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Can't afford a baby? Debt and young Americans[★]

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Abstract

This article explores the role of personal debt in the transition to parenthood. We analyze data from the National Longitudinal Study of Youth-1997 cohort and find that for the generation coming of age in the 2000s, student loans delay fertility for women, particularly at very high levels of debt. Home mortgages and credit card debt, in contrast, appear to be precursors to parenthood. These results indicate that different forms of debt have different implications for early adulthood transitions: whereas consumer loans or home mortgages immediately increase access to consumption goods, there is often a significant delay between the accrual and realization of benefits for student loans. The double-edged nature of debt as both barrier and facilitator to life transitions highlights the importance of looking at debt both as a monetary issue and also as a carrier of social meanings.

Keywords

Debt; Credit card; Home mortgage; Birth of first child; Life course

1. Introduction

With a decline in personal savings from 10 percent in the 1980s to less than 1 percent in the 2000s, America has moved from a nation of savers to a nation of borrowers (Carruthers & Ariovich, 2010: 21). In the last decade, the net worth of households in the bottom 90 percent of the wealth distribution declined, and by 2010, 25% of American households had a net worth of \$50 or less (Bricker, Kennickell, Moore, & Sabelhaus, 2012: 17,18). The growing burden of debt has left increasing numbers of Americans vulnerable to potential economic shocks produced by job loss, divorce, or illness (Sullivan, Warren, & Westbrook, 2000). What is less understood is how debt may influence more ordinary and planned transitions, such as starting a family.

Widespread anecdotal evidence based on interviews with young people suggests significant reservations about starting a family while struggling with credit card, educational, and other forms of debt that are increasingly incurred by young people. For example, Jennifer Ludden interviewed young adults for an NPR story and found that for one young couple, “[s]tarting

[★]Sadly, Dr. Randy Hodson passed away in 2015 before this article came to press. He will be sorely missed by a wide circle of family, friends, and colleagues, as well as the great many who have learned (and will continue to learn) from the scholarship he produced during his illustrious career.

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a family doesn't seem possible for now – maybe ever, as [the couple] have explained to relatives. . . . ‘I know everyone says they don't know how they're going to afford children, but we really don't’” (Ludden, 2011). High debt burdens early in life are a new historic phenomenon (especially for non-mortgage debt) brought about in part by rising college tuition in combination with declining government support for college attendance and more generally by the expansion of access to credit to previously excluded populations, including young people, through credit cards and other mechanisms. Carrying debt from the very earliest stages of adulthood, even prior to establishing financial independence, can potentially create hurdles to the subsequent transitions of young adulthood. However, debt also allows young adults to access important resources, such as college education, greater purchasing power, and better housing (Chiteji, 2007). Credit allows young adults to move forward consumption, and this can facilitate costly transitions such as having a child. It is in this sense that debt is ‘risky’ – it is both a useful resource that can finance life transitions but is also a liability must be repaid (with interest).

Our investigation of the influence of debt in the timing of first birth builds on this emerging consensus that debt is ‘risky’ – simultaneously a resource and a liability – and that it has special meanings representing life style choices and directions, meanings beyond a simple balance sheet calculation. We do this by distinguishing between different types of debt, particularly consumer debt, student loans, and home mortgages, and how each shapes the likelihood of early fertility.

2. An uneasy transition to adulthood

Many of the key transitions in life occur relatively early, at the earliest stages of adulthood: completing one's education, establishing an independent household, establishing a career, marriage, and birth of first child. For this reason successful early life transitions are particularly important to one's life trajectory and the study of these transitions has emerged as a major focus in sociology and the social sciences more generally. Studies of young adult transitions typically utilize a life course approach (Mortimer, 2012). A life course approach sees transitions as influenced both by the age and social position of those undergoing the transition, but also, and importantly, by the historical circumstances at that particular point in time. Life course approaches thus resonate well with the central sociological concern regarding the intersection of biography and history (Mills, 1959). Key concepts in the life course approach include the timing of events, the linking of lives across generations, and the linking of lives and history (Elder, 1994). In particular, economic hardship and responses to hardship have been identified as key influences on early life transitions and subsequent life outcomes (Elder, 1974).

Studies of contemporary cohorts of young people suggest an increasingly complex and sometimes troubled transition to adulthood (Bernhardt, Handcock, & Scott, 2001; Waters, Carr, Kefalas, & Jennifer, 2011; McCloud, 2010). The early life stages of education and family formation appear to be increasingly fragmented, delayed, and more often occurring out of traditional normative sequence for an increasing share of young people (Mortimer, 2003). The causes of these more fragmented transitions are manifold and include longer and more expensive periods of education, reduced and delayed childbirth, and difficulty finding

secure jobs with adequate earnings (Shanahan, 2000). In the current analysis we focus on the realization of these dynamics through the increased carrying of personal debt for young people and the consequences of this debt for early life transitions, with a particular emphasis on potential delays in the birth of a first child.

