while more young females form a union and do so earlier. Previous studies show that females who are in a union often sacrifice their career prospects for a spouse or partner's life course pathways (e.g. family migration Boyle, Feng, & Gayle 2009; Quinn & Rubb 2011). Because the transition to adulthood is an important developmental stage with regard to augmenting human capital and forming a union, this can affect female's future life trajectories. Future research is needed to examine how the life trajectories in career and union formation differ by gender after the early adult years.

Second, descriptive statistics show that a large proportion of African Americans have not been involved in any union, which is consistent with previous research (Goldstein & Kenney 2001). If union formation is regarded as an exploration of life (Arnett 2004), African Americans are disadvantaged, which can lead to lifelong differences in family formation by race/ethnicity. We also find that a large proportion of those who are enrolled in school and complete school cohabit, which suggests that young adults use cohabitation to explore intimate relationships. Moreover, a large share of young full-time employees, who are traditionally considered adults and ready to establish their own family, are single. Family background characteristics produce mixed findings; a large share of those from a stable family structure marry and are single, whereas those with higher mother's education have not formed a union. These results indicate that greater family resources help young adults pursue more self-focused exploration, but at the same time young adults from disadvantaged family backgrounds are involved in a less permanent but explorative union, cohabitation. These findings suggest that the meaning of cohabitation has expanded in that cohabitation now functions as an alternative to marriage or singlehood, or a precursor to marriage (Sassler 2010; Schone, Landale, Daniels 2007). Although similar proportions of those in nonmetropolitan and metropolitan areas marry, nonmetropolitan young adults tend to

cohabit and metropolitan counterparts are single. Given the importance of young adulthood, how the differences in union formation patterns are associated with future trajectories is a subject for future research. Moreover, while macro socioeconomic context influences individual's behaviors (Elder 1998; Shanahan 2000), we find no significant difference in first union formation by unemployment rates in the county of residence.

Third, with regard to moving experiences, significant gender differences are found. A larger share of males who have not moved marry compared to those who move while those who move within the same county cohabit compared to non-movers or migrants. For females, however, a larger share who move within the same county marry and a larger proportion of migrants, especially those who move to counties with worse economic conditions, cohabit. Assuming the transition to adulthood as an exploration period, male young adults who stay in the same place seem to explore their union formation while females who move short-distance tend to explore their union. Our findings also suggest that marriage market changes resulting from a migration event are not associated with union formation. Rather, non-movers and short-distance movers seem to benefit from the marriage market in their familiar environment. The current study, however, does not capture reasons for a move, e.g. college enrollment. Therefore, it is possible that the moving does not necessarily represent a marriage market change. Moreover, it is not clear whether moving occurs before union formation in a given month or whether movers already have a partner before the move. Since moving is a more complicated process involved with family, employment, and housing selection (Clark & Wither 2007), it would be ideal to have variables that ask about detailed dating history and also reasons for a move in future studies.

Fourth, our multivariate analyses reveal that, controlling for other factors, the type of move and the time since a move are significantly related to first union formation for young adults. For males, the type of moving events is not significantly related to union formation. As discussed in the descriptive statistics, males in general do not seem to benefit from marriage market changes. Instead, our findings indicate that moving events for young men are rather for an extension of self-exploration. For females, significant associations between moving and union formation are found. Moving, regardless of the distance moved and economic conditions, is positively related to the first union formation of young females. In contrast to males, moving serves as an expansion of marriage markets or an exploration of union formation for females. In a competing risks model with time since a move, we find that the time since a move is important for males, whereas the time since a move and a moving event are both significant for females, particularly with regard to cohabitation. Having moved less than 3 months prior is positively related to marriage for both men and women, which indicates that the moving may be anticipatory for union formation. The anticipatory move also appears for females; residential mobility, after controlling for all relevant factors including the time since a move, significantly increases the hazard of marriage regardless of its competing risks. Females who expect to marry may have changed their residence within the same county. It is also found that long-distance moves, regardless of its economic conditions, increase the hazard of cohabitation of females versus no union. Although we are not able to trace a dating history before first marriage and cohabitation, this may indicate that females who already have been dating move in with their partner when they move to a new county, or they move to a new county to cohabit with their partner. Females have been

