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GENDER, DEBT, AND DROPPING OUT OF COLLEGE

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Abstract

For many young Americans, access to credit has become critical to completing a college education and embarking on a successful career path. Young people increasingly face the trade-off of taking on debt to complete college or foregoing college and taking their chances in the labor market without a college degree. These trade-offs are gendered by differences in college preparation and support and by the different labor market opportunities women and men face that affect the value of a college degree and future difficulties they may face in repaying college debt. We examine these new realities by studying gender differences in the role of debt in the pivotal event of graduating from college using the 1997 cohort of the national longitudinal Survey of youth. In this article, we find that women and men both experience slowing and even diminishing probabilities of graduating when carrying high levels of debt, but that men drop out at lower levels of debt than do women. We conclude by theorizing that high levels of debt are one of the mechanisms that sort women and men into different positions in the social stratification system.

Keywords

race; class; gender; education; work/occupations

Higher education was once considered a public good that was a priority for society, but it is increasingly seen as a private good that should be individually financed. One unintended consequence is that many more students have to take on debt to finance a college degree (Baum and McPherson 2008). In this context of heightened borrowing, debt has become integral to educational attainment and the college experience for many young adults. The societal decision to finance higher education with debt shifts the risk of investing in college to individuals, with potentially perverse consequences. While parents and higher education administrators often see the opportunities and risks of taking on student loans as clearly in

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favor of a college degree—even with debt—there exist real risks to starting adulthood with a substantial burden of debt (Bowen, Chingos, and McPherson 2009; Leicht and Fitzgerald 2006; Rosenbaum 2001). Personal troubles like job loss, divorce, and illness often cannot be anticipated, and debt can make these difficulties harder to navigate (Drentea 2000; Sullivan, Warren, and Westbrook 2000; McCloud and Dwyer 2011). The transition to adulthood is itself increasingly uncertain, with recent cohorts facing a less clear path into careers, family formation, and home ownership than earlier generations (Bernhardt et al. 2001; Mortimer 2003). These uncertainties make a college degree ever more crucial to securing a place in the middle class, but they also raise the potential risk of carrying debt.

These risks are significantly differentiated by gender, however, as women and men face different material trade-offs and nonmaterial influences on educational attainment and the early career (Aronson 2008). At the same time that higher education has transformed from a quasi-public to a quasi-private good, women have become an increasing majority of college students. The female numeric advantage is even more pronounced at graduation, as men not only enroll in lower numbers than women but drop out in greater numbers (Buchmann and DiPrete 2006). Given this evidence that women and men traverse the terrain of debt-financed higher education differently, it is important to understand gender differences in the role of debt in college attrition. We examine the role of debt in dropping out of college for women and men in order to investigate gender differences in the system of debt-financed higher education. We expect significant gender differences because young women and men face different opportunities and constraints in the uncertain risks and rewards of making their way in a debt-based society.

Financing college is not usually seen as a gendered problem, but once debt is seen as one of the trade-offs young adults make in the course of the transition to adulthood, it becomes clear that gender may shape these calculations. Women and men face different labor market opportunities and so their assessments of whether debt is worth the eventual goal of a college degree can easily differ. Occupational segregation and the gender pay gap for women are especially large among jobs that do not require a college degree, and so women experience a greater relative college premium than men (Bobbitt-Zeher 2007; DiPrete and Buchmann 2006; England 2010). Women may feel more pressured to take on debt to finance college than men because women have fewer options for decent pay in jobs that do not require a college degree. Gender differences in the role of debt in college attainment may arise for reasons other than material trade-offs as well. Women and men differ in many of the nonmaterial influences on college attrition, including academic preparation, family support, and peer networks (Tinto 1987). Institutional support varies by gender even for students enrolled in the same college because of persistent gender differences in majors and extracurricular activities that may create differences in the contacts and contexts for female and male college students (Charles and Bradley 2009; Fox, Sonnert, and Nikiforova 2011). What is less well understood is whether these gender differences in experiences then translate into different likelihoods of taking on debt to complete a college degree. To the extent that this translation occurs, a nonmaterial process becomes a material difference in financial behavior.

The increasing female advantage in college completion shows clear progress for women that represents real improvements in girls' education and family investment in girls (Buchmann and DiPrete 2006). At the same time, women may attend college at higher rates because they have fewer options in the low-education labor market than do men (Bobbitt-Zeher 2007). One unacknowledged consequence may be gender differences in the role of debt in supporting adult attainments. In the analysis that follows, we investigate this process with a two-stage model in which we first consider the effects of carrying debt on graduation probabilities for women and men. Subsequently, we examine the different labor market

opportunities facing female and male college graduates and dropouts as a potential lens for understanding gendered debt effects on graduation. This analysis has the potential to shed new light not only on the new debt society, but also on the widely recognized but not fully understood surge in college attendance and completion for women.