Debt may be particularly influential in the early stages of the adult life course. For many youth, the late teens to the mid-20s are a time of growing demand for spending – on education, on developing the resources for first jobs (such as transportation and clothing for work), and on setting up independent households – but slow growth in income. Debt may therefore be more important in enabling and constraining key transitions like fertility in the early years than later when financial lives may have become more secure (Bozick & Estacion, 2014). Conceptually, debt is most likely to exert shorter-term effects on the timing of large life decisions like fertility, similar to other factors that affect fertility, like postsecondary education (Brand & Davis, 2011). It is unlikely that indebtedness would be sufficiently large (for most) to significantly change the decision to have children at all, but may affect the timing of fertility. Indeed even factors like class and race that have large effects on fertility have little effect on total fertility in recent years, which has converged across social groups, but rather influence timing and patterning (Sweeney and Raley, 2014). Similarly, in their analysis of debt and marriage, Bozick and Estacion (2014) find that debt has effects mainly in delaying marriage rather than encouraging youth to forego marriage altogether.

Given that debt is likely to have relatively shorter-term effects, it is especially important to study its influence in early fertility, when a cohort is transitioning to the years of first child. If we looked only at older ages or completed fertility, we would miss factors whose effects are felt mainly in delays.

3. Debt and early fertility

The convergence in total lifetime fertility across social groups means that fertility timing has become an increasingly important dimension of social differentiation. Some of the factors that influence timing, such as education (Brand & Davis, 2011) and contraception use (Sweeney & Raley, 2014), are well known, but we extend the fertility timing literature by investigating whether debt shapes the likelihood of early transitions to parenthood. Currently, there are few quantitative studies that address this question. Using data from the PSID that covers the 1990s and early 2000s, Chiteji (2007) finds no association between debt (non-collateralized debt and mortgages) and early fertility, although her sampling frame begins when respondents are between 25 and 34. As argued above, these results may be tilted toward non-significance if debt effects are strongest for even younger adults and dissipate over time. Chiteji's analysis is also of an earlier cohort that was less exposed to debt than later cohorts coming of age after 2000. Young adult debt portfolios have shifted over time, becoming more dominated by student loans, which can have different effects on early life transitions than other unsecured debts such as credit card debt and than secured debt like mortgages (Addo, 2014; Bozick & Estacion, 2014; Houle, 2014). The transition to adulthood has long involved a transition to debt, but contemporary cohorts differ from past cohorts in having more complex debt-holdings. As young adults' debt portfolios have

become more complex, it is crucial to understand how debt affects other aspects of the transition to adulthood, but this requires sensitivity to differences between different types of debt. In the following sections, we develop the idea that debt is both an asset and liability by considering how debt types may have divergent relationships with early fertility.

3.1. Debt as resource and liability

Given that debt is deeply implicated in the processes of financial and residential independence as well as educational attainment, debt also likely shapes more intimate decisions. In some ways, debt is like income or wealth because it can finance the consumption of goods and services. In this sense, income, wealth, and debt are fungible sources of cash to support both life style choices and such investments as college education and home ownership. There is increasing research on dimensions of financial well-being beyond income and work, but debt has received less attention than wealth in this research (e.g. Keister, 2000; Nau & Tumin, 2012).

Debt, however, is distinct from income or wealth in that it must be repaid (Schneider, 2011; Vespa, 2011). Taking on debt for consumption, even consumption seen as a rational investment, thus puts future consumption at risk. Greater income or wealth is an unambiguous asset in life. Debt is more risky – it funds current consumption, but potentially at the expense of future consumption. This calculated risk in which the present is weighed against the future is the unique nature of debt that distinguishes it from other ways of financing consumption and makes it not entirely fungible on a balance sheet that calculates a person's net worth. It is thus necessary to examine debt not just as a component of the balance sheet, but in its own right as a liability with potentially greater or lesser risk depending on what goods or services are purchased, and whether those goods or services have immediate or delayed payoffs. In short, debt is a double-edged sword that cuts both ways, both funding current consumption and potentially compromising future consumption but to an extent that cannot be entirely predicted.

This uncertainty between the present and future contributes to the special moral and social meanings attached to debt in American society. Debt can symbolize “having made it” to a level where one has the financial wherewithal to extend one's consumption through borrowing against future earnings (Manning, 2000: 170–177). Or, debt may be interpreted negatively, suggesting that the borrower is beholden to others or is financially intemperate. The variable meanings and implications of debt across different social situations can be seen in seemingly contradictory findings on the effects of debt, sometimes even within a single study. For instance, Drentea (2000: 446) finds that personal anxiety is reduced by carrying a credit card balance, but increased by the size of that balance. This finding suggests more than a purely monetary meaning to debt: carrying a balance is seen as a doorway to security and perhaps affluence, while an excessively large balance is seen as problematic and generates stress (Zelizer, 1994).

3.2. Early fertility and the timing of debt payoffs

One important source of variation in the meaning of debts is the fact that different debts represent different types of resources and liabilities, which is reflected in their payoff

schedules. This is especially important for early fertility, because young adults typically have lower incomes than older workers and minimal assets relative to their liabilities (Houle, 2014). Consumer debt, particularly credit card debt, lies on one extreme because the payoff is immediate, allowing the user to increase consumption in the present in exchange for future repayment and interest (Barr, 2009: 77). This arrangement may result in problems down the road because borrowers must repay the loan at high interest rates and accurately forecasting future earnings is difficult (Manning, 2000; Soman & Cheema, 2002), but in the near term, credit cards can help borrowers maintain or increase their standard of living. For young adults considering becoming parents, the flexibility and purchasing power that credit cards provide may make parenthood seem more feasible. Although credit cards do not remove the serious resource trade-off involved in having children (Barro & Becker, 1989), they can defer and smooth the added expenses over a longer period of time. Moreover, because young adults typically have minimal wealth (Keister, 2000) and wages for many workers have stagnated in recent years (Leicht & Fitzgerald, 2006), credit cards have become an important tool for establishing and maintaining a family (Sullivan et al., 2000). Addo (2014) finds this dynamic at work for other young adult transitions: credit card debt is positively associated with the transition from singlehood to cohabitation. This leads to the following expectation:

Hypothesis 1. Consumer debt can be preparatory to having a child and is associated with an increased likelihood of transitioning to parenthood.

