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ORIGINAL PAPER

The Changing Nature of the Association Between Student Loan Debt and Marital Behavior in Young Adulthood

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Abstract
In this study, we compared young adults from the NLSY 1979 and the NLSY 1997 to examine how the relationship between student debt and the likelihood of marrying changed across cohorts, in light of the growing acceptance of non-marital cohabitation. In the 1997 cohort, student loan debt among college-attending young adults was associated with delays in marriage, but not in the 1979 cohort. Among men, the positive association between education debt and marriage in the 1979 cohort was no longer evident for the 1997 cohort of young men. Our findings provide further evidence that rising student debt is reshaping relationship formation among college-going youth, and that as cohabitation has become more widespread, social and economic disparities in who marries without cohabiting first have increased.

Keywords Cohabitation · Marriage · Student debt · Young adulthood

Introduction

The educational and relationship formation experiences of contemporary American young adults differ considerably from those of previous cohorts. Those coming of age in the twenty-first century are more likely to have pursued post-secondary schooling (Furstenberg et al. 2004), but less inclined to finish in 4 years (Bound et al. 2007). College is considerably more expensive, and yet the returns to a college degree remain high (Hout 2012; Torche 2011). While the age of first union formation has remained relatively constant, many young adults now enter cohabiting unions prior to marriage (Manning et al. 2014). Young people today also marry later than they did in the closing decades of the twentieth century and cohabitation prior to marriage has gone from being a selective practice to normative behavior for young Americans. Marital formation trends are also becoming increasingly stratified, with indicators of future financial stability, such as educational attainment, increasing one's likelihood of a making a marital transition in young adulthood (Addo 2014; Sassler and Goldscheider 2004; Sweeney 2002; Xie et al. 2003). In light of these changes, it is perhaps unsurprising that scholars have been interested in examining how broad social and economic changes, in particular those related to educational attainment, are implicated in marital formation in young adulthood (Sironi and Furstenberg 2012; Sweeney 2002).

Recently, scholars, policy makers, and politicians have voiced concern over rising student loan debt, and its potential impact on young adults' ability to transition successfully into adult social roles (Addo 2014; Houle and Berger 2015; Nau et al. 2015). According to the National Center for Education Statistics, 49% of first-time full-time undergraduates held federal loans in 2012–2013, up nine percentage points since 2000 (Woo and Horn 2016). Aggregate student loan debt in the US now surpasses $1.4 trillion, second only to home mortgage debt on the household balance sheet (Federal Reserve Board 2018). This unprecedented growth in young adults' debt portfolios has sparked concerns about the impact of student debt on young adult outcomes. Recent

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research shows that high student debt burdens are associated with increased difficulty of college completion and longer times to degree (Dwyer et al. 2012), as well as family formation (Addo 2014; Nau et al. 2015) and living arrangements (Houle and Warner 2017). This growing body of evidence suggests that, in just a few decades, student debt has redefined the economic and financial landscape of young adulthood. And yet, no research to our knowledge has examined how the link between student loan debt and young adult relationships has changed across cohorts.

The current study builds on this growing literature to examine how the relationship between student loan debt and entrance into marriage has changed across two cohorts of young adults coming of age in the late twentieth and early twenty-first centuries. To do this, we use data of youth who ever attended a post-secondary program or institution drawn from two cohorts that span two generations: the National Longitudinal Study of Youth (NLSY) 1979 Cohort, whose unions were largely formed between 1985 and 1996, and a recent cohort of similarly aged young adults from the NLSY 1997 who were observed between 2000 and 2015. Our findings indicate that debt was associated with reduced odds of marriage among the recent cohort of young adults who would have directly married without first living together—a group most prevalent among the college educated (Sassler and Miller 2017). One interpretation of this finding is that student debt has become more of an economic barrier across cohorts. Young women of the NLSY97 were about 2% less likely to marry in a given year for a 1% change in student loan debt. We also find that the association between student debt and direct marriage was positive in the NLSY79 cohort, but became negative in the NLSY97 cohort, which is also consistent with the expectation that student debt has become an economic barrier to marriage across cohorts. Even as cohabitation has diffused across the educational spectrum (Kennedy and Bumpass 2008) to include the college educated, important economic distinctions in who marries directly are expanding.

Changing Context of Union Formation Behavior and the Evolving Role of Economic Resources

Over the past few decades, family formation behaviors have experienced dramatic changes (Cherlin 2004; Lichter and Qian 2004). The prevalence of "shotgun marriages," or weddings performed following a conception and prior to a birth declined (England et al. 2012), non-marital births increased and growing proportions of unmarried adults began living with romantic partners without marriage (Chandra et al. 2005). Among economically disadvantaged groups, cohabitation had long served as "a poor man's marriage," though few states now allow common-law marriage (Bowman 2010). Other trends highlight the fragility of marriage, including childhoods characterized by marital instability and flux, leading some young adults to seek alternative mechanisms to better assess relationships prior to marriage. Cohabitation prior to marriage is increasingly seen by contemporary young adults as the best way of ensuring that one is with the "right" partner, and that the relationship will not end in divorce (Manning et al. 2007; Miller et al. 2011; Reed 2006).

Cohabitation has gone from being the practice of a select group of individuals to normative behavior for young Americans. In the late 1980s, about a quarter of all ever married women under the age of 45 had cohabited (only) with their husbands prior to marriage (London 1991). Less than a decade later, premarital cohabitation was considered normative. Among those married for the first time from 1997 to 2001, 62% had ever cohabited, with 45% having lived only with their spouse prior to marriage; only 38% of couples who had wed during this time period had married directly (without having lived with their spouse or another partner) (Kennedy and Bumpass 2008, Table 4). Notwithstanding the rapid transformation of union formation patterns within a generation, to date relatively little is known about whether the economic factors shaping direct marriage have remained the same.

In previous generations, men's (rather than women's) economic position and labor market returns dictated marital formation (Clarkberg 1999; Goldstein and Kenney 2001; Oppenheimer et al. 1997; Sassler and Goldscheider 2004; Xie et al. 2003). Oppenheimer (1988) theorized that a man's economic resources mattered not only for the likelihood of transitioning into marriage, but also for the timing of transition. Men enrolled in post-secondary programs were less likely to transition to marriage early (Hogan 1978), but accumulated schooling and high educational attainment increased the probability of marrying at older ages (Sassler and Goldscheider 2004; Thornton et al. 1995).

The relationship between women's economic resources and marital patterns has been less consistent over time. At the macro level, studies find evidence to suggest an inverse relationship between labor market characteristics and marriage prospects, especially for white women (Blau et al. 2000). But studies using micro-level data find women with greater earnings were not remaining single. More educated women and those with full-time employment prospects were more likely to transition to marriage, though sometimes after a prolonged search (Goldscheider and Waite 1986). As women's post-secondary enrollment, college graduation, and labor market participation have all steadily increased, surpassing men's in the early 1990s, women who acquired greater labor market rewards could subsidize their spousal search, prolonging it to find a better match. Fears that women's growing economic independence would reduce their desires to wed have not been born out, as women with the

best economic prospects—those with a college degree—are now more likely to have married by age 30 than women with lower levels of schooling (Copen et al. 2012).