described as “tied migrants” whose job premium is degraded as a result of family migration (Mincer 1978). Our findings suggest that young females are the tied migrants who are more willing to commit to the union and therefore move with their partner and marry or cohabit. Moreover, young females may have sacrificed their career prospects to invest partner relationships as suggested in descriptive findings of early family formation of women. As we already pointed out, however, the underlying mechanism is not clear with the available data in the NLSY97, and is a subject for future research. We also do not rule out the possibility of endogeneity between mobility and union formation; some people tend to move and marry earlier than others. In addition, life course events such as employment, moving, and union formation often occur simultaneously (Guzzo, 2006); a decision to move may be jointly determined with a decision to form a union (Schachter, 2001).

The transition to adulthood is a critical period of human development when various major life course events take place and influence each other. Although it is not clear from this study what mechanisms contribute to close associations between moving and union formation because of a few data limitations (e.g. moving for college and dating history), this study provides empirical evidence about how these two life course events are associated. Moreover, by adding detailed moving experiences - the distance moved, economic conditions, and the time since a move - this study sheds light on moving events that are necessarily to consider when studying the transition to adulthood.

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References

- Amato PR, Landale LS, Havasevich-Brooks TC, Booth A, Eggbeen DJ, Shoen R, McHale SM. Precursors of young women's family formation pathways. *Journal of Marriage and Family*. 2008; 70:1271–1286. [PubMed: 22719134]
- Arnett, JJ. Oxford: 2004. *Emerging adulthood: The winding road from the late teens through the twenties.*
- Arnett, JJ.; Hendry, LB.; Kloep, M.; Tanner, JL. The curtain rises: a brief overview of the book.. In: Arnett, JJ.; Kloep, M.; Hendry, LB.; Tanner, JL., editors. *Debating emerging adulthood: Stage or process?*. Oxford: 2011. p. 3-9.
- Billari FC, Liefbroer AC. Towards a new pattern of transition to adulthood? *Advances in Life Course Research*. 2010; 15:59–75.
- Box-Steffensmeier, JM.; Jones, BS. *Event History Modeling*. Cambridge: 2004.
- Boyle PJ, Kulu H, Cooke T, Gayle V, Mulder CH. Moving and union dissolution. *Demography*. 2008; 45(1):209–222. [PubMed: 18390300]
- Boyle P, Feng Z, Gayle V. A new look at family migration and women's employment status. *Journal of Marriage and Family*. 2009; 71(2):417–431.
- Bozick R, DeLuca S. Better late than never? Delayed enrollment in the high school to college transition. *Social Forces*. 2005; 84(1):531–554.
- Bureau of Labor Statistics. 2013. Retrieved from <http://www.bls.gov/lau/lauov.htm>
- Cadwallader, M. *Migration and residential mobility: Macro and Micro approaches*. University of Wisconsin Press; Madison, WI: 1992.