GENDER, DEBT, AND DROPPING OUT OF COLLEGE

Young women and men have broadly equal access to debt, but the decision of whether and how to use it occurs within the constraint of gendered educational and labor market opportunities. Those constraints develop within the gender system, which shapes educational attainment and the early career in multiple ways through individual, interactional, and institutional processes (Risman 2004). When institutional arrangements, like the financing of higher education, change, the consequences ripple through the gender structure and affect gendered organizations like colleges to produce potentially different implications for women and men (Acker 1990). We expect that the effect of debt on the odds of dropping out of college operates differently for men compared to women because of gender differences in college experience and preparation and gender differences in labor market opportunities, both of which affect the pathway to a college degree in ways that may lead to a different role for debt in college attainment for women compared to men. We therefore see debt playing a new and potentially important role in the gendered structure of status attainment in the American mobility regime.

Scholars point to a range of factors in the gendered opportunity structure that contribute to women's increased chances of completing college compared to men that may also shape the influence of debt by gender. Differences in gender socialization have contributed to a persistent gender gap in academic achievement so that girls have long received higher grades on average than boys both in high school and college, and appear to have higher levels of skills and other predictors of academic performance, including self-discipline, attentiveness, and taking college preparatory courses (Buchmann, DiPrete, and McDaniel 2008; Downey and Vogt-Yuan 2005). As families have shifted to value educational investments in both girls and boys as a result of the spread of more egalitarian values and increasing incentives for women to complete a degree, the female-favorable gender gap in achievement appears to have been translated into female-favorable college enrollment and completion (Buchmann and DiPrete 2006). These differences in academic preparation and support may put women in a position to better leverage access to credit to achieve college completion.

Gender inequality in the labor market and in marriage may also lead women to consider debt a better investment in order to attain higher education than men. Women and men are more occupationally segregated in low-education jobs than in high-education jobs, making the gender pay gap particularly severe at the bottom of the labor market. England (2010) shows, for example, that working-class jobs saw only a slight decline in gender segregation from 1950 to 2000, even as middle-class jobs requiring a college degree desegregated significantly. Because low-education jobs for women are so poorly paid, women gain relatively more from attending college than do men. The gain in pay for female college graduates compared to less educated women is much greater than the gain in pay for male college graduates compared to less educated men (Bobbitt-Zeher 2007; DiPrete and Buchmann 2006). Even though college-bound women continue to concentrate in majors that lead to careers with lower wages than men, women's prospects in the low-education labor market are even more dismal (Charles and Grusky 2004; Fox, Sonnert, and Nikiforova 2011; Wilson and Boldizar 1990).

The gendered job structure may also contribute to these patterns, as the most female-typed occupations—such as teaching and nursing—that are aspired to by many young women all require a college degree. Gender essentialist beliefs that women are well suited to careers in care work and human development may lead women to value a college degree—even with debt—by seeing a college education as especially important in forming an adult female occupational identity (Charles and Bradley 2009; Ridgeway and Correll 2004). Women tend to hold aspirations of making a difference and caring for others in their careers, whereas men are more likely to prioritize the material rewards of jobs (Wilson and Boldizar 1990). Accordingly, a college degree becomes even more important for women in order to achieve personally meaningful careers than it is for men. Staying in college may thus pay nonmaterial dividends to women because of gender ideologies about the relationship between work and identity.¹ Women also appear to gain more from marriage when they have a college degree, and more so over time with increasing class homogamy (DiPrete and Buchmann 2006). Gender differences in these material and nonmaterial trade-offs may make women more dependent on a college degree, and thereby more dependent on debt in the context of rising tuitions.

RESEARCH QUESTIONS

We test our expectations about gender differences in debt and college completion by considering two issues. First, we analyze the role of student loans in college completion for women compared to men. Second, we examine early career outcomes for female and male dropouts and college completers as a potential explanation for gendered debt effects.

Gender and Student Loans

We conceptualize taking on student loan debt to achieve a college degree as an investment, but an investment with risks because of the uncertainties of being able to pay back the debt in the future, risk that we have argued vary by gender. We expect that this double-edged character of debt means that different amounts of debt will have different effects on the likelihood of college completion (Dwyer, McCloud, and Hodson 2012). Educational loans likely reduce the chances of dropping out at lower levels of debt, helping students through difficult periods and serving as a bridge over shortfalls from other sources of funding (Chen and DesJardins 2008; Dwyer, McCloud, and Hodson 2011). As educational debt reaches higher levels, however, it can generate increasing pressure to drop out (Ishitani 2006). Many students enter college relatively uninformed about debt and may take on large amounts of debt without thinking of the consequences until later in their college career as repayment looms (Bowen, Chingos, and McPherson 2009). Indeed, student concern about debt appears to build over the course of college as debt mounts and postcollege realities come into sharper focus—realities that can include negative outcomes like depression and suicidal ideation in addition to dropping out of college (Meltzer et al. 2011). Other students may get into debt because of personal problems or an unexpected decline in family support that makes it difficult to continue in college without extensive borrowing (Christie and Munro 2003). We expect that the gender differences in college experiences and labor market expectations discussed above will affect these mechanisms and the balance between risk and reward in taking on more debt.