Even though the association between women's economic fortunes and marriage have shifted over time, studies show an inverse relationship between educational attainment and entering into less formal unions such as cohabitation. Contemporary young adults are more likely to pursue post-secondary education than those of a generation ago, and while education liberalizes attitudes (Loftus 2001), school participation reduces cohabitation (Sassler and Goldscheider 2004; Thornton et al. 1995). Furthermore, while cohabitation has increased across all education groups, the most highly educated remain the least likely to cohabit (Chandra et al. 2005; Kennedy and Bumpass 2008; Sassler and Goldscheider 2004; Sassler and Miller 2017). The growing proportion of the population with some post-secondary schooling might then depress growth in the proportions cohabiting. Recent research suggests that with the growing acceptance of non-marital cohabitation, increased education loan debt levels are associated with delays in or avoidance of marriage (Addo 2014), but it is less clear as to how this association may have changed across cohorts.

Changes in Post-secondary Education and the Rise in Student Loan Debt in Young Adulthood

The current generation of young adults are grappling with record levels of student debt, which has replaced home mortgages as the primary form of wealth-building debt held by young adults (Houle 2014a; Houle and Berger 2015). Credit card and other forms of unsecured debt are also higher among the current cohort of young adults than previous cohorts. Over the last 30 years, household debt has risen dramatically in the United States, primarily driven by a massive increase in the supply of credit due to financial deregulatory policies, and an increased need for credit as families struggled to keep up with stagnating wages (Campbell 2010; Houle 2014b; Leicht and Fitzgeraled 2006). Student loan debt, however, is unlike other forms of debt, for two key reasons. First, it is extremely difficult legally to discharge student loans in the event of financial uncertainty or insolvency (Atkinson 2010), and thus student debt may have long-reaching consequences across the life course. Several loan providers do allow borrowers to defer payments in the event of financial or material hardships, but oftentimes interest continues to accrue during these periods. Second, the attachment of student loan debt to higher education and investments in human capital normalizes debt acquisition. In other words, while student loan debt may have become more burdensome for young people over time, it has also become more typical behavior for young adults attending college.

Houle (2014a) found that as a percentage of total debt holdings, education loan debt increased thirty percentage points among young adults with at least 4 years of post-secondary education between the NLSY79 and NLSY97 cohorts. Although the student loan program has been in existence since 1975, student loan offerings only recently expanded to include a diverse set of products, many of which have increased the financial burden for college attendees and their families. Most notably among these was the introduction of the unsubsidized Stafford Loan in 1992, which granted loan access independent of family income. Borrowing related to the introduction of Stafford Loans took off in the late 1990s and skyrocketed in the 2000s—long after the NLSY79 youth would have completed their undergraduate careers (Hershbein and Hollenbeck 2013), but just around when NLSY97 youth would be of age to pursue post-secondary education.

Conceptual Framework: A Changing Relationship Between Debt and Direct Marriage Across Cohorts

Previous research as outlined above demonstrates that economic resources are important predictors of the occurrence and timing of marriage. As debt becomes a more prominent feature of the economic landscape for young adults, it is increasingly important to understand the link between indebtedness and marital formation. On the one hand, debt may have become a greater impediment to marriage as young adults have been increasingly thrust into the red over time. On the other hand, as student loan debt becomes more normative, and the stigma of debt has declined, debt may be less of an impediment to marriage today than it was in the past.

An intuitive explanation is that, as debt increased in young adulthood, it has become a greater impediment to marital formation among young adults. Attempts to explain the growing stratification in marital formation outcomes in young adulthood has moved beyond the conventional socio-economic indicators of good fortune that increase attractiveness in the marriage market (Sassler and Goldscheider 2004), to exploring potential markers that can prolong search and signal future instability (Addo 2017). Student debt may be one of these markers. For example, if marriage means that the couple pools their resources (Pahl 1989), individuals may be less likely to enter marriage if one (or both) of the partners has substantial debt that was acquired prior to the relationship. This is particularly the case if servicing the debt reduces household income, diminishes the ability to save or acquire new assets, and/or is difficult to discharge—as is the case with student debt. There is some evidence to support this notion among cohabiting couples. Young cohabiters are less likely to hold financial assets that would increase couple-level debt, such as joint credit cards, and

those that do have them were more likely to separate after 2 years (Addo 2017). Although Addo (2017) grouped all form of unsecured consumer debt, the results indicated a hesitancy to acquire a potential partner's debt.

Other evidence also suggests that student debt may be more likely to impede marriage today than in the past. When asked about how their debt is affecting their lives, young people report that their debt has prevented them from achieving a number of adult social roles, including starting a family, buying a home, and getting married (USA Today/NEFE 2006). Many couples also express strong preferences for what they refer to as "real weddings," fantasy lavish celebrations rather than modest ceremonies or courthouse legal procedures (Smock et al. 2005). While cheaper weddings are possible, elaborate weddings generally require considerable savings and extended planning periods. That marriage is increasingly seen as a "capstone" experience (Cherlin 2004) to be delayed until necessary prerequisites are obtained may therefore increase the likelihood that couples view negative financial resources as potential impediments to transitioning.

Taken together, this research suggests that as student debt increases across cohorts, the association between student debt and delaying marriage may become stronger. Student debt may have become a new economic barrier to marriage for young adults, who increasingly feel that their debt holds them back from transitioning to adulthood and forming a family. As debt increases across cohorts (Houle 2014a), this barrier may become harder for young people to overcome, making cohabitation a more attractive option than marriage.

While the above predicts that the negative association between debt and marital formation is increasing over time, an alternative explanation is that this association is decreasing over time, in part due to the declining stigma of debt in US culture. Historically, debtors have been stigmatized as irresponsible and irrational, and those who were debt-free were seen as paragon of responsibility and self-worth (Hyman 2011). Indeed, debt is a morally charged term, that in many cultures is synonymous with "sin," "guilt" and "criminal" (Graeber 2011). But while debt and debtors have historically been stigmatized, the normative nature of debt accumulation among younger people may be linked to declining stigma (Durkin 2000). For instance, a large proportion of young people report that taking on student loan or credit card debt is increasingly necessary (USA Today/NEFE 2006) in order to participate in a modern economy. Many contemporary young adults recognize that it is increasingly necessary to take on debt in order to bridge the gap between the costs of college and consumer goods, on the one hand, and their economic resources, on the other. Indeed, recent work by Dwyer et al. (2011) provides support for this perspective; they found that debt was positively associated with self-esteem and mastery among a recent cohort of young adults. Instead of invoking feelings of shame and diminished self-worth, young people instead viewed student loan debt as an investment that allowed them to pursue their life goals. If the stigma of debt has declined over time—and young people see debt as helping them attain their goals—then debt may be less of a barrier among more recent cohorts relative to past ones not only to cohabitation, but also to marriage. Debt holdings should therefore be less of an impediment in the marriage market for more recent cohorts of young adults than for previous cohorts.