Home mortgages are similar to credit cards in terms of payoff immediacy. As soon as an individual takes out a mortgage, she can move into a new residence, enjoying higher quality housing, safer neighborhoods, and better schools, which are often seen as a prerequisite to family formation (Warren & Tyagi, 2003: 24). The fact that quality of life and access to opportunity is so closely tied to residential neighborhood in the US has pushed families into the housing market: homeownership rates reached a peak at 69% in 2005, before falling below 65% in the 2010s, although this figure remains historically high (U.S. Census Bureau, 2014). While research on the relationship between mortgages and fertility is limited, there is a positive association between fertility and living in a single-family dwellings, and fertility rises after couples make housing transitions (Kulu & Vikat, 2008). We therefore expect a similar relationship with fertility and mortgages as with credit card debt:

Hypothesis 2. Home mortgages are preparatory to having a child and are associated with an increased likelihood of transitioning to parenthood.

Student loans have a different dynamic, because unlike credit card debt or home mortgages, the payoff is deferred and uncertain. When a student borrows money in order to attend college, the aim is to eventually graduate and find a good job. This is a risky proposition, because many students do not graduate, and student loans themselves can pose a barrier to graduation (Chaddock, 2009; Dwyer, McCloud, & Hodson 2012). While many student loans can be deferred until the student completes school, the loans must eventually be repaid when the borrower enters the workforce even if the hoped-for well-paying job does not materialize. Reflecting this uncertainty, over two-thirds of college students carrying debt report being either very or extremely anxious about their college debts (Sallie Mae, 2009: 15).

The downsides of holding debt do not necessarily imply that taking on student loans is imprudent. Student loans have been an important mechanism for increasing college attendance among socioeconomic and racial groups previously excluded (Espenshade & Radford, 2009). Young people today correctly reason that a college education is an important strategic investment in future earnings that may warrant taking on what they see as short-term debt (Attewell & Lavin, 2007; Morris & Western, 1999; Schneider & Stevenson, 1999). The point, however, is that this potential payoff associated with loans – a college degree – is delayed (and for some may never materialize) (Millett, 2003), and this uncertainty about the payoff may shape (or reflect) decisions about family. For example, Raley, Kim, and Daniels (2012) find a strong negative association between young adults' fertility expectations and college enrollment and persistence, which suggests that higher education competes with parenthood during youth and early adulthood. Young adults have typically accumulated few assets and have yet to reach their full earnings potential, so student loans may be particularly burdensome as they initially establish their independence (Houle, 2014), especially if high levels of debt lead to unexpected hardship (Dwyer, Hodson, & McCloud 2013; Joyner et al. 2006; Mann, 2009: 262; Manning, 2000). This leads to the following expectation:

Hypothesis 3. Student loans offer delayed payoffs, and are thus associated with a decline in the likelihood of transitioning to parenthood, especially at high levels of indebtedness.

Although different debts likely operate in similar ways for men and women, we expect that the debt-fertility relationship is more pronounced for women. One reason is that debt affects other transitions, such as marriage, to a greater extent for women than for men (Addo, 2014; Bozick & Estacion, 2014). In the case of student loans, debt may represent more of a conscious investment in future earnings potential for women (Caucutt, Guner, & Knowles 2002; Dwyer et al., 2013) and signal a rejection of traditional gender roles (McGill, 2014; Hodges & Budig, 2010). Debts with immediate payoffs, on the other hand, may be particularly helpful for mothers worried about financing parenthood if resources are minimal (Edin & Kefalas, 2007). We therefore expect the following:

Hypothesis 4. The relationship between debt and fertility, either as facilitator or delayer, is stronger for women than for men.

3.3. Analytic strategy

As our account of the different payoff structures of debt indicates, debt is a financial relationship that extends across time. Young adults making plans for the future can utilize debt to eventually realize career and lifestyle goals. This forward-looking, facilitative aspect makes debt especially difficult for non-experimental causal inference, which typically relies on establishing the order of events over time to adjudicate causal claims. For example, just because a young adult purchases a home or furnishings before having a baby, it does not necessarily follow that her mortgage or credit card debts had a direct causal effect on fertility. Instead, these purchases may have been influenced in part by the expectation of fertility in the short or medium term. Similarly, college students may be especially willing to take on student loans if education and career are a top priority and family formation is

relegated to the more distant future. Once again, student loans would not necessarily act as a direct causal agent, but instead serve as a marker of the desire to follow a particular path through early adulthood (Raley et al., 2012). Or, debt may have indirect effects because it shapes decisions about marriage (Addo, 2014), which in turn influences fertility. Of course, debt can still exert more direct causal effects on early fertility if it leads to hardship and such hardship makes it more difficult to plan for the future (Hofmann & Hohmeyer, 2013), although the link between hardship and fertility is weaker than for hardship and marriage (Gibson-Davis, 2009). Because of these complexities, our expectations are not strictly causal: we expect that debt is as much a “fellow traveler” (or, for student loans an indicator of taking the “scenic route”) for early transitions as an upstream cause.