¹There may also be differences in gender consumption patterns that lead to different debt behaviors, rooted in part in gendered childhood socialization into modern consumer culture (Schor 2004). If women are more likely to get into debt through personal spending encouraged by a culture that celebrates women's consumption, this could be an obstacle to completion. On the other hand, if women are more accepting of debt as a result of female socialization around consumption, they may be more willing to trade off debt for an investment like college. This is a ripe subject for future research on gendered consumption patterns.

Prior research has given almost no attention to gender differences in the role of debt in college attainment. Yet to the extent that women are better prepared and receive greater social support for college, and see more advantages to staying in college compared to dropping out, women should be willing to take on more educational debt to stay in college than men. Young men who see high school friends with relatively well-paying jobs may resist taking on debt to gain a degree with uncertain returns. They may ignore or discount some of the longer-term negatives of traditional male blue-collar jobs, such as the risk of unemployment and industrial decline. At the same time, young women who see friends in low-paying female-dominated jobs, such as retail cashier or day care worker, may be spurred to stay in school, even with debt. The motivation to continue in college in spite of debt is thus likely more pressing for women than for men. We can test these expectations by studying the differential effects of debt on dropping out of college for women and men. We expect that both women and men will evidence a nonlinear effect of debt—with debt increasing the chances of graduating at lower levels and leveling out or declining at higher levels. But we expect that men will drop out at lower levels of debt—because, more often than women, they will make the calculation that higher levels of debt are “not worth it.”

- Hypothesis 1** The effect of educational loans on graduation will be nonlinear—first positive at lower levels of debt and then negative at higher levels of debt for both women and men.
- Hypothesis 1a** Lower levels of educational debt will increase the chances of graduating more for women than for men because of differences in material trade-offs and nonmaterial support and expectations.
- Hypothesis 1b** Higher levels of educational debt will be more of a deterrent to completion for men than women, so that the negative effect of high debt on dropping out will occur at lower levels of debt for men compared to women.

Early Career Outcomes

We propose that gender differences in the role of debt in college completion reflect a gendered opportunity structure that increases the incentives of a college degree for women compared to men for a range of material and cultural reasons. Because we use longitudinal data on a cohort of young adults, we can analyze gender differences in early career outcomes for the women and men in our sample after their college experiences. This allows us to evaluate gender differences in the opportunity structure faced at these young ages that, we posit, shape decisions about debt and dropping out. It is especially important to examine these very early career outcomes that are most likely to impact decisions while in college.

Prior research suggests that students do consider their labor market opportunities when deciding whether to attend and complete college. Bozick (2007) shows that youth living in places with a labor market with a high proportion of jobs requiring a college degree are more likely to go to college than are youth living in places with more jobs that do not require a college degree. Youth are similarly sensitive to levels of unemployment and job growth (Bozick 2007). Of course, students do not have perfect information about labor market opportunities, and their decisions to stay and finish college versus dropping out are affected by many factors. But students appear sensitive to the balance between their financial resources and probable labor market opportunities in deciding to complete a college degree, and we argue that gendered opportunities make this a fundamentally gender-differentiated experience.

- Hypothesis 2a** Female college dropouts will have significantly lower earnings than female college graduates in their early career because of occupational

segregation and low pay for female-dominated jobs that do not require a college degree.

Hypothesis 2b Male college dropouts will have similar earnings to male college graduates in their early career because the job opportunities for low-skilled men are relatively better than for low-skilled women.

DATA AND METHODS

We use data from the National Longitudinal Survey of Youth, 1997 Cohort (NLSY97), to examine the effect indebtedness has on young adults' likelihood of graduating from college. The NLSY97 is an annually administered survey funded by the Bureau of Labor Statistics (BLS) that consists of two subsamples of young adults born between 1980 and 1984; the first subsample is a nationally representative sample of 6,748 young adults and the second subsample oversamples 2,236 Hispanic and Black individuals. The first year of data collection for this NLSY cohort was 1996, and the latest round of data available for our analysis was collected in 2010–2011. At the time of the latest available data, the young adults in our sample range in age from 25 to 31 years old, with a mean of 28 years. The NLSY97 is an optimal data set for our study because it has rich financial data on the cohort of young people who became adults following the democratization of credit in the 1990s.