- Carlson M, McLanahan SS, England P. Union formation in fragile families. *Demography*. 2004; 41(2): 237–261. [PubMed: 15209039]
- Center for Human Resource Research. NLSY Handbook. The Ohio State University; Columbus, OH: 2014. Retrieved from <http://www.nlsinfo.org/nlsy97/nlsdocs/nlsy97/97sample/sample.html>
- Cherlin AJ. The deinstitutionalization of American Marriage. *Journal of Marriage and Family*. 2004; 66:848–861.
- Cherlin AJ. Demographic Trends in the United States: A review of research in the 2000s. *Journal of Marriage and Family*. 2010; 72:403–419. [PubMed: 22399825]
- Clark WAV, Withers SD. Family migration and mobility sequences in the United States: Spatial mobility in the context of the life course. *Demographic Research*. 2007; 17(20):591–622.
- Clark WAV, Huang Y. The life course and residential mobility in British housing markets. *Environment and Planning A*. 2003; 35:323–339.
- Clark RL, Glick JE, Bures RM. Immigrant families over the life course: Research directions and needs. *Journal of Family Issues*. 2009; 30(6):852–872.
- Cleves, M.; Gutierrez, RG.; Gould, W.; Marchenko, YV. *An Introduction to Survival Analysis using Stata*. 3rd edition. Stata: 2010.
- Copen CE, Daniels K, Vespa J, Mosher WD. First marriages in the United States: Data from the 2006-2010 National Survey of Family Growth. *National Health Statistics Reports*. 2012; 49
- Côte J, Bynner JM. Changes in the transition to adulthood in the UK and Canada: the role of structure and agency in emerging adulthood. *Journal of Youth Studies*. 2008; 11(3):251–268.
- DaVanzo JS. Repeat migration in the United States: Who moves back and who moves on? *The Review of Economics and Statistics*. 1983; 65(4):552–559.
- Elder GH. The Life Course as Developmental Theory. *Child Development*. 1998; 69(1):1–12. [PubMed: 9499552]
- Elder GH Jr. King V, Conger RD. Attachment to place and migration prospects: A developmental perspective. *Journal of Research on Adolescence*. 1996; 6(4):397–425.
- Erikson, EH. *Identity: Youth and Crisis*. W.W. Norton & Company, Inc.; 1968.
- Franklin, RS. 2000 Special Report. CENSR-12. U. S. Census Bureau; Washington, DC: 2003. Migration of the young, single, and college educated: 1995 to 2000..
- Furstenberg, FF.; Rumbaut, RG.; Settersten, RA, Jr.. On the frontier of adulthood: Emerging themes and new directions.. In: Settersten, RA., Jr.; Furstenberg, FF.; Rumbaut, RG., editors. *On the Frontier of Adulthood: Theory, Research, and Public Policy*. The University of Chicago Press; Chicago, IL: 2005. p. 3-25.
- Garasky S, Haurin JR, Haurin DR. Group living decisions as youths transition to adulthood. *Journal of Population Economics*. 2001; 14:329–349.
- Geist C, McManus PA. Geographic mobility over the life course: motivations and implications. *Population, Space, and Place*. 2008; 14:283–303.
- Goldscheider, F.; Goldscheider, C. *The changing transition to adulthood. Leaving and returning home*. SAGE; Thousand Oaks, CA: 1999.
- Goldstein JR, Kenney CT. Marriage delayed or marriage forgone? New cohort forecasts of first marriage for U.S. women. *American Sociological Review*. 2001; 66:506–519.
- Guzzo KB. The relationship between life course events and union formation. *Social Science Research*. 2006; 35:384–408.
- Jacobsen JP, Levin LM. Marriage and migration: comparing gains and losses from migration for couples and singles. *Social Science Quarterly*. 1997; 78(3):688–709.
- Jampaklay A. How does leaving home affect marital timing? An event-history analysis of migration and marriage in Nang Rong, Thailand. *Demography*. 2006; 43(4):711–725. [PubMed: 17236543]
- Kulu H, Milewski N. Family change and migration in the life course: An introduction. *Demographic Research*. 2007; 17:567–590.
- Kulu H, Steele F. Interrelationships between childbearing and housing transitions in the family life course. *Demography*. 2013; 50:1687–1714. [PubMed: 23703223]
- Lewis SK, Oppenheimer VK. Educational assortative mating across marriage markets: Non-Hispanic Whites in the United States. *Demography*. 2000; 37(1):29–40. [PubMed: 10748987]