While the above theoretical explanations suggest that economic barriers and stigma may be the main mechanisms linking debt and marital formation, changes in the association may reflect changes in preferences, or selection. In other words, student debt accrual is increasing the desire to marry directly, or not, and this relationship has shifted across cohorts. Our analytic methods cannot directly test for this selection argument. We control, however, for a host of individual and family background demographic and socioeconomic characteristics that are associated with a young adult's propensity to marry to address this limitation.

Other Factors Associated with Union Formation

Changes in the demographic and lived experiences of these two cohorts studied are also considerable, and a closer look at shifts in union formation patterns must account for these. Young adults who came of age in the early years of the twenty-first century are more racially and ethnically diverse than their counterparts just a generation earlier (Johnson and Lichter 2010), and marital rates are stratified by race, with Black women least likely to marry or marry early (Addo 2012; Raley et al. 2015). Increasingly, Latinx young adults, both those born in the US as well as abroad, are less likely to marry early, with marriage rates increasingly similar to the US born non-Latinx population. Furthermore, Black young adults are significantly less likely than their White counterparts to cohabit, though Hispanics do not differ from Whites in their cohabitation likelihood (Addo 2012; Sassler et al. 2018). The changing racial composition of the population may therefore decrease the proportion of adults who delay or forego marriage in young adulthood.

Another potential explanation for changes in the union formation patterns of young adults is related to shifts in the family composition in which children grew up, such as whether parents remained married to each other or divorced. The proportion of children who grew up outside of married, two-parent families increased sizably over the past three decades (Sassler et al. 2009). Young adults who grow up in either single parent or step-family households are more likely to enter cohabiting unions rather than marry than those whose parents remained married to each other (Ryan et al. 2009; Sassler and Goldscheider 2004; Teachman 2003; Thornton 1991). The growing share of youth who

experienced family instability should therefore increase the proportion of adults who delay or choose not to marry in young adulthood and should also increase the likelihood of cohabiting prior to marriage. Marital delay is also expected to increase the likelihood of premarital cohabitation, as later marriage increases the risk of forming alternative unions (Sassler 2010). The shift from required military service to the all-volunteer army reduced the likelihood that young men will have experience with the armed forces (though it has increased for women). The military, however, continues to provide many benefits that make it advantageous to marry, including serving as a mechanism to acquire tuition-free or reduced college education (Teachman 2009).

And finally, recent studies suggest that above and beyond income and education, the value of assets and debts lead to differential outcomes within relationships. A growing body of research points to the increasing importance of consumption-based measures in the romantic lives of young adult among recent cohorts (Dew and Price 2011). Schneider (2011) found that attributes associated with positive net wealth and asset acquisition, such as vehicle ownership, were associated with marriage for young men. More directly, when compared with transitioning into cohabitation or remaining single, Addo (2014) found that while positive financial assets increased the likelihood of direct marriage relative to remaining single for NLSY79 women and men, student loan debt was negatively associated with a marital transition for women. For these reasons, we control for cohort changes in race/ethnicity, family structure of origin, and socioeconomic status.

Methods

Data and Sample

Our analytic samples come from the National Longitudinal Studies, the 1979 cohort (NLSY79) and the 1997 cohort (NSLY97). The NLSY79, the early or older cohort, follows young adults born between 1965 and 1974, who were aged 14–21 as of December 31, 1978. They were first interviewed in 1979 and interviewed annually until 1992 and biennially ever since. The NLSY97, the younger group, contains a more recent cohort of young adult born between 1980 and 1984 who were between the ages 12 and 18 as of December 31, 1996. They were interviewed annually between 1997 and 2011, and then biennially, with the most recent data collection occurring in 2015. Both surveys have extensive information on young adult relationships, their family background, education and labor market characteristics, and financial attributes. In order to create comparable samples across cohorts, each cohort is restricted to youth who were aged 15, 16, and 17 at baseline. For the NLSY79 cohort this includes youth born in 1962, 1963, and 1964, and in 1980, 1981, and 1982 for the NLSY97.

There is very limited information collected on assets and debts in the early waves of the NLSY79, with no separation of debt categories prior to the 1985 interview. As a result, our analysis begins in 1985 when all respondents are at least 20 years of age. Given the recency of data collection and their relative youth, as of the 2015 survey for the NLSY97 the oldest respondents have aged to 34. We therefore follow young adults between age 20 and 34 and use customized longitudinal weights provided by the NLSY to account for differences in sampling design and for panel data analysis. In addition to the age range restriction, two additional sample criteria were imposed. The first condition retained only young adults that have not experienced a marital transition prior to the first study wave: 1985 for NLSY79, and before the YAST20 asset module, when debt info was first ascertained for the entire sample, for NLSY97. The second condition was to include only youth who were ever enrolled in a post-secondary educational program (52% from NLSY79 and 66% from NLSY97). After removing observations that were missing, our final analytic sample consists of 778 women and 782 men from the NLSY79 cohort and 1450 women and 1278 men from NLSY97.

Measures

First Marriage

Our dependent variable examines those who married directly, without a prior cohabitation, compared to married respondents who had cohabited prior to their first marriage (whether with their spouse or a previous partner); those who remained never married serve as the reference category. Small cell size prevented us from separately analyzing youth who only cohabited with their spouse from those who cohabited with a partner but subsequently married someone else. There were other challenges with properly coding information on cohabitation. The NLSY79 did not include a question on premarital cohabitation until 1991, when a retrospective question was included; it is therefore difficult to categorize respondents who married their first cohabiting partner, who were not observed cohabiting with a partner prior to marriage (if they lived with them for less than the duration between survey waves, for example), or who did not answer the retrospective question; such respondents are necessarily excluded from the analysis (N = 380). For the NLSY97, several respondents had first spouses or partners that did not match with a unique partner id, which made it impossible to confirm whether the respondent married his/her cohabiting partner or someone else (N = 415).