To summarize, we expect that that debt is linked to fertility risk in early adulthood, but that different debt types have different fertility implications. We hypothesize that the variable timing of payoffs, which reflect the dual nature of debt as resource and liability, is responsible for this variation. Credit cards and home mortgages have immediate payoffs, which may make them an attractive tool for financing parenthood. Student loans, however, have delayed and uncertain payoffs, which we expect signifies an intention to delay fertility. Although we expect that these relationships are similar for men and women, we expect the debt-fertility connection to be stronger for women.

4. Data and methods

4.1. Data

The data we use to study of the timing of first birth as influenced by debt is the National Longitudinal Survey of Youth-1997 cohort (National Longitudinal Survey of Youth, 2014). Under the sponsorship of the U.S. Bureau of Labor Statistics, the NLSY-97 follows a nationally representative cohort of youth born between 1980 and 1984 and who were thus between the ages of 12 and 17 when first interviewed in 1997 and resurveys them annually ($N=8984$). The NLSY-97 asks a wide range of questions on both family background and current situation, including questions asked of respondents as far back as their mid-teens and questions asked directly of their parents at that time. In addition, a rich variety of current questions about work, family, and current financial behaviors are available, including detailed measures of personal debt and assets. We include the first thirteen rounds in this study, which cover the years 1997–2009.

4.2. Fertility

Our dependent variable is a binary indicator of whether the respondent became a parent in the survey year by birth or adoption. We include both custodial and non-custodial parents, expecting that even parents who do not live with their child have financial considerations related to child-rearing. Because we use event history methods (described in more detail below), the data include all person-years in which the respondent reported never having had a child as well as the first year they report having a child. We also restrict the analysis to respondents with full information about income, education and other indicators, resulting in 17,541 person-years for 3000 women and 17,946 person-years for 3288 men. As we discuss

below, we focus on the subsample of women, although we also report supplemental results for men.

4.3. Debt

Our theoretically central independent variables are three debt measures, corresponding to the expectation that there will be differing effects for different types of debt. Respondents are asked about three major areas of debt and asset formation: (1) credit card debt; (2) student loans, including government loans and loans from family and/or friends; and (3) home mortgage debt and home equity loans. The debt questions are not asked every year for every respondent, but are available as cross-round variables for debt at ages 20 and 25. We code respondent-years under age 20 as having no debt, respondent-years from age 20 to 24 as having the debt reported at age 20 and respondent-years at age 25 and above as having debt reported at age 25. We believe this is the best way to deal with incomplete yearly data because it is straightforward, easily replicable by other researchers, and rooted in readily available information. We carry forward rather than interpolate because debt accrual is lumpy, which is appropriate for shorter time increments (Allison, 2002), although sensitivity checks with interpolated data yield similar results. Further supplemental analyses using the most recent debt data to predict fertility by the end of the sampling period also produce similar results. Because debt has a skewed distribution – a large percentage of respondents report no debt for each debt type – we model debt as a spline. This includes a dummy variable for having any debt and a linear variable for debt amount. This specification allows for a distinction between the binary outcome of having any debt at all and possibly consequential differences between different levels of debt (Dwyer et al., 2012; Addo, 2014).

4.4. Controls

We employ an extensive set of controls for factors that may simultaneously shape decisions about both debt and fertility in order to isolate debt effects. The first is education. Enrolling in college often means accruing student loans, but college itself can delay fertility (Raley et al., 2012). We include controls in order to disentangle the effects of debt from the effects of education. We code respondents according to current college status, including currently enrolled, some college but not currently enrolled, and 4-year graduate and beyond (including the small number in this young sample with advanced degrees), with no college as the reference group (Musick, England, Edgington, & Kangas, 2009). Class and race are also significantly associated with early fertility, with less advantaged groups on average having children younger than more advantaged groups, in the same pattern as educational attainment. Class background is an important determinant of both financial behavior and fertility (Brand & Davis, 2011; Chang, 2005), and we code respondents according to parental income level: respondents whose parents were in the bottom income quartile during the 1997 wave are coded as lower income, those whose parents were in the middle two quartiles as middle income, with high income as the reference group. Because race is also associated with both debt and fertility, we code respondents as black, Hispanic, and mixed race, with white as the reference group (Sweeney and Raley, 2014). We also do sensitivity analyses testing whether the association between debt and fertility varies by class and race by estimating interactions of debt with class and race. We include a control for marriage as well because marriage is associated with entry into homeownership and is also a well-known

precursor to fertility. Because marriage itself is connected to debt, we also run supplemental analyses omitting marriage, which we discuss below. In order to capture resource differences that could influence how burdensome debt is for respondents, we control for respondent income (respondent plus spousal income if married) as well as total annual hours worked.