In our first analysis, we use event history models to assess the relationship between debt and college completion. We take a discrete time event history approach in which the sample is composed of people who were enrolled in a four-year college in a given year and are thereby “at risk” of graduating from college in that year. This results in a sample of 29,081 person-years across the 13 survey years included in our analysis. Our sample includes 3,676 individual respondents, with a median of 8 years of observation for each respondent. The dependent variable is a binary indicator of whether the respondent graduated from a four-year college in the current year. In event history parlance, graduation is the “failure” event, and the model coefficients represent the “hazard” of failure, though we will for the most part not use this language. Duration to failure (graduation) and risk of failure are two ways of thinking about what the coefficients mean in a general sense—if being female increases the risk of graduation in any given period, it also means that being female reduces time to degree. However, because the coefficients have the same form as in a logistic regression analysis, we will discuss odds ratios in reporting our results.

These models require a measure of the duration-dependence of the hazard in order to control for the “baseline” risk of graduating in a particular year, which varies by how long a person has been enrolled in college. In other words, those who have been in college longer have a greater risk of graduating than those who just entered college. We use a linear duration term in the models we present in this article, but in supplemental analyses we also tested the possibility that duration has a nonlinear effect. A cubic term for duration is significant, but the model fit does not improve much and so we use the linear term for ease of interpretation.

We measure educational debt as student loans taken in each year the respondent is enrolled in college. The initial question is “Other than assistance you received from relatives and friends, how much did you borrow in government-subsidized loans or other types of loans while you attended this school/institution?” and a follow-up question asks how much is still owed on the loan. The amount owed refers to the remaining balance on the loan amount borrowed that year. For most respondents, the amount borrowed and owed are quite similar, but we use the owed quantity to exclude debt that was immediately repaid. We expect that these quickly repaid loans are less likely to affect graduation probabilities (they likely include unspent funds), and indeed, supplemental analyses using the total amount borrowed show a similar pattern of results to the main analyses here. We top-code the variable at

\$20,000, which is the 99th percentile for the variable across all years. Because we hypothesize that the impact of education debt is nonlinear, we include a squared term for education debt, expecting a quadratic effect of first increasing and then decreasing odds of graduating.¹

We include several control variables. We measure respondents' social class of origin in order to capture differences in the effect of indebtedness on college completion by family resources. We define respondent class standing using parental household income in 1996 (the first year of data collection), which is the sum of the income of the respondent's mother and father (or mother's spouse or cohabiting partner at the time). We divide respondents into three categories based on the position of parental income in the 1996 national income distribution: upper income if in the top quartile, middle income if in the middle two quartiles, and lower income if in the bottom quartile. We use parental income to construct the measures of social class because we believe the class standing of young adults is best represented by their social origins rather than by their current personal income. We test an alternative measure using parental education and find similar results.

We additionally control for race/ethnicity, with categories for white, Black, and Hispanic. Because the NLSY does not oversample the Asian population, we drop the small sample of respondents who identify as Asian from the main analysis but supplemental analyses show a similar pattern of results when these respondents are included as a separate category. We control for high school grade point average in order to capture differences in educational achievement, which may affect the relationship between debt and college completion.² Indicators for parenthood, and whether married or cohabiting, measure the influence of family arrangements on debt and college graduation (Bozick 2007).³ We also control for important features of the college experience, including whether or not the respondent was enrolled part-time and whether they attended a public or private college. Descriptive statistics are reported in the appendix.

In the second part of the analysis, we consider the earnings and occupational destinations of female and male college graduates and dropouts in their early career as a potential explanation for gender differences in debt effects on college graduation. The sample for these models includes employed respondents who are not enrolled in school but who have attended a four-year college at some point, with employment and school status measured at the end of our data series. Here we include only one unit per respondent (rather than multiple years) in order to estimate early career outcomes rather than employment fluctuations while respondents are still engaged in schooling. In these models we control for respondent characteristics that are especially relevant for labor force participation and choices, including class background, race, whether a parent, and whether married or cohabiting.

We consider the NLSY97 the very highest quality data available to study gender differences in debt and dropping out, but, like all studies, this analysis has limitations. The sample is relatively young and so we are not able to discern gender differences in the role of debt for students returning to college in mid-life, in their 30s or older. Even so, nontraditional students face a range of distinctive issues in debt and movement through college that may make a separate analysis of that group most appropriate. As the NLSY97 cohort ages, we will have the opportunity to consider the gendered role of debt in college completion for

²We prefer high school GPA to college GPA as a early indicator of achievement that may be less bound up with the decision to take on debt, though supplemental analyses with college GPA show a similar pattern of results.