Student Loan Debt

For NLSY79 student loan debt was asked each survey wave starting in 1985, with the exception of 1987 and 1991. For NLSY97 student loan debt was obtained from the age 20, 25, and 30 debt and assets modules (YAST). However, while these YAST modules are colloquially known as the age 20, 25, and 30 modules, respondents do not necessarily receive the modules at these specific ages (for example, respondents answered the YAST–25 module between the ages of 23 and 28). Debt is adjusted for inflation and standardized to reflect 2010 US dollars using the Consumer Price Index Research Series (CPI-U-RS) (Bureau of Labor Statistics 2010; Stewart and Reed 1999). Even though accuracy of self-reported debt data is a concern, evidence shows that borrower self-reports and credit reports are extremely similar for nearly all forms of debt, including student debt (Brown et al. 2011). Linear interpolation methods are used to impute debt between YAST modules[1]; the natural log of this measure is included in our empirical models. In both the NLSY79 and 97, respondents are asked about outstanding student loan debt from all sources. In supplemental analyses we evaluated student loan debt in deciles (range 1–10). This specification provided a model fit and results that were consistent with the main analyses (available upon request).

Additional Model Covariates

Current socioeconomic status consists of time varying educational and labor market characteristics. These include enrollment status, which is an indicator for whether the young adult was attending any type of post-secondary institution, and educational attainment, categorized as high school or less (reference), some college, or college degree or more, current full-time employment status, and the respondent's predicted wages. Predicted wages are a regression-based estimated measure from the young adult's hourly wage earnings in the previous calendar year, using all available waves of NLSY data and are estimated separately by gender. Similar to permanent income, predicted wages are considered a better metric of earnings potential when analyzing young adult samples (Haurin et al. 1997; Whittington and Peters 1996). Also included is a measure for military experience based on their current and prior employment history. To capture the youth's financial health, we include measures of the value of all reported financial assets, all unsecured consumer debt, and current home ownership (1 = yes). Similar to the student loan debt measures, unsecured debt, financial assets, and earnings measures are all adjusted for inflation and standardized to reflect 2010 US dollars. They are also all logged and lagged one period.

We include several time invariant family background and demographic characteristics that have been shown to be key determinants of marital formation and were available in both datasets. Family background covariates include whether the youth lived with both biological parents at age 14 (NLSY79) and age 12(NLSY97), the highest educational attainment of either parent, and an indicator if the youth was born outside of the US. Demographic variables consist of the respondent's age, their race or ethnicity, reported as non-Latino Black, Latino, and non-Latino White (reference), as well as a geographic indicator if the respondent was raised in a Southern state. And finally, whether the respondent reports at least one biological child in the household is included as a proxy for parental status.

Analysis Plan

We used discrete time competing risk hazard models in which hazard function estimates were generated based on multinomial logistic models using maximum likelihood (Allison 1984). We estimated the probability in a given year of transitioning from being never married into a first marriage directly versus one that was followed by cohabitation, based on observable time varying and invariant characteristics. The dataset was arranged in a person-year format, with each young adult contributing an observation for every survey year they remained single until they transitioned into a first marriage or the end of the study period. Standard errors were clustered at the individual level using the robust method (Huber 1967), which assumes that observations are independent across individuals and not within. Models were estimated separately for women and men for each cohort and all tables list average marginal effects.

Results

Descriptive Results

The proportion of young adults who transitioned into a first marriage by age 34 declined considerably between the NLSY79 and NLSY97 cohorts. Among the NLSY79 cohort, the majority of young adults—approaching 70%—were wed by their 34th birthday, either marrying directly or cohabiting before marriage. Over half of the NLSY97 cohort, in contrast, was still never married (Fig. 1). Weighted averages indicate that among the earlier cohort, 27.68% of

[1] For example, a respondent observed at age 28 is assumed to have debt levels that fall between their reported values in the YAST 25 module and YAST 30 module. Results presented here are similar when data are restructured into a YAST-wave format (where respondents are observed three times, once at each YAST survey). This is a common method when the variable is known to follow a linear path (see Houle and Warner (2017) for another debt example).

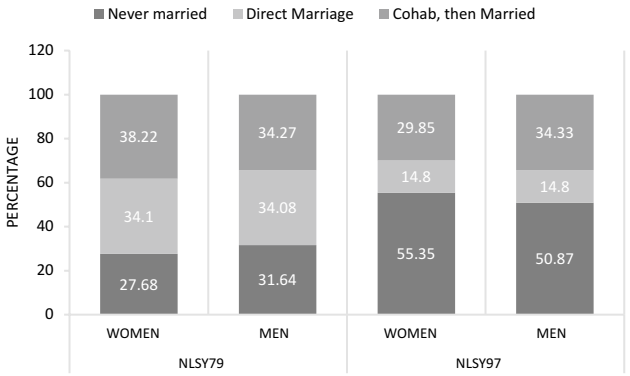

Fig. 1 Marital outcomes by birth cohort

women and 31.64% of men were never married, compared with 55.35% and 50.87% of the NLSY97. In addition to the reduction in the proportion of youth entering a first marriage, the proportion of respondents who married without a prior cohabitation declined substantially between the late 1980s and the early years of the twenty-first century. Over a third of NLSY79 respondents married without first cohabiting, a proportion that was more than halved (to 14.8%) among NLSY97 young adults. While cohabitation prior to marriage was not uncommon among the NLSY79 cohort, similar shares of respondents married directly as cohabited prior to marriage. Among the NLSY97 cohort, in contrast, cohabitation was the modal pathway to marriage; among NLSY97 men, the proportion who cohabited prior to marriage was more than twice as great as those who wed their spouse without first living with them or someone else.

Weighted sample means and standard deviations, by birth cohort and sex, for the variables used in the analysis are presented in Table 1. The descriptive results indicate important changes in the population of young adult respondents who entered their twenties unmarried and pursued some post-secondary education, with possible ramifications for the likelihood of premarital cohabitation and marriage. Even though both samples are designed to be representative of young adults at the same period in the life course, it is apparent that the lived experiences of these two cohorts differ significantly. The descriptive results also indicate important changes in the population of unmarried post-secondary school enrolled respondents, with possible ramifications for the likelihood of marrying and its relationship with student loan debt. For example, because many more youth from the NLSY79 cohort married by age 20 (38.6% compared with 13.2% of the NLSY97) and are necessarily excluded, the age distribution of this group is on average 2 years older than the NLSY97 cohort, 28.29 years versus 25.95. There are also significant differences in the sample's racial composition. The NLSY79 cohort group has a greater representation of Latino respondents (10.9%) compared with 4.71% only a generation earlier, reflecting increases in this population among young adults over this period, as well as declines in early marriage among this population.

Family structure experienced by respondents as children shifted dramatically across the generations, reflecting the high levels of divorce experienced by children born to NLSY79 respondents. Whereas over three-fourths (80.1%) of respondents of NLSY79 had lived with both of their biological married parents as teens, only a slight majority of the youth from NLSY97 (59.5%) had. The parents of NLSY97 respondents were significantly more likely to have pursued additional schooling after graduating from high school, with an average of 14.44 years of schooling compared with 13.82 years of the NLSY79 parents. Not surprisingly, parents of post-secondary school students were more likely to have higher years of schooling than national averages.