4.5. Analysis

We use the discrete-time event history approach for our analysis. Event history techniques analyze specific discrete outcomes (such as birth of first child) using longitudinal data to predict the likelihood an event will happen in a given period of time (in our case, a year) (Castilla, 2007). The influence of various factors on the timing of the event can then be evaluated as increasing or decreasing the time taken for the event to occur, or as modifying the risk of an event occurring during a given unit of time. Event history techniques are thus well suited to analyzing the influence of debt on birth of first child. We estimate the probability of a respondent becoming a parent in a given year, defining the onset of risk at age 16. That is, respondent person-years are included in the analysis as soon as the respondent turns 16, which may occur at the first interview or later years. The year that a respondent becomes a parent is the last year included in the analysis, and all subsequent years are dropped. In event history language, this transition is interpreted as the ‘failure,’ but the coefficients can be interpreted as odds ratios and so we will use the latter language here. We estimate discrete models for each debt type in order to isolate their different relationships with fertility, although combined models including all debt types produce similar results. For each debt type, we include a base model containing only terms for debt and controls for duration dependence (age, age squared, and age cubed) to examine the basic association as well as more fully specified models to eliminate possible confounders.

We estimate separate models for men and women because we expect that debts have a stronger relationship with parenthood transitions for women than for men (Hypothesis 4). Although we discuss the results for both men and women below, we focus on the results for women because men underreport fertility and the results for women are therefore more reliable. This is especially an issue for early fertility: Joyner et al. (2006) find that younger and unmarried men are especially unlikely to accurately report fertility. Such bias is problematic because approximately 40% of children are born to unmarried mothers, and perhaps half of those mothers do not have a cohabiting partner (Cherlin, 2010). These numbers are likely even higher for women who transition into motherhood at an early age, and so we emphasize our findings for women here and remain cautious about supplemental analyses for men.

5. Results

Table 1 presents descriptive statistics for the overall sample using survey weights. Credit card debt is the most common form of debt followed by student loans. Home mortgages are the least prevalent, reflecting the youth of the sample, while women are more likely to have each type of debt than men. The low figures for average debt levels, college completion, work hours and income reflect the fact that many person-years in the sample include zero

values for debt, occurred before completion of college or the establishment of full financial independence.

Fig. 1 displays the Kaplan–Meier survival estimate as female respondents move from their teenage years through their late 20s. The y -axis represents the percentage of the sample that transitioned by a given number of years since the onset of risk at 16 (analysis time of 0). By the time respondents reach their late twenties (analysis time of 11+ years), a little more than half have become mothers, which is consistent with the estimates from other data sources of 50.6% for women age 25–29 (Monte & Ellis, 2014). About 58% of new mothers were married when their child was born, which also matches prior statistics (Cherlin, 2010), and provides further confidence for the validity of our sample.

In Table 2, we find that each debt type has the expected association with fertility for women that we developed in our hypotheses. The linear term for credit card debt in model 1 is significant, indicating that respondents with higher levels of debt are more likely to transition to motherhood in a given year consistent with Hypothesis 1. Hypothesis 2 is also supported as the dummy for home mortgage in model 3 indicates a positive association between debt and fertility. The dummy variable for student loans in model 5, on the other hand, indicates that women with student loans have lower likelihood of fertility in a given year, supporting Hypothesis 3. These models support our hypotheses that credit card debt and home mortgages are “fellow travelers” that accompany fertility, and that student loans signal a delay. In supplemental analyses for men, the base models all produce the same significant results.

When the full set of controls are included, student loans (model 6) remain significantly associated with a delay in fertility for women, continuing to support our expectation in Hypothesis 3 that the delayed payoff of student loans is associated with fertility delays. The controls are in the expected directions, with higher education indicators being associated with a delay in fertility, and black and Hispanic respondents having higher risk of fertility. Marriage, income (net of hours worked), and lower class background are also positively associated with fertility. The linear term in the spline is significant, indicating that among debtors, a \$1000 increase in student loans are associated with a 1.2% decrease in the annual risk of transitioning to parenthood. The dummy term is not significant, and this combined with the significant association for the linear term suggests that holding student loans more significantly affects fertility at higher levels of indebtedness. We address this issue below with an analysis of effects at different debt levels. None of the supplemental models for men with the full set of controls produce significant debt coefficients, consistent without our expectation in Hypothesis 4 that the debt–fertility relationship will be stronger for women than for men. In supplemental analyses, we estimated interactions of debt with class background and debt with race for women. These models indicate that the effects of student loans do not vary by race and class, all else equal.

While the debt indicators for credit card debt (model 2) and home mortgages (model 4) are not significant when we include a full set of controls, this is largely due to the strong relationship between these forms of debt and marriage. Married respondents are much more likely to accrue debt: 78% of women with mortgages in our sample are married, while 60%

of men with mortgages are married. There is also a steep gradient for credit card debt by marital status. While 17% of unmarried women and 15% of unmarried men report having credit card debt, that figure rises to 40% for married women and 36% for married men. This may be because married respondents are more likely to have acquired debt prior to marriage (perhaps because of the cost of the wedding itself), and marriage may also be associated with greater debt accrual. To address the close connection of debt with marriage, we ran separate models for mortgage debt without a control for marriage. We find that if we do not take marital status into account, having a mortgage is associated with a 124% increase in the likelihood of first child for women and a 92% increase for men (both estimates significant at $p < .01$, results not shown). For credit card debt for women, omitting marriage is also associated with a 19% increase in fertility at $p < .1$, although it remains insignificant for men. While we believe that controlling for marriage produces a conservative estimate of direct debt effects, these results suggest that debt has strong indirect effects because it is strongly connected to marriage, which is in turn an important precursor to fertility. Additionally, these results lend further support for our fourth hypothesis that although debt types have a similar association with fertility for men and women, the relationship is more robust for women. Additional research should investigate to what extent marriage shapes debt holding, either through pooling of liabilities or to finance new expenditure in order to further disentangle the complicated relationship between debt and family formation (Addo, 2014; Gibson-Davis, 2009).