- Lichter DT, McLaughlin DK, Kephart G, Landry DJ. Race and the retreat from marriage: A shortage of marriageable men? *American Sociological Review*. 1992; 57:781–799.
- Lichter DT, Anderson RN, Hayward MD. Marriage markets and marital choice. *Journal of Family Issues*. 1995; 16(4):412–431.
- Magdol L. Is moving gendered? The effects of residential mobility on the psychological well-being of men and women. *Sex roles*. 2002; 47:553–560.
- Manning, WD.; Brown, SL.; Payne, KK. Two decades of stability and changes in age at first union formation.. Paper to be presented at the annual meeting of the Population Association of America, 2013. 2013. Retrieved from <http://paa2013.princeton.edu/papers/132048>
- Massey DS, Arango J, Hugo G, Kouaouci A, Pellegrino A, Taylor JE. Theories of international migration: A review and appraisal. *Population and Development Review*. 1993; 19(3):431–466.
- Michielin F, Mulder CH. Family events and the residential mobility of couples. *Environment and Planning A*. 2008; 40:2770–2790.
- Mincer J. Family migration decisions. *Journal of Political Economy*. 1978; 86(5):749–773.
- Mulder CH, Clark WAV. Leaving home for college and gaining independence. *Environment and Planning A*. 2002; 34:981–999.
- Oppenheimer VK. A theory of marriage timing. *American Journal of Sociology*. 1988; 94:563–591.
- Oppenheimer VK. Cohabiting and marriage during young men's career-development process. *Demography*. 2003; 40(1):127–149. [PubMed: 12647517]
- Quinn MA, Rubb S. Spouse overeducation and family migration: Evidence from the U. S. *Journal of Family and Economic Issues*. 2011; 32(1):36–45.
- Rindfuss RR. The young adult years: Diversity, structural change and fertility. *Demography*. 1991; 28(4):493–512. [PubMed: 1769399]
- Sassler S. Partnering across the life course: Sex, relationships, and mate selection. *Journal of Marriage and Family*. 2010; 72:557–575. [PubMed: 22822268]
- Schachter, J. Current Population Reports. U. S. Census Bureau; Washington, DC: 2001. Why People Move: Exploring the March 2000 Current Population Survey.; p. 23-204.
- Schoen R, Landale N, Daniels K. Family transitions in young adulthood. *Demography*. 2007; 44(4): 807–820. [PubMed: 18232212]
- Shanahan MJ. Pathways to adulthood in changing societies: Variability and mechanisms in life course perspective. *Annual Review of Sociology*. 2000; 26:667–692.
- Sharkey P. Temporary integration, resilient inequality: Race and neighborhood change in the transition to adulthood. *Demography*. 2012; 49:889–912. [PubMed: 22570056]
- Smock PJ. Cohabitation in the United States: An appraisal of research themes, findings, and implications. *Annual Review of Sociology*. 2000; 26:1–20.
- Smock PJ, Manning WD. Cohabiting partners' economic circumstances and marriage. *Demography*. 1997; 34(3):331–341. [PubMed: 9275243]
- Speare A Jr. Goldscheider FK. Effects of marital status change on residential mobility. *Journal of Marriage and the Family*. 1987; 49(2):455–464.
- Tienda M, Wilson FD. Migration and the earnings of Hispanic men. *American Sociological Review*. 1992; 57(5):661–678.
- US. Census Bureau. 2011. Retrieved from <http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>
- USDA. Rural population and migration: Trend 2_nonmetro population growth slows. 2007. Retrieved from <http://www.ers.usda.gov/Briefing/Population>
- U.S. National Center for Health Statistics. 2011. Retrieved from <http://www.cdc.gov/nchs/data/hus/2011/007.pdf>
- Widmer RD, Ritschard G. The de-standardization of the life course: Are men and women equal? *Advances in Life Course Research*. 2009; 14:28–39.

Table 1

Description of Sample by Type of First Union Formation (male)