Other changes in the composition of the married population reveal cultural transformations reshaping the American population in general. Over one-third of the women and men of the NLSY97 were currently enrolled in a post-secondary institution compared 15.9% of the older cohort of youth. And while there is no significant difference in the proportion with only some college education, respondents from the earlier cohort (NSLY79) were significantly more likely than the younger cohort (NLSY97) to have completed at least a college degree, highlighting the longer time to degree completion among the younger cohort (Bound et al. 2007). Nearly half, 48.7%, of NLSY79 women and men have obtained a college diploma by age 34, compared with only 37.1% of the younger cohort, where males trail women in degree receipt (33.9% compared to 40.1%, respectively). The NLSY79 sample was also more likely to be employed full-time, earned higher wages, and had more financial assets at the start of their study period. The younger generation is slightly more likely to have military experience, with increases in both female and male participation. The descriptive results also suggest that reasons for leaving home may have shifted, from marriage to other pursuits, such as schooling. One hint of that is the sizable increase among the younger generation in the proportion who had cohabited. In the NLSY79, 6.7% of the sample reported being a cohabiting union over the study period compared with 22.4% of the young adults in NLSY97.

Figure 2 displays the average non-zero debt holdings for the two cohorts by final marital status along with the percentage of young adults in the sample holding student loan debt. Similar to previous work (Houle 2014a), we find significant increases in the proportion of NLSY97 young adults who had student debt compared to the NLSY79 independent of final marital status. For women, the average percentage point increase was 0.15—rising from 0.35 to 0.50. The proportion of men with student loan debt also increased but to a lesser degree, climbing from 0.35 to

Table 1 Descriptive statistics for NLSY79 and NLSY97 analytic samples

	NLSY79			NLSY97			Cohort difference	
	Total	Women	Men	Total	Women	Men	Women	Men
Education loan debt (logged)	1125 (5784)	1043 (5065)	1203 (6391)	7746 (17,569)	8908 (18,704)	6515 (16,191)	***	***
Ever held student loan debt	0.352 (0.478)	0.349 (0.477)	0.355 (0.479)	0.464 (0.499)	0.503 (0.500)	0.423 (0.494)	***	***
Demographic and family background characteristics								
Age	28.290 (3.440)	28.270 (3.449)	28.310 (3.432)	25.950 (3.537)	25.930 (3.538)	25.980 (3.535)	***	***
Non-Latino Black (ref: non-Latino White)	0.131 (0.338)	0.153 (0.360)	0.110 (0.313)	0.148 (0.355)	0.169 (0.375)	0.125 (0.331)	***	***
Latino	0.047 (0.212)	0.047 (0.211)	0.048 (0.213)	0.109 (0.312)	0.103 (0.304)	0.115 (0.319)	***	***
Lived with both bio parents	0.801 (0.399)	0.795 (0.403)	0.807 (0.395)	0.595 (0.491)	0.578 (0.494)	0.613 (0.487)	***	***
Highest educational attainment of parent	13.820 (3.013)	13.780 (3.030)	13.850 (2.997)	14.440 (2.796)	14.260 (2.748)	14.630 (2.833)	***	***
Lived in the South during childhood	0.317 (0.465)	0.338 (0.473)	0.298 (0.457)	0.313 (0.464)	0.336 (0.472)	0.289 (0.453)	**	***
Foreign born	0.039 (0.194)	0.038 (0.190)	0.041 (0.198)	0.037 (0.189)	0.033 (0.178)	0.042 (0.201)	***	*
Prior cohabitation^{+}	0.066 (0.249)	0.073 (0.260)	0.060 (0.238)	0.224 (0.417)	0.255 (0.436)	0.191 (0.393)	***	***
Has bio child(ren) in household	0.299 (0.458)	0.353 (0.478)	0.248 (0.432)	0.303 (0.459)	0.364 (0.481)	0.238 (0.426)		
Socioeconomic characteristics								
Currently enrolled	0.159 (0.365)	0.159 (0.365)	0.158 (0.365)	0.361 (0.480)	0.375 (0.484)	0.345 (0.475)	***	***
Some college (ref: HS degree or less)	0.368 (0.482)	0.376 (0.484)	0.360 (0.480)	0.380 (0.485)	0.363 (0.481)	0.398 (0.489)	***	
College degree or more	0.487 (0.500)	0.485 (0.500)	0.489 (0.500)	0.371 (0.483)	0.401 (0.490)	0.339 (0.474)	***	***
Full-time employment	0.712 (0.453)	0.658 (0.474)	0.763 (0.425)	0.571 (0.495)	0.534 (0.499)	0.611 (0.488)	***	***
Earnings (logged)	9.229 (2.962)	9.064 (2.972)	9.385 (2.945)	8.550 (3.280)	8.377 (3.308)	8.732 (3.240)	***	***
Veteran status	0.022 (0.145)	0.007 (0.085)	0.035 (0.184)	0.034 (0.182)	0.013 (0.115)	0.056 (0.230)	***	***
Unsecured debt	6.122 (4.387)	6.203 (4.331)	6.044 (4.438)	4.490 (3.809)	4.990 (3.748)	3.962 (3.802)	***	***
Homeowner	0.357 (0.479)	0.376 (0.484)	0.338 (0.473)	0.071 (0.256)	0.070 (0.255)	0.071 (0.257)	***	***
Financial assets	9.962 (2.652)	9.869 (2.791)	10.050 (2.511)	7.084 (3.375)	6.949 (3.356)	7.226 (3.389)	***	***
Observations	24,220	12,193	12,027	41,780	22,041	19,739		

Underlined values denote significant difference ($p < 0.05$) within cohort, across gender

Weighted sample means; ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; $^{+}$not included in multivariate models

0.42. For both groups, young women who cohabited before marriage had the largest share with student debt. The average student loan debt, $9669, was the highest value for the NLSY97 women, with women who directly married having the lowest debt averages in both cohorts ($968 for the NLSY79 and $7179 for NLSY97). This is not the case for NLSY97 men who married directly. Their average debt holdings, $8555, was the highest among all three groups; those who directly married also had the highest share of men—45%—holding debt. For both women and men of

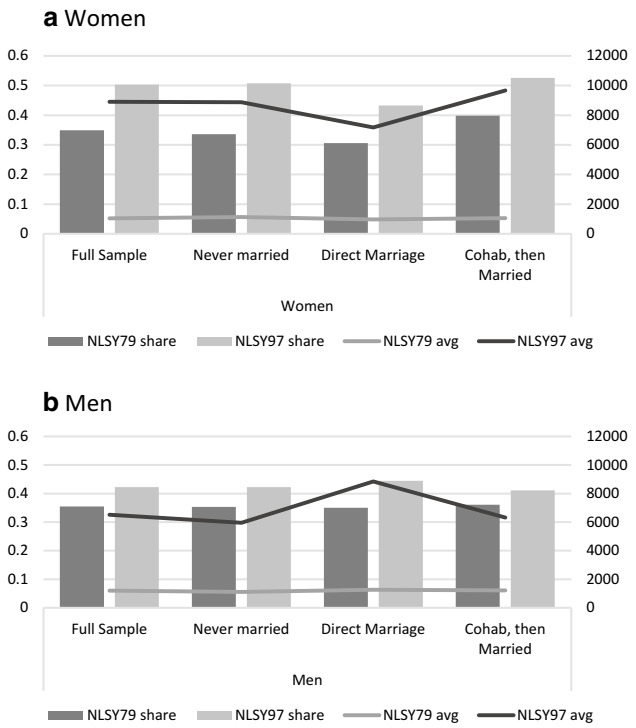

Fig. 2 Education loan debt characteristics by sex and marital status

the NLSY79 there was little variation in average student loan debt and marital status.