So far the results support the expectation in Hypothesis 3 that student loans are associated with a lower yearly likelihood of transitioning to parenthood. We also expected that this relationship would be strongest at high levels of indebtedness. Because logistic regression models are nonlinear, the coefficients in Table 2 could vary by levels of debt (Long & Freese, 2014). In order to further understand the relationship between debt and the likelihood of becoming a parent, we estimate the predicted probability of a woman transitioning to motherhood at different levels of debt with other variables held at their mean, with results reported in

Fig. 2. The point estimate at zero student loans is 4.3%. The confidence interval at this level is small because calculations do not include the linear debt term. As student loans increase, the likelihood falls to an estimated 2.8% at \$50,000, and 2.5% at \$60,000. This last value is significantly different than the estimate for no debt, representing a 42% decrease in the risk of fertility. In comparison, young women with parents in the bottom quartile of income in 1997 have an 29% increase in fertility compared to those with parent in the top income quartile. This indicates that at high levels, student loans may have a similar association with fertility as class background.

We can therefore conclude that although student loans may not have noticeable effects on fertility at moderate levels, these effects can be quite substantial at high levels. This is consistent with our expectations, which include a general association between student loans and delayed fertility, but an especially strong relationship at very high levels of debt. And while the majority of debtors do not accrue this level of debt, a distinct minority does: among women with student loans, 2% have balances greater than \$50,000 at age 20, and at age 25, 9% have balances greater than \$50,000, while 6% have balances greater than

\$60,000. These results suggest that these women are qualitatively different, and that the career payoff compensating for this level of debt may take even longer than for more moderate debt levels.

To further contextualize our findings, we compare these effects to the effects by race and ethnicity, one of the most significant sources of variation in early fertility. Fig. 3 shows the likelihood of becoming a parent in a given year for Black, Hispanic, and White women, predicted from Model 6 in Table 2 (all other variables are held at their means). Black women have an estimated annual probability of transition of 0.075, while Hispanic and white women annual probabilities of 0.057 and 0.033, respectively. In other words, Hispanic women have 24% lower annual probability of transitioning to parenthood than black women, while white women have 56% lower probability than black women. White women have 42% lower probability than Hispanic women. When we compare this to the estimated 42% decline in probability for very high debt levels compared to no debt, we see that gradient by debt levels is at least as steep as the black-Hispanic gradient and the Hispanic-white gradient, although the black-white differential is greater. While debt may only affect fertility decisions at very high levels, these estimates indicate that debt warrants greater attention from fertility researchers.

6. Discussion

For many young adults, debt is an important part of economic life. Ranging from consumer loans to student loans to home mortgages, debt can serve as both a facilitator and constraint on key life transitions. Thus, while credit card debt and home mortgages are positively associated with early fertility, student loans are negatively associated even after accounting for demographic and socio-economic characteristics. These findings indicate that in a financializing world, family scholars need to take seriously how financial decision-making shapes life trajectories (Leicht & Fitzgerald, 2006). Moreover, because debt can take many forms and each type of debt carries different meanings and financial implications and has a complicated relationship with fertility precursors such as marriage, scholars must be sensitive to the complex and even contradictory relationships between debts and early fertility.

These results also suggest a more nuanced debt use dynamic than the vision of Americans put forward by proponents of “over consumption” theory (see Gottdiener, 2000; Schor, 1998). Young adults do not simply acquire debt as a result of profligacy or manipulation by advertisers, but rather use debt strategically to achieve broader life goals in early adulthood. Yet while credit can increase opportunities, such as facilitating access to higher education or a higher standard of living, the resulting debt can impose restrictions, particularly if the expected benefits are not immediate. Moreover, this study has only examined respondents up until they become parents, and it may be that debts become especially burdensome when families must balance debt repayment with the costs of raising children (Warren & Tyagi, 2003). If parenthood means further debt accrual, then debt may also be one of the mechanisms through which early fertility reduces subsequent educational attainment.

Although we believe that the payoff structure of loans over time likely accounts for the divergent relationship between different debt types and fertility, there are alternative explanations. Our account envisions family formation as a process planned in advance, although fertility is often unexpected (Sweeney and Raley, 2014). Perhaps different debts mean different things for intended versus unintended fertility. Home mortgages might be especially associated with intended fertility because they may signal a conscious preparatory step toward family formation. Student loans, on the other hand, may do more to delay unintended fertility if they indicate a greater focus on education and career. In future work using older samples, it will be important to evaluate whether the delay in fertility we see at higher levels of debt is significantly associated with decisions to pursue graduate and professional degrees. Credit cards are more of a puzzle. Credit card debt is commonly viewed as “bad” compared to student loans or home mortgages, and may be associated with a general lack of planning and thus unintended fertility. Or, credit card debt may result from a conscious decision to prioritize fertility over more economic concerns (Edin & Kefalas, 2007).