³We test all models with a different measure of cumulative loans taken out for all years enrolled, which we calculate by adding together the amount of loans borrowed in each year. The results are quite similar for the analysis of cumulative loans as for the yearly amount, though the dollar amounts are, of course, much higher.

older students. We also face the challenge of possible selection bias, as in all observational studies. Students who are most likely to take on a large amount of debt may also be most likely to drop out, and so debt may not be so much a direct cause of dropping out as it is a fellow traveler in a set of behaviors that impede attainment. Students who have difficulty with self-regulation may, for example, take on debt carelessly and at the same time face challenges in keeping up with classes. We have taken steps to address the possibility of selection bias by using longitudinal methods and including controls in our regression model, but these are only partial solutions. Even to the extent that debt hitches a ride on other troubles, however, it is still a material financial obligation that is not easily discharged and thus becomes very real in its effects. Thus, we contend that even the weaker hypothesis of high levels of debt being associated with other troubles in college attainment is highly significant because students who already face challenges in their educational efforts now have the additional burden of high indebtedness.

RESULTS

The prevalence and amount of student loans taken out each year by college students in this nationally representative sample are reported in Table 1. About 38 percent of those enrolled take on educational loans in a given year. The mean educational loan taken out by debtors in a given year is \$4,719. Women are more likely to take out loans than men, with 40 percent of women and 34 percent of men taking out loans on average in each year. These results are certainly suggestive that debt-holding is a gendered experience. The mean *amount* of debt for men and women students who take on debt is quite similar, however, with women holding \$4,726 and men holding \$4,709.⁴ A measure of cumulative debt shows similar patterns, albeit at higher levels of debt, with almost half of all college students carrying debt overall, with a somewhat larger gender differential of women carrying more debt, at \$11,133, than men at \$10,829.⁵ Clearly, educational debt was part of the college experience for many students in the 2000s.

In Table 2, we consider two models of the likelihood of graduating from college, estimated separately for women and men. Model 1 includes the quadratic form of educational debt without any covariates, and Model 2 adds controls. (All models include the measure for duration of time in school, and this variable is consistently positive associated with graduation as expected.) Starting with model 1, and taking the results for women and men together, the findings support our expectation in hypothesis 1 that the effect of student loan debt on dropping out follows a quadratic form for both women and men. Higher levels of educational debt increase the chance of graduating (and lower duration to graduating) until a high level of debt is achieved, and then additional debts no longer increase the chances of graduating; in fact, the chances decline a bit compared to moderate levels of debt. In supplemental tests, we verify that the quadratic effect is *not* just the influence of outliers and that there is sufficient sample density at high levels of debt to support the quadratic effect. We also tested the effect of debt on graduation in a nonparametric model that does not specify the form of the debt variable in advance, and even here we see a downturn in graduation probabilities above \$10,000. Even if we think of the quadratic as modeling a flattening of the line more than a sharp downturn in the line, this is consistent with our interpretation that higher amounts of debt produce diminishing returns for college

⁴Married partners may be more likely to share financial decisions and resources than cohabiting partners, but we include both in one category since relatively few respondents are married.

⁵The NLSY97 annual and cumulative loan figures for college students are consistent with those of the National Center for Educational Statistics (NCES) for the entering class of 2007 (near the end of our time series), which reports 35.8 percent of students receiving loan aid in their first year in the average amount of \$7,100 (NCES 2010, Tables 3.1-A and 3.1-B), and with trend figures reported by the NCES between 1995 and 2004 (NCES 2008) that show increasing prevalence and amount of borrowing across time.

completion, and highlights the worrisome reality that many students leave college with high levels of debt but without a degree.

While the form of the effect is similar for women and men, there are gender differences in the level of debt where the quadratic turns negative and additional levels of debt no longer improve the chances of completing college. We can see these differences by calculating the inflection point of the curve for women compared to men using the coefficients reported in Table 2. In model 1, the base model with no additional covariates besides duration, the curve turns negative at \$14,620, while for men the inflection point is \$12,426. As we expected, men's graduation probabilities start to flatten at lower levels of debt than for women. This is consistent with theories that the relative value of college is lower for men than for women, in part because of men's better prospects in the noncollege labor market.

Model 2 for women and men includes a number of known influences on the likelihood of dropping out of college and produces effects similar to the findings from prior research. Effects are in the same direction for women and men, though the size of the effects varies by gender, consistent with previous studies of gender differences in higher education. Youth from lower-income backgrounds are no more or less likely to graduate than are youth from middle-income backgrounds, while youth from upper-income backgrounds are more likely to graduate than youth from middle-income backgrounds. This is consistent with observations that the lower-income-background students who attend college are a more select group than youth from middle-income backgrounds. Despite having fewer family resources, the average lower-income student who attends college may be more academically talented and motivated than the average middle-income student who sees college as a normative expectation. Youth from upper-income backgrounds may also see college as normative but benefit from greater resources and perhaps superior preparation. Black and Hispanic students are less likely to graduate than white students, with the racial effect stronger for men than for women, consistent with previous research on racial disparities in college completion (Buchmann and DiPrete 2006). Students who enroll in college part-time or have children are less likely to graduate, likely because of the pulls of competing responsibilities and demands on resources, while students who are married or cohabiting are more likely to graduate. Students with higher high school grade point averages are more likely to graduate, consistent with research on educational achievement. Private school attendance is not significant in the full model for men, and it reduces the chances of graduating for women, which contrasts with expectations. We suspect that this difference may reflect women disproportionately attending less prestigious private colleges, where their graduation prospects are reduced. Importantly, we find that the gender-differentiated effects of debt on dropping out of college still hold even after we control for these competing influences on graduation potentials.