	No union	Married	Cohabited	Total
Proportion	.34	.13	.53	1.00
Mean age at first union (years)	-	25.20 (.10)	24.12 (.09)	24.17 (.09) ***
Race/ethnicity				
African American	.40	.09	.52	1.00 ***
Hispanic	.33	.17	.50	1.00 ***
Non-Black Non-Hispanic whites and others	.33	.13	.54	1.00 ***
School Enrollment				
Not enrolled in school	.41	.11	.47	1.00 ***
Enrolled in school	.21	.16	.62	1.00 ***
Highest degree completed				
Less than high school diploma	.40	.05	.55	1.00 ***
High school completion	.32	.12	.57	1.00 ***
AA degree completion	.34	.15	.51	1.00 ***
Bachelor degree completion	.35	.21	.44	1.00 ***
Employment status				
Not working	.31	.12	.57	1.00 ***
Employed part-time	.31	.15	.55	1.00 **
Employed full-time	.37	.14	.49	1.00 ***
Family Backgrounds				
Not living in an intact family	.31	.10	.60	1.00 ***
Living with both biological parents in 1997	.36	.16	.48	1.00 ***
Maternal education (years) ^a	13.16 (.10)	12.84 (.15)	12.68 (.10)	13.06 (.10) ***
Residence characteristics				
Living in nonmetro areas	.25	.14	.62	1.00 ***
Living in metro areas	.36	.13	.51	1.00 ***
Unemploy rate in county of residence (%) ^a	6.77 (.17)	6.89 (.22)	6.89 (.18)	6.83 (.17)
Ever experienced mobility (proportions)				
No move	.34	.13	.53	1.00
Residential mobility	.37	.00	.63	1.00
Migration	.47	.08	.46	1.00
to higher unemployment rates	.46	.08	.47	1.00
to lower or the same unemployment rates	.48	.08	.45	1.00
Duration between move and union (months)		19.4 (1.45)	20.0 (.96)	19.9 (.80)

	No union	Married	Cohabited	Total
		1.00	1.00	1.00
0-3 months	-	.21	.24	.23
3-6 months	-	.09	.14	.13
6-12 months	-	.28	.18	.20
12-24 months	-	.20	.20	.20
more than 24 months	-	.23	.24	.24

Strata=1, PSUs = 196, Number of person months= 412,181; Population size= 9,100,916

Note: Observation time ends with first union formation. Numbers are proportions except those indicated. Numbers in parentheses are standard errors. All variables are adjusted under survey setting. The *Chi-Square* test is used to test the sample distribution except the variables with ^a which use *one-way ANOVA* to test mean differences between groups.

**
 $p < .01$

 $p < .001$

Table 2

Description of Sample by Type of First Union Formation (female)

	No union	Married	Cohabited	Total
Proportion	.23	.15	.62	1.00
Mean age at first union (years)	-	24.64 (.12)	23.29 (.10)	23.40 (.10) ***
Race/ethnicity				
African American	.39	.10	.51	1.00
Hispanic	.21	.19	.59	1.00
Non-Black Non-Hispanic whites and others	.20	.15	.64	1.00
School Enrollment				
Not enrolled in school	.34	.13	.53	1.00 ***
Enrolled in school	.15	.17	.68	1.00 ***
Highest degree completed				
Less than high school diploma	.30	.08	.62	1.00 ***
High school completion	.21	.13	.66	1.00 ***
AA degree completion	.21	.21	.58	1.00 ***
Bachelor degree completion	.27	.19	.55	1.00 ***
Employment status				
Not working	.19	.14	.67	1.00 ***
Employed part-time	.18	.16	.66	1.00 **
Employed full-time	.35	.16	.49	1.00 ***
Family Backgrounds				
Not living in an intact family	.20	.10	.69	1.00 ***
Living with both biological parents in 1997	.27	.19	.54	1.00 ***
Maternal education (years) ^a	13.00 (.13)	12.83 (.17)	12.83 (.09)	13.12 (.10)
Residence characteristics				
Living in nonmetro areas	.15	.14	.71	1.00 ***
Living in metro areas	.26	.15	.59	1.00 ***
Unemploy rate in county of residence (%) ^a	6.88 (.20)	6.77 (.24)	6.77 (.19)	6.81 (.20)
Ever experienced mobility (proportions)				
No move	.23	.15	.61	1.00
Residential mobility	.10	.33	.57	1.00
Migration	.31	.03	.65	1.00
to higher unemployment rates	.07	.00	.93	1.00
to lower or the same unemployment rates	.49	.06	.45	1.00
Duration between move and union (months)		18.6 (1.75)	19.2 (.97)	19.1 (.84)
		1.00	1.00	1.00