7. Conclusion

There are many implications of having moved to a debt society that we are only beginning to understand. Debt has become critical in the transition to adulthood, although debt itself has a complex relationship with early life transitions. And while debt can help young adults achieve educational, career, or lifestyle goals, young adults today must to borrow against the future in the hope that this investment pays off (Leicht & Fitzgerald, 2006). Debt appears to be one more factor that individualizes the transition to adulthood and produces greater uncertainty in the pathway through education into family formation and potentially beyond (Shanahan, 2000). It is also necessary to consider that for some, holding debt and delaying parenthood may be a perfectly satisfying path. Maybe these are the youth who are investing in upward mobility before becoming parents, or who are less interested in moving quickly to family formation and so discount the need for immediate financial readiness. Even the more negative results for those carrying high levels of student loans need to be interpreted with some caution. It could be that even if it delays parenthood, those with higher levels of student loans are better off pursuing education even with debt (Pew, 2014). Debt associations with later outcomes are not necessarily or self-evidently negative, but only with greater research on student decision-making about education and debt will we be able to understand these relationships.

In particular, we need more research on the implications of student debt-holding given different college experiences. There is so much heterogeneity in college experiences that it is difficult to talk about one college payoff. There are many reasons to be concerned about student finances, but a focus on costs at the expense of benefits can lead to bad outcomes if it leads college students to underinvest in their education. The difficulty is substantial data limitations on this variability, but there are initiatives to improve the data situation and there is much to be done even with the data that exist (Voight et al., 2014). Our results are consistent with our expectation that youth are engaged in a broader assessment of the role of a college degree in financial stability than current earnings, especially for youth carrying student debt.

The heterogeneity of experiences with debt bears on a broader discussion of stratification and mobility within a highly unequal society where responsibility for a range of financial matters, including financing college, is increasingly borne by individuals and families (Hacker, 2006). In this context of individualized risk, many youth depend on their own resources or capacity to draw on credit to launch into their adult position, and the decisions they make in those early years have many consequences for them in later years. The decision to take on debt is no simple weighing of costs and benefits in the highly differentiated landscape of US education, employment, and family life. Indeed, this differentiation itself produces a potentially riskier decision-making context for youth. The stakes are even higher given the uncertain and unequal labor market of the early 21st century. Given this, there is an urgent need for greater transparency, fairness, and clarity about loans and a greater commitment to the value of access to good quality credit with reasonable terms that ensures young adults can make it through the costly transition to adulthood with some insurance against the downsides of debt.

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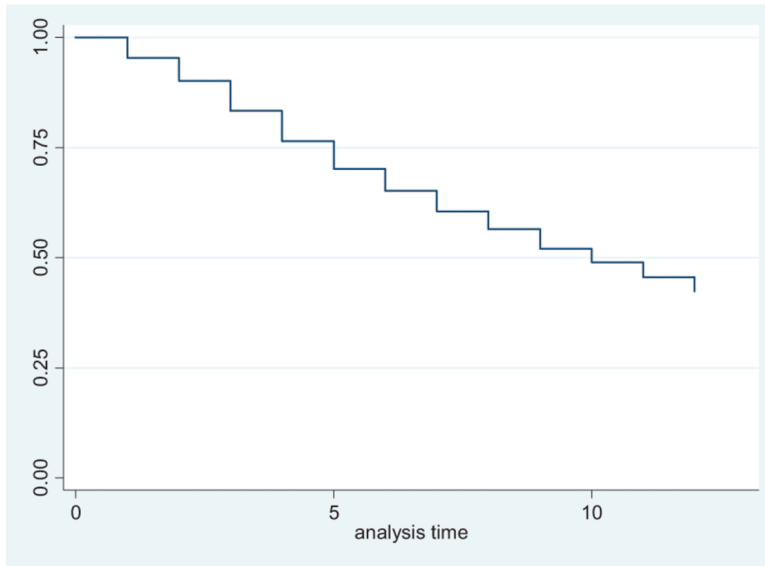


Fig. 1. Kaplan–Meier survival estimate for NLSY97 women in sample (onset of risk at age 16).

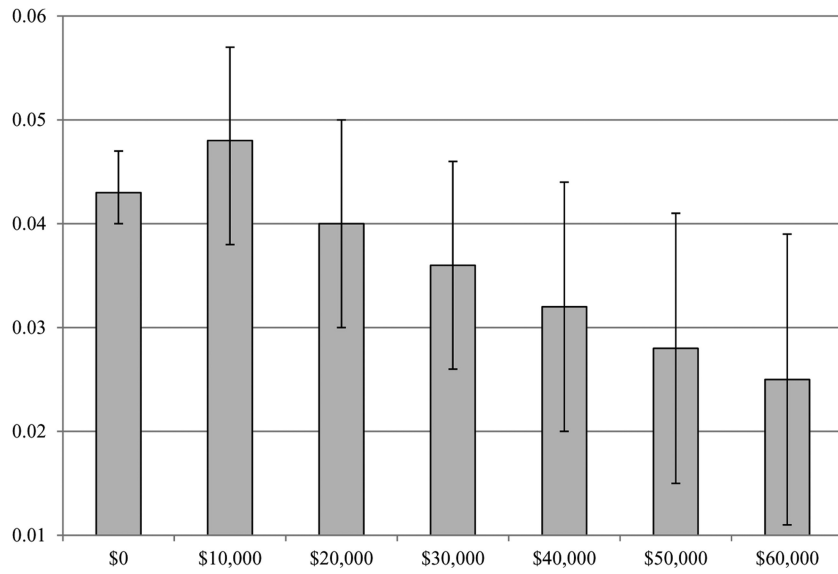


Fig. 2. Annual estimated likelihood of transitioning to parenthood among women by debt status*.
 *Estimated using model 6 from Table 2 with 95% confidence intervals and holding all other variables at their mean.