Multivariate Results

The results of the competing risk hazard models which examine the changing association between student debt and entrance into first marriage are presented in Table 2 for women and Table 3 for men. We present two sets of models for each cohort, Model 1 consists only of the student loan debt variables and Model 2 is our full model that includes all the additional covariates. Overall, our findings support the notion that debt has become more of a barrier to first marriage for young who would have directly married.

Focusing first on the results for women (Table 2), our findings indicate that the average marginal effect of not holding student loan debt for the NLSY79 women was not statistically significant in Model 1 and was only weakly associated with marriage preceded by cohabitation for the NLSY97 women. When the additional model covariates were added in Model 2, a 1% change in student loan debt among debtors was associated with a 2% reduction in the risk of direct marriage in a given year for NLSY97 women, and this coefficient is smaller and not statistically significant for NLSY79 women. Economic markers that signaled economic security and mobility (school enrollment, educational attainment, employment) are more strongly associated with direct marriage in the older cohort than the younger one and are more often associated with first marriages followed by cohabitation among NLSY97 women than NLSY79 women. Our results indicate that the marital outcomes of highly educated women had already diverged from their less educated counterparts among the NLSY79 cohort (Mclanahan 2004). Although women with some post-secondary education were no more (or less) likely to marry than women with only a high school degree, college completion increased the risk of direct marriage among both cohorts of women, while reducing the risk of premarital cohabitation that resulted in marriage for both cohorts, though it was only marginally significant for the younger cohort of women. The negative association between college completion and cohabiting prior to marriage was much greater for the older cohort of women (NLSY79) than for the younger cohort; differences in marital pathways, no prior cohabitation versus cohabited before marrying, were narrower among the younger cohort of women. Full-time employment was associated with remaining unmarried rather than direct marriage across both cohorts, providing some support for the financial independence argument.

Cohort differences in the association of assets, unsecured debt, and relationship formation are few, but on the whole these measures are more strongly associated with premarital cohabitation among the younger cohort of women. Compared to student loan debt, unsecured debt was positively associated with transitions into premarital cohabitation for both cohorts, and homeownership remained significantly associated with marital entry, independent of prior cohabitation status. Finally, the value of financial assets went from being only associated with direct marriage in the NLSY79 cohort to increasing the risk of any marriage, including those preceded by cohabitation, among the NLSY97 women. Neither earnings, nor veteran status, were associated with direct marriage or premarital cohabitation in either cohort of women.

Changes in the predictors of marital entry also emerged when exploring the demographic and family background estimates of the two samples. Relative to non-Latino Whites, black women in either cohort who cohabited were less likely to enter into marriage; Latina women of the NLSY97 cohort were also less likely to cohabit first and then marry than non-Latino White women. Growing up in a household with both parents, or in the South, was associated with direct marriage for both cohorts of women, whereas the association between parental education and marriage was only significant for the NLSY79 women. Foreign-born women from the NLSY97 cohort were significantly more likely than their native-born counterparts to marry following a cohabitation relative to remaining single. Maternal status increased entrance into marriage for both cohorts, although the predicted probability

Table 2 Competing risks results for transition directly into first marriage, marriage preceded by cohabitation, or never married, women

	NLSY79				NLSY97			
	(1)		(2)		(1)		(2)	
	Direct marriage	Cohab, then married	Direct marriage	Cohab, then married	Direct marriage	Cohab, then married	Direct marriage	Cohab, then married
	Ref. never married		Ref. never married		Ref. never married		Ref. never married	
No education loan debt	0.158 (0.248)	−0.092 0.195	−0.001 (0.203)	0.034 (0.186)	0.011 (0.086)	0.142 (0.114)	−0.101 (0.078)	−0.023 (0.098)
Education loan debt (logged)	−0.001 (0.027)	−0.024 (0.023)	−0.007 (0.023)	0.003 (0.022)	−0.005 (0.009)	0.023 (0.012)$^{+}$	−0.019 (0.008)*	0.004 (0.011)
Additional socioeconomic characteristics								
Currently enrolled			−0.049 (0.027)$^{+}$	−0.024 (0.028)			−0.045 (0.012)***	−0.029 (0.014)*
Some college (ref: HS degree or less)			0.044 (0.051)	−0.01 (0.042)			0.028 (0.018)	−0.030 (0.022)
College degree or more			0.172 (0.053)**	−0.129 (0.045)**			0.079 (0.020)***	−0.041 (0.022)$^{+}$
Full-time employment			−0.083 (0.021)**	0.035 (0.022)			−0.022 (0.011)*	0.023 (0.013)$^{+}$
Predicted earnings			0.024 (0.020)	−0.001 (0.020)			0.146 (0.188)	−0.072 (0.086)
Veteran status			0.091 (0.122)	−0.072 (0.099)			0.018 (0.044)	0.019 (0.066)
Unsecured debt (logged)			0.002 (0.002)	0.005 (0.002)*			−0.002 (0.002)	0.007 (0.002)**
Homeowner			0.130 (0.023)***	0.066 (0.023)**			0.032 (0.009)***	0.071 (0.013)***
Financial assets			0.033 (0.008)***	0.009 (0.007)			0.012 (0.004)**	0.014 (0.003)***
Demographic and family background characteristics								
Non-Latina Black (ref: non-Latino White)			−0.019 (0.040)	−0.095 (0.041)*			−0.019 (0.027)	−0.192 (0.028)***
Latina			0.009 (0.047)	−0.061 (0.044)			0.027 (0.024)	−0.064 (0.028)*
Lived with both bio parents			0.120 (0.041)**	−0.066 (0.036)$^{+}$			0.053 (0.020)**	−0.034 (0.020)$^{+}$
Years of parental schooling			−0.017 (0.005)**	0.012 (0.005)*			−0.002 (0.003)	0.003 (0.004)
Lived in South in childhood			0.079 (0.031)*	−0.024 (0.031)			0.059 (0.016)***	0.006 (0.019)
Foreign born			0.079 (0.102)	−0.058 (0.075)			−0.025 (0.039)	0.098 (0.043)*
Has bio child(ren) in household			0.116 (0.029)***	0.143 (0.027)***			0.088 (0.014)***	0.183 (0.016)***
Number of observations			6225				13,578	