	No union	Married	Cohabited	Total
0-3 months	-	.29	.29	.29
3-6 months	-	.09	.15	.14
6-12 months	-	.13	.15	.15
12-24 months	-	.29	.22	.23
more than 24 months	-	.20	.19	.19

Strata=1, PSUs=198, Number of person months= 328,509; Population size= 8,565,430

Note: Observation time ends with first union formation. Numbers are proportions except those indicated. Numbers in parentheses are standard errors. All variables are adjusted under survey setting. The *Chi-Square* test is used to test the sample distribution except the variables with ^a which use *one-way ANOVA* to test mean differences between groups.

**
 $p < .01$

 $p < .001$

Table 3

Cox Proportional Hazard Models Predicting First Union Formation

	Model 1		Model 2		Model 3		Model 4	
	Male	female	Male	Female	Male	female	Male	female
Moving factors ^{tv} (ref: no move)								
any moves	1.35	1.88 **						
residential mobility			1.21	1.91 †	1.21	1.91 †	1.16	1.86 †
migration			1.38	1.88 *				
to higher unemployment rates					1.56	2.17 †	1.80	2.35 *
to lower or the same unemp rates					1.19	1.57 †	1.05	1.59 †
Race/ethnicity (ref: non-Black non-Hispanic whites and others)								
African American							.88	.52 ***
Hispanic							.87	.97
School enrollment ^{tv}								
enrolled in school							1.10	1.22 **
Highest degree completed ^{tv} (ref: less than high school)								
completed high school							.69 **	.57 ***
completed AA degree							.50 ***	.43 ***
completed Bachelor degree							.43 ***	.26 ***
Employment ^{tv} (ref: not working)								
employed part-time							.54 †	1.25
employed full-time							1.65 †	1.24
Interaction terms								
part-time * county unemp rates							1.10 †	.98
full-time * county unemp rates							.98	1.01
Family backgrounds								
living in intact family in 1997							.69 ***	.71 ***
maternal education							.97 *	.96 ***
Residence characteristics								
living in metro areas ^{tv}							.92	.92
county unemployment rates							1.00	.99

Males: Strata=1, PSUs = 196, Number of person months= 412,181; Population size= 9,100,916 Females: Strata=1, PSUs=198, Number of person months= 328,509; Population size= 8,565,430

Note: All variables are adjusted under survey setting. ^{tv} indicates time-varying variables whose values vary by time.

† $p < .10$

*
 $p < .05$

**
 $p < .01$

 $p < .001$

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Table 4

Cox Competing Risks Models Predicting Type of First Union Formation (male)

	Marriage vs single		Cohabitation vs single		Marriage vs cohabitation	
	b	e ^b	b	e ^b	b	e ^b
Moving factors ^{iv} (ref: no move)						
residential mobility migration	. ^a	-	.41	1.51	. ^a	-
from higher unemploy rates	.07	1.07	.76 [†]	2.13	.28	1.32
from lower or the same unemploy rates	-.42	.65	.24	1.27	-.29	.75
Time since move (ref: no move)						
Within 3 months	.98 ^{***}	2.68	.37 ^{***}	1.45	.26	1.30
3-6 months	.40	1.49	.34 [*]	1.41	-.54	.58
6-12 months	.81 ^{***}	2.26	-.08	.92	-.01	.99
12-24 months	.22	1.24	-.24 [†]	.79	-.69 [*]	.50
More than 24 months	-.66 ^{***}	.52	-1.08 ^{***}	.34	-1.60 ^{***}	.20
Race/ethnicity (ref: non-Black non-Hispanic whites and others)						
African American	-.45 ^{**}	.64	-.10	.90	-.38 [*]	.69
Hispanic	.26 [†]	1.29	-.24 [*]	.79	.27 [†]	1.31
School enrollment ^{iv}						
enrolled in school	.09	1.09	.03	1.03	.13	1.14
Highest degree completed ^{iv} (ref: less than high school)						
completed high school	.29	1.34	-.40 ^{**}	.67	.20	1.22
completed AA degree	.37	1.45	-.82 ^{***}	.44	.23	1.25
completed Bachelor degree	.52 [*]	1.69	-1.02 ^{***}	.36	.31	1.37
Employment ^{iv} (ref: not working)						
employed part-time	-.39	.68	-.62	.54	-.59	.55
employed full-time	1.05 [*]	2.87	.43	1.54	.63	1.88
Interaction terms						
employed part-time [*] county unemp rates	.08	1.08	.10	1.10	.09	1.10
employed full-time [*] county unemp rates	-.10	.91	-.01	.99	-.06	.94
Family backgrounds						
living in intact family in 1997	.13	1.14	-.49 ^{***}	.62	.16	1.17
maternal education	-.08 ^{***}	.93	-.03	.97	-.06 ^{**}	.94
Residence characteristics						
living in metro areas ^{iv}	-.05	.96	-.04	.96	.07	1.07
county unemployment rates	.03	1.03	-.00	1.00	.01	1.01