When we add the controls in model 2, the curvilinear effect of educational debt on graduation remains quite stable. The inflection point does occur at a slightly higher level for both women and men in the full model compared to the base model, consistent with the idea of the covariates accounting for some of the debt effects, but the changes are very small, with the inflection point for women at \$14,682 and for men at \$12,711. The gender differential thus remains about the same even after controlling for family background and differences in college preparation and experience.

The gender differences in the effect of debt on college graduation are even more clearly illustrated in Figure 1, which graphs the predicted values for the curvilinear effect of educational loans for women and men.⁶ The predicted values reflect the full model 2, with all control variables set to their mean. Recall that because we are using event history models,

the predicted probability plotted on the y -axis is of graduating in a particular year rather than the overall probability of completing college.

The entire curve tracks higher for women than for men. This is consistent with women's greater graduation probabilities overall, but it also suggests that debt is a greater facilitator of graduation for women than for men. Supporting this interpretation, the curve for men tracks shallower and turns negative at lower levels of debt, indicating that educational loans are less effective at preventing dropping out and that men drop out at lower levels of debt than do women. The gender differential thus increases at higher levels of debt—the gender gap in graduation is less than 0.05 percentage point at zero debt, but close to 1.0 percentage point at the highest levels of debt. This pattern of gender differences supports our expectations that women and men face different pathways through debt-financed higher education, with potentially important consequences for their longer-term financial circumstances above and beyond the effect of college attainment. As we enunciated in hypothesis 1a, lower levels of debt increase the chances of graduating for women more than for men. The curve starts higher for women than men and stays higher along the whole curve. At the same time, the curve turns downward at a higher level of debt for women than for men. This supports our expectation in hypothesis 1b that higher levels of debt are more strongly associated with dropping out of college for men than for women, suggesting that education debt becomes an impediment to completion at lower levels for men than for women.

So far we have highlighted gender differences in debt and graduation, but research on college graduation shows that there are also substantial racial differences in graduation probabilities, and that these interact significantly with gender (Buchmann and DiPrete 2006). We examine racial differences within gender by studying differences in predicted probabilities in college graduation across levels of debt for different racial groups. We find that the curve for Black and Hispanic students tracks lower than the curve for white students for both men and women and that the inflection point occurs at somewhat lower levels as well. At the same time, Black and Hispanic women are more likely to graduate across all levels of debt than are Black and Hispanic men. In supplemental analyses, we do not find strong interaction effects between race and debt, but we suspect this reflects the fact that our sample becomes sparse at high levels of debt for the Black and Hispanic subgroups. Additional analysis with larger samples of minority students (including Asian students) will be necessary in order to sort out the details of racial differences in debt and graduation by gender. The perils of dropping out of college without a degree, but with debt, may be particularly serious for minority students who face racial discrimination in the labor market and are more likely to lack family resources to help pay off the debt.

Our analysis sheds light on important realities of gender differences in navigating increasingly debt-financed higher education. Both men and women are vulnerable to getting in over their heads with student loans, and accruing a very large amount of debt without achieving the credential of a higher degree, but men are more deterred from completing by having debt than are women. The resulting debt burden may compound the difficulties faced by young adults as they drop out of college and move more fully into the labor market.

⁶We tested for the effect of outliers in the models by gender, with similar findings of sufficient sample at the high levels of debt to support the quadratic interpretation. The sample portion beyond the inflection point makes up about 10 percent of all debt holders in our sample depending on the specification of the model.

FEMALE AND MALE COLLEGE DROPOUTS IN THE EARLY CAREER

The gender differentials we find support our interpretation that youth face gendered trade-offs in decisions about dropping out or completing college. We have argued that debt affects the likelihood of dropping out differently for women compared to men because of a range of differences in college experience and expectations about postcollege opportunities. A full evaluation of this hypothesis awaits future analysis, but we can investigate the labor market prospects of female and male college dropouts compared to college completers within the early careers of our sample of respondents. This will help us understand not only the material trade-offs faced by young adults as they make decisions about college completion but also gender differences in the implications of leaving college—even if for nonmaterial reasons—with debt but without a degree.