Model 2 also includes controls for age and age squared and birth year; Robust standard errors in brackets; ***p < 0.001; **p < 0.01; *p < 0.05; $^{+}$p < 0.10

Table 3 Competing risks results for transition directly into first marriage, marriage preceded by cohabitation, or never married, men

	NLSY79				NLSY97			
	(1)		(2)		(1)		(2)	
	Direct marriage	Cohab, then married	Direct marriage	Cohab, then married	Direct marriage	Cohab, then married	Direct marriage	Cohab, then married
	Ref. never married		Ref. never married		Ref. never married		Ref. never married	
No education loan debt	0.705 (0.306)*	−0.500 (0.233)	0.498 (0.222)*	−0.091 (0.186)	0.246 (0.105)*	0.218 (0.098)*	0.128 (0.090)	0.105 (0.089)
Education loan debt (logged)	−0.060 (0.034)$^{+}$	−0.020 (0.026)	0.052 (0.024)*	−0.009 (0.021)	0.030 (0.011)**	0.023 (0.011)*	0.014 (0.010)	0.010 (0.010)
Additional socioeconomic characteristics								
Currently enrolled			−0.007 (0.025)	−0.012 (0.022)			0.030 (0.012)*	−0.007 (0.014)
Some college (ref: HS degree or less)			−0.012 (0.042)	0.015 (0.034)			−0.009 (0.019)	−0.007 (0.019)
College degree or more			0.051 (0.043)	−0.073 (0.036)*			0.051 (0.021)*	−0.031 (0.020)
Full-time employment			0.042 (0.025)$^{+}$	0.000 (0.023)			0.022 (0.013)$^{+}$	0.050 (0.013)***
Predicted earnings			0.024 (0.016)	−0.016 (0.015)			0.021 (0.069)	0.065 (0.080)
Veteran status			0.189 (0.049)***	0.032 (0.052)			0.091 (0.026)***	0.104 (0.025)***
Unsecured debt (logged)			0.004 (0.002)*	0.003 (0.002)*			0.002 (0.002)	0.004 (0.002)$^{+}$
Homeowner			0.152 (0.021)***	0.048 (0.019)*			0.043 (0.009)***	0.065 (0.011)***
Financial assets			0.009 (0.006)	0.005 (0.005)			0.012 (0.003)***	0.008 (0.003)**
Demographic and family background characteristics								
Non-Latino Black (ref: non-Latino White)			−0.074 (0.039)$^{+}$	0.024 (0.035)			−0.018 (0.028)	−0.076 (0.027)**
Latino			−0.093 (0.049)$^{+}$	0.035 (0.036)			0.006 (0.023)	−0.067 (0.026)*
Lived with both bio parents			0.067 (0.038)$^{+}$	−0.029 (0.031)			0.058 (0.019)**	−0.040 (0.017)*
Years of parental schooling			−0.011 (0.005)*	0.007 (0.005)			0.000 (0.003)	−0.003 (0.003)
Lived in South in childhood			0.074 (0.028)**	−0.027 (0.026)			−0.002 (0.018)	0.040 (0.018)*
Foreign born			−0.004 (0.077)	0.045 (0.084)			0.020 (0.044)	0.050 (0.056)
Has bio child(ren) in household			0.288 (0.025)***	0.169 (0.021)***			0.125 (0.015)***	0.175 (0.014)***
Number of observations			6268				12,098	

Model 2 also includes controls for age and age squared and birth year; Robust standard errors in brackets; ***p < 0.001; **p < 0.01; *p < 0.05; $^{+}$p < 0.10

for direct marriage declined from 0.116 for the older cohort to 0.088 for the younger NLSY97 women.

The results for men are presented in Table 3. In contrast to the women's results, in Model 1 non-debtors were more likely to directly marry than debtors in both cohorts of men. Furthermore, the association between having student loan debt and direct marriage went from being negative and weak relative to remaining single among the NLSY79 men to

positively associated with either type of marital entry among the NLSY97 men. This provides some support to the reduced stigma argument. With the inclusion of the additional model covariates (Model 2), however, estimates on the student loan debt and marriage relationship changed considerably. For the NLSY79 men, the relationship between student loan debt levels among debtors and first marriage became positive and statistically significant after accounting for socioeconomic, family background, and demographic characteristics. A 1% increase in student debt among debtors was associated with 0.052 increase in marrying directly. For the NLSY97 men, after accounting for the same factors, there was no longer statistically support for a positive relationship, an indication that student debt became more of an economic impediment to direct marriage for the younger cohort of men.

Results from Model 2 also indicate cohort changes among men in the socioeconomic characteristics related to who married directly relative who married after a cohabitation. For the NLSY79 men, a college degree was negatively associated with cohabiting prior to marriage. In contrast, among NLSY97 men having a college degree increased the risk of direct marriage. Although full-time employment remained weakly associated with direct marriage for both cohorts, for the younger cohort full-time employment is also associated with premarital cohabitation. For men, having military experience increased the risk of direct marriage for both cohorts. For the younger men, veterans were also more likely to cohabit premaritally relative to remaining single. Consumer (unsecured) debt was only associated with direct marriage for the NLSY79 men. Homeownership, in contrast, had a positive and significant association for both direct marriage and marriage preceded by cohabitation, and its impact grew in magnitude and significance across cohorts. Finally, the value of financial assets was also associated with marriage relative to remaining single, but only for the NLSY97 men.

Race and ethnic origin shaped men's marriage patterns difference across cohorts. Among the NLSY79 cohort, Black and Latinx men were less likely to marry directly than non-Hispanic White men, though this association is only weakly significant ($p < 0.10$). Black and Latinx men of the NLSY97 cohort, on the other hand, were 0.076 and 0.067 less likely to premaritally cohabit than non-Hispanic Whites for a 1% increase in student debt, relative to remaining single. The marital outcomes for men with some post-secondary educational attainment, then, shifted in important ways for racial and ethnic minority men, relative to non-Hispanic White men. But while racial disparities among men with more education narrowed, cohort differences in the importance of family structure increased. Whereas growing up with both parents was only weakly associated with direct marriage among the older cohort of men, for the younger (NLSY97) cohort growing up with both parents significantly increased the risk of direct marriage and reduced the risk of cohabitation prior to marriage, relative to remaining single. At the same time, regional disparities also narrowed; whereas men from the older cohort who had grown up in the South were significantly more likely to marry directly than remain single, among men from the NLSY97 cohort, those who grew up in the South were no more or less likely to marry directly, though they were significantly more likely to cohabit prior to marriage than men who grew up outside of the South. Finally, being a parent was associated with marrying for both cohorts, increasing entry in both union types. Among the NLSY79 cohort, however, men with children were more likely to marry directly, whereas for the NLSY97 male parents, their marriages were much more likely to be preceded by cohabitation.