Note: “a” indicates only few cases (or no case) included in the estimation. All variables are adjusted under survey setting. *tv* indicates time-varying variables whose values vary by time.

$$^{\dagger} p < .10$$

$$^* p < .05$$

$$^{**} p < .01$$

$$^{***} p < .001$$

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Table 5

Cox Competing Risks Models Predicting Type of First Union Formation (female)

	Marriage vs single		Cohabitation vs single		Marriage vs cohabitation	
	b	e ^b	b	e ^b	b	e ^b
Moving factors ^{iv} (ref: no move)						
residential mobility migration	1.27 *	3.55	.61	1.84	1.50 *	4.50
to higher unemploy rates	.11	1.11	1.21 **	3.35	.47	1.60
to lower or the same unemploy rates	-.a	-	.96 ***	2.62	-.a	-
Time since move (ref: no move)						
Within 3 months	.80 *	2.23	.14	1.15	.34	1.41
3-6 months	-.62 †	.54	-.11	.90	-1.14 **	.32
6-12 months	-.40	.67	-.34 *	.71	-.93 ***	.40
12-24 months	-.14	.87	-.66 ***	.52	-.73 **	.48
More than 24 months	-1.56 ***	.21	-1.46 ***	.23	-2.25 ***	.11
Race/ethnicity (ref: non-Black non-Hispanic whites and others)						
African American	-1.11 ***	.33	-.60 ***	.55	-.75 ***	.47
Hispanic	-.14	.87	-.05	.96	-.17	.84
School enrollment ^{iv}						
enrolled in school	.06	1.06	.19 **	1.21	.04	1.04
Highest degree completed ^{iv} (ref: less than high school)						
completed high school	-.71 *	.49	-.53 ***	.59	-.83 *	.44
completed AA degree	-.53	.59	-.89 ***	.41	-.62	.54
completed Bachelor degree	-1.17 ***	.31	-1.32 ***	.27	-1.29 ***	.28
Employment ^{iv} (ref: not working)						
employed part-time	-.97	.38	.45 †	1.57	-1.01	.36
employed full-time	-.48	.62	.33 †	1.39	.12	.48
Interaction terms						
employed part-time * county unemp rates	.12	1.13	-.05	.95	.12	1.13
employed full-time * county unemp rates	.11	1.11	-.00	1.00	.12	1.13
Family backgrounds						
living in intact family in 1997	.38 †	1.47	-.51 ***	.60	.47 *	1.60
maternal education	-.11 *	.90	-.03 **	.97	-.11 *	.90
Residence characteristics						
living in metro areas ^{iv}	.33	1.39	-.14	.87	.42 †	1.52
county unemployment rates	-.13	.88	.01	1.01	-.13	.88

Note: “a” indicates only few cases (or no case) included in the estimation. All variables are adjusted under survey setting. *tv* indicates time-varying variables whose values vary by time.

$$^{\dagger} p < .10$$

$$^* p < .05$$

$$^{**} p < .01$$

$$^{***} p < .001$$