Given prior research that women receive a greater relative wage premium for college than do men, we hypothesized a larger gap between the earnings of women dropouts and graduates than between men dropouts and graduates in hypotheses 2a and 2b. Indeed, this is what we find for this sample of youth in their early careers in regression analyses of earnings for employed women and men. The results in Table 3 indicate that employed female dropouts have much lower earnings than female college graduates, making more than \$6,500 less even after controlling for demographic factors, as we expected in hypothesis 2a. In contrast, men who drop out have similar earnings to male college graduates (at least in the early years after college) with no significant difference in their earnings, which supports our expectation in hypothesis 2b. These observed differences are not simply a result of female college dropouts working fewer hours than female college graduates, since differentials exist for hourly wages as well as for annual income. Both female and male college dropouts experience greater unemployment than college graduates, but this difference does not explain the within-gender earnings differentials. As we expected, women experience a much larger immediate economic penalty for not graduating from college than do men.⁷ Female dropouts simply face worse job prospects than do male dropouts.

We see evidence in our sample of young adults that the differences in earnings for female and male dropouts and graduates tracks with persistent gender segregation at the bottom of the labor market, as we expected in hypotheses 2a and 2b. Figure 2 shows the predicted probabilities of employment in different occupational groups for female and male dropouts and graduates from a multinomial logistic regression. We group occupations into four categories—service, clerical, professional, and manufacturing, construction, and transportation jobs. Clerical is highly female dominated and manufacturing highly male dominated, whereas service and professional work reflect more gender balance. The graph clearly illustrates that the occupations of dropouts are more differentiated by gender than are the occupations of graduates. Female dropouts concentrate in service and clerical positions, whereas male dropouts concentrate in manufacturing, construction, and transportation. Female dropouts have an almost 0.30 probability of working in a clerical occupation, whereas the probability of clerical work is less than 0.20 for women college graduates and only 0.10 for male dropouts. Female dropouts also have a more than 10-point higher probability of service work than male dropouts (though male dropouts also have a high probability of working in a service occupation). In contrast, male dropouts have a probability of working in a manufacturing, construction, or transportation occupation of more than 0.30, while for women the probability of being in one of those jobs approaches zero. Manufacturing, construction, and transportation occupations are among the best-paid

⁷We include a small set of controls because we are interested in the average differences in earnings by graduate status in order to understand the capacity of dropouts with debt to manage their debt. Thus, we do not model the causes of those different earnings in the differential work experiences, like occupational attainment, that flow from graduation status.

jobs for those without a college degree, whereas service and clerical jobs are much less well paid (England 2010). Gender occupational segregation thus strongly shapes the occupational experiences of female and male college dropouts.

We have argued that these differences in labor market prospects for women and men who drop out of college represent one of the underlying reasons for gender differences in the influence of debt on dropping out of college. Even if the gender differences in the role of debt in dropping out arise out of the nonmaterial influences that we have also discussed, the labor market inequalities suggest that women face even more risk when they do drop out of college with debt for whatever reason. While there has been quite a lot of attention paid to the increasing female advantage in college completion, there has been less consideration of the implications of those differences in a system of higher education that depends heavily on individual indebtedness.

The debt system for financing college creates risks for both women and men. Women are not only at a disadvantage in the low-education labor market, they also face a situation where many gain access to higher levels of achievement only through taking on significant debt. Especially since female college graduates still earn less than male college graduates, debt-financed higher education may hit women harder than men, even as it is more necessary. Future research should consider the relationship between student debt accrual and college major in order to understand how gender segregation shapes the implications of increasingly debt-financed higher education. On the other hand, men who are lured out of college by the promise of decent pay in manufacturing, construction, and transportation jobs, or who find themselves out of college for other reasons, may face considerable uncertainty in their employment as some of these sectors continue a decades-long contraction, and even the more robust sectors, like construction, are highly sensitive to the business cycle. The short-term earnings benefits of low-education jobs for men may also fade over time, as male college graduates pull ahead of male dropouts in earnings across the life course (Bernhardt et al. 2001).

CONCLUSIONS

Our study provides some of the first evidence that debt-financed higher education intersects with the gender system to create differential outcomes for women and men. In a period of high college tuitions and widely available credit, the risks and rewards of taking on debt have become salient issues for many young adults, but scholars have had little to say about these issues. Women and men attempt to make reasonable choices about their finances and college attainment, but these decisions are made within the constraints of a debt system and a gender system that shape opportunities and risks in college, in the labor market, and beyond. We have only begun to understand the role of borrowed resources in the system of gendered status attainment, and future research on the young adults coming of age during the twenty-first century will be critical to understanding how debt effects differentiate by gender. Studying the process by which female and male students move through and exit college, including qualitative work that engages students directly, will be essential in future research on debt and dropping out of college.