Discussion and Conclusion

In this paper, we examined changes in the relationship between student loan debt and the likelihood of marrying, directly or preceded by cohabitation, among two generations aging through young adulthood approximately 20 years apart. While a greater share of the young adult population was married in the mid- to late-1980s than in the early years of the twenty-first century, among the later cohort the majority had lived with their spouses or someone else before their wedding dates. They were also more likely to take on education loans to pursue a college degree and accrued more debt than their counterparts from the earlier cohort. Our analysis seeks to better understand whether changes in how student loan debt has come to embody the undergraduate experience has ramifications in the marital market. Specifically, does it distinguish contemporary young adults who marry without first cohabiting from those who cohabit prior to marriage? We examined two generations from widely utilized data sets, NLSY79 and NLSY97, and advance previous research on this topic by also incorporating consumer debt and asset measures and delineating marriages preceded by a cohabiting union.

We found that as average loan balances and the proportion of college-going young adults with debt increased, student loan debt became more of an impediment to marital transitions in young adulthood, at least for young women. One potential explanation for these findings is that student loan debt serves as an economic impediment for marrying directly. In fact, in supplementary analyses estimating our models using deciles of student debt (available upon request), student loan debt was negatively associated with entry into all marriages for NLSY79 women, but only reduced direct marriage (and not marriage preceded by cohabitation) for NLSY97 women. The younger cohort of women may enter into cohabiting unions to take advantage of one of the benefits of marriage (that two can live as

cheaply as one), in order to pay down debts before tying the knot; however, this delays marriage, and may result in more non-marital births or fewer marriages, if couples or one partner comes to see shared living as an acceptable alternative to marriage.

For men, student loan debt operates somewhat differently than it does for women. Net of observable socioeconomic, demographic, and family background characteristics, student loan debt was positively associated with entrance into marriage without prior cohabitation for the older cohort, and not associated with marriage for the younger men. In other words, the amount of student loan debt men have no longer decreases (or increases) the likelihood that men will marry, whether directly or following a cohabiting union. In addition to being an economic hurdle, this might also reflect the increasing selection over time of the most economically attractive men, into pursuing post-secondary schooling or into marriage.

For recent cohorts of young adults, cohabitation has become the modal pathway to marriage and is usually the first coresidential relationship (Addo 2012; Sassler 2010). There are fewer economic barriers to entering cohabitation than marriage, since cohabiting partners are less likely to pool their finances (Addo and Sassler 2010). Unlike married couples, cohabiters do not have assume a partner's student loan debt. Even as the prevalence and amount of student debt has increased, its association with marriages formed after cohabiting first has remained insignificant for both cohorts of women and men. We infer from our findings that the growing prevalence of cohabitation (whether premarital or not) among college-going young adults is not necessarily a function of rising levels of student debt.

Our results do, however, suggest that other types of debt-related financial resources matter for making a marital transition. For women, we found that unsecured consumer debt, homeownership, and financial assets were all positively associated with both direct marriage, and marriage preceded by cohabitation. Furthermore, in contrast to student loan debt, these associations were fairly consistent across cohorts for women. If young adults are debt-financing short-term expenses, such as lavish weddings or vehicles, then it is no surprise that consumer debt may be positively correlated with a marital transition. Similarly, homeownership serves as an indicator of wealth and potential financial security (Addo 2017; Schneider 2011).

The gender asymmetry of the marital outcomes, however, does speak to gender imbalances in the marriage market, and supports prior research that women's economic attributes matter more for marriage, both within the NLSY79 cohort (Sweeney 2002) and for the younger NLSY97 young adults (Addo 2014) than our theories acknowledge (Oppenheimer 1988). The rates of women entering and completing post-secondary education have exceeded male rates since the early 1990s (Buchmann and DiPrete 2006). It is therefore not surprising that the more recent cohort of women they would be more likely to have student debt, and also have higher average amounts than their male counterparts. On this front, our findings show that women are more likely than men to be penalized for having student loan debt with respect to marital transitions. It is also possible that changing norms surrounding marriage are leading people to choose not to get married for many reasons that have nothing to do with their level of student debt. It may very well be the case that for women with education loans, transitioning into marriage in young adult hood is not of decided interest. Our study results may then indicate that young adults with student debt are no more likely to transition into marriage than the growing number of young adults who are also delaying marriage or deciding not to marry at all. Of course, to analyze that relationship requires a longer panel than what is currently available. And while the percentage of never married young adults increased across the birth cohorts, more than half of the NLSY97 women and men with some post-secondary schooling married by the end of the study period.

Our study is not without limitations. Given the stated challenges with coding cohabitation in the NLSY79 data, the never married category is heterogenous group of young adults that never cohabited and those who may have cohabited. Among the older cohort, most young adults cohabited only with their spouse while those who cohabited and never married are far more likely to be disadvantaged; they were also more likely to be repeat cohabiters, a phenomenon that increased across cohorts (Lichter and Qian 2008). We also cannot include many important predictors of premarital behaviors, such as gender role attitudes or views about premarital cohabitation. Other useful information, such as the duration of the romantic relationship, as well as cohabitation spells in NLSY79 prior to union formation, are also not available. Perhaps most important for our analysis is the difficulty of accounting for selection into both cohabitation and marriage. Would respondents have married, for example, if they had not first formed a coresidential union? Whether the impact of cohabitation on marriage changed over time, given reductions in the proportion of cohabiting unions that transition to marriage, is yet another area that requires additional study. Alternatively, selection into marriage and student loan debt due to personality characteristics might also account for the observed differences over time. There is strong evidence to suggest, however, that risk preferences and financial literacy are not predictive of student loan debt, nor do they explain the relationship between student debt and young adult outcomes (Addo et al. 2016; Houle and Berger 2015).

The relationship between economic resources, union formation, and marital timing remains an area of interest for family scholars. Our findings shed additional light on the ongoing retreat from marriage in young adulthood and

the financial dimensions that are contributing to this demographic phenomenon. We focus here on post-secondary school attendees and the unique role that student debt has played in relationship formation. There is already some evidence that attitudes about marital permanence have become more conservative for the highly educated (Martin and Parashar 2006). Our study suggests that the more educated population's greater likelihood of marriage without first cohabiting may partially explain that relationship. The risk associated with acquiring debt to pursue a college degree are, therefore, not only associated with changes in family behaviors, but also reflect changing attitudes associated with the potential economic and social rewards of marriage.

Compliance with Ethical Standards

Conflict of interest Fenaba Addo, Jason Houle, and Sharon Sassler declare that they have no conflict of interest.

Ethical Approval This study uses publicly available secondary data from the National Longitudinal Survey of Youth 1979 and the National Longitudinal Survey of Youth 1997. The authors did not interview the respondents.

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