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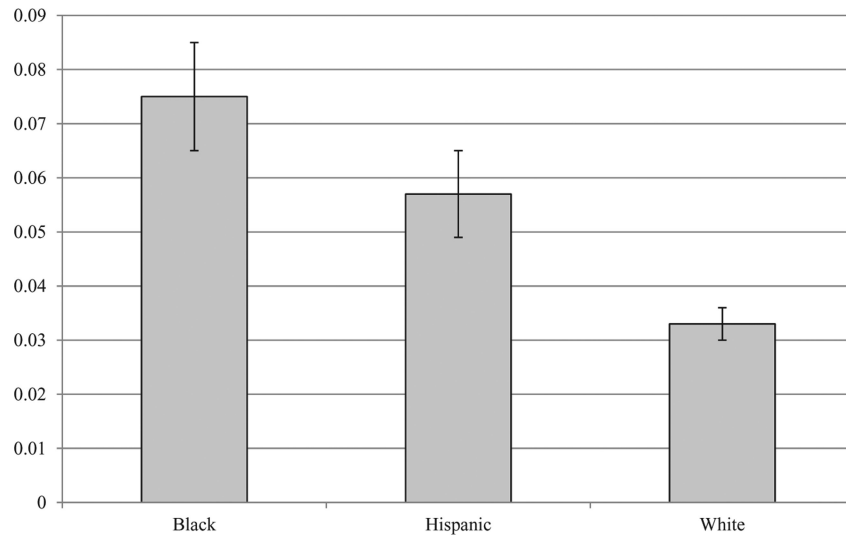


Fig. 3. Annual estimated likelihood of transitioning to parenthood among women by race/ethnicity*. *Estimated using model 4 from Table 2 with 95% confidence intervals and holding all other variables at their mean.

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Table 1Descriptive statistics (NLSY-97 women).^a

Credit card debt	
Carrying debt	23.2%
Mean debt amount	\$900
Student loans	
Carrying debt	11.8%
Mean debt amount	\$2066
Mortgage debt	
Carrying debt	3.7%
Mean debt amount	\$4083
Income	\$15,575
Education	
No college	56.7%
Some college	22.8%
Currently enrolled	7.8%
4-Year graduate	12.7%
Hours worked in last year	1161
Married	24.8%
Race	
White	73.1%
Black	14.0%
Hispanic	11.8%
Mixed	1.1%
Class origins	
Upper income	24.8%
Middle income	44.3%
Lower income	30.9%
<i>N</i>	3000
Number of person-years	17,541

Values for debt amount, income and work hours incorporate all person-years and include many zero values.

^aDebt values are for entire sample, including debtors and non-debtors.

Table 2

Debt effects on likelihood of first birth (NLSY-97 women)^{*}.

	<u>Credit card debt</u>		<u>Home mortgage</u>		<u>Student loan</u>	
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>	<u>Model 5</u>	<u>Model 6</u>
Amount of debt	1.022 [*] (0.009)	1.015 (0.012)	1.000 (0.002)	1.001 (0.002)	0.988 [†] (0.007)	0.988 [*] (0.006)
Carrying debt	1.069 (0.087)	1.124 (0.109)	1.837 [*] (0.446)	1.413 (0.401)	0.605 ^{**} (0.090)	1.176 (0.187)
Education						
Some college		0.217 ^{***} (0.026)		0.218 ^{***} (0.026)		0.217 ^{***} (0.026)
Currently enrolled		0.741 [*] (0.087)		0.748 [*] (0.088)		0.741 [*] (0.088)
4-Year graduate		0.436 ^{***} (0.056)		0.431 ^{***} (0.056)		0.441 ^{***} (0.058)
Race						
Black		2.205 ^{***} (0.187)		2.222 ^{***} (0.190)		2.189 ^{***} (0.187)
Hispanic		1.464 ^{***} (0.122)		1.479 ^{***} (0.123)		1.457 ^{***} (0.121)
Mixed		1.005 (1.002)		1.023 (0.397)		1.003 (0.396)
Income		1.000 ^{***} (0.000)		1.000 ^{***} (0.000)		1.000 ^{***} (0.000)
Hours worked last year		0.999 ^{***} (0.000)		0.999 ^{***} (0.000)		0.999 ^{***} (0.000)
Married		5.440 ^{***} (0.446)		5.444 ^{***} (0.448)		5.478 ^{***} (0.448)
Class origins						
Middle income		1.197 (0.119)		1.209 (0.122)		1.187 [†] (0.118)
Lower income		1.300 [*] (0.136)		1.317 ^{**} (0.139)		1.289 [*] (0.135)
Constant	0.000 ^{***} (0.000)	0.000 ^{***} (0.000)	0.000 ^{***} (0.000)	0.000 ^{***} (0.000)	0.000 ^{***} (0.000)	0.000 ^{***} (0.000)
<i>N</i>	3000	3000	3000	3000	3000	3000
Person-years	17,541	17,541	17,541	17,541	17,541	17,541

Notes: Coefficients presented are odds ratios from event history analysis. Age, age squared, and age cubed are also included in the models to control duration dependence.

^{*} *p* .05.

^{**} *p* .01.

^{***} *p* .001.

[†] *p* .1.