Women and men who leave college with debt but without a college degree will experience heightened disadvantage, and we know very little about how young people manage debt as they move into later stages of the life course, including family formation and home ownership—in part because these realities are only now unfolding. What are the gender differences in the consequences of carrying debt into the transition to adulthood? Does debt affect marriage timing and matching? Women appear to gain a larger premium from college in the marriage market as well as the labor market compared to men, but we know little

about the role of debt in facilitating or blocking advantageous matches (DiPrete and Buchmann 2006). The long-term gender differences of the impact of debt are quite likely further differentiated by race and class (Espenshade and Radford 2009; McCall 2011). These questions will require analysis of debt across the life course. Our results here represent an early snapshot of gender differences in the role of debt, but future research will need to consider the cumulative effects of debt across the life course to disentangle the effect of debt for women compared to men during and after college.

As we have argued, there are significant risks to funding higher education with debt, and these risks and rewards differ for women and men. The recent financial crisis has prompted a societal conversation about the risks of financing the American Dream with debt, and has yielded new safeguards to make credit somewhat less available to youth (Credit Card Accountability Responsibility and Disclosure Act of 2009). We wonder if this conversation has gone far enough, however. In all the debate about the housing bubble and risky financial instruments, there has been very little discussion of parallel developments in higher education as tuition hikes and declining state support are increasingly financed by individual students and their families. Perhaps debt serves as an effective way to underwrite investment in the next generation's talent—and the positive effects of relatively low levels of educational loans certainly provide some support for this view. The lagging college completion rates are a sign of trouble, however, and we ultimately know very little about how youth manage their debt loads as they move into adulthood. We as educators, and all who work within the system of higher education, are not on the sidelines of this conversation. Just as we defend the core academic values of our institutions, so should we support the value of higher education in an increasingly global world, and the value of *affordable* education without the liability of excessive, even potentially crippling, debt.

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Figure 1. Estimated probabilities of graduating from college by educational debt for women and men enrolled in college, full model

Note: Educational debt is measured in thousands of dollars.

Figure 2. Predicted probability of occupation in early-career female and male college dropouts and graduates

Note: Figure reports the predicted probabilities from a multinomial logistic regression of education status on occupational status in a full model with control variables.

TABLE 1**Annual Educational Loans Taken by College Students in the NLSY97**

	All	Women	Men
Percent with debt	37.7%	40.4%	34.4%
Mean debt	\$1,757	\$1,874	\$1,614
Mean debt for debt holders only	\$4,719	\$4,726	\$4,709
N (person-years)	29,081	16,068	13,013

Source: National Longitudinal Study of Youth, 1997 Cohort.

Notes: Sample is all students currently enrolled in a four-year college. Descriptive results in this table are weighted.

TABLE 2

Discrete Time Event History Regression of Debt on College Graduation

	Women			Men		
	Model 1	Model 2		Model 1	Model 2	
	B (SE)	Odds Ratio	B (SE)	Odds Ratio	B (SE)	Odds Ratio
Duration	0.635 *** (0.010)	1.887 *** (0.019)	0.694 *** (0.012)	2.002 *** (0.024)	0.608 *** (0.011)	1.836 *** (0.020)
Education debt	0.077 *** (0.015)	1.080 *** (0.016)	0.093 *** (0.016)	1.097 *** (0.017)	0.099 *** (0.018)	1.104 *** (0.019)
Education debt squared	-0.003 *** (0.001)	0.997 *** (0.001)	-0.003 *** (0.001)	0.997 *** (0.001)	-0.004 *** (0.001)	0.996 *** (0.001)
Control variables						
Social class origin (middle income omitted)						
Lower income			0.074 (0.061)	1.077 (0.066)	0.076 (0.071)	1.079 (0.076)
Upper income			0.337 *** (0.057)	1.401 *** (0.079)	0.353 *** (0.065)	1.423 *** (0.092)
Race (non-Hispanic white omitted)						
Black			-0.462 *** (0.065)	0.630 *** (0.041)	-0.433 *** (0.081)	0.649 *** (0.053)
Hispanic			-0.271 *** (0.074)	0.762 *** (0.057)	-0.641 *** (0.086)	0.527 *** (0.045)
Children			-1.405 *** (0.074)	0.245 *** (0.018)	-0.967 *** (0.103)	0.380 *** (0.039)
Married or cohabiting			0.222 *** (0.057)	1.249 *** (0.071)	0.220 *** (0.071)	1.247 *** (0.088)
Grade point average			0.009 *** (0.001)	1.009 *** (0.001)	0.012 *** (0.001)	1.012 *** (0.001)
Enrolled part-time			-1.211 *** (0.116)	0.298 *** (0.035)	-1.590 *** (0.142)	0.204 *** (0.029)
Enrolled in private college			-0.236 *** (0.076)	0.790 *** (0.060)	-0.036 (0.091)	0.965 (0.088)
Intercept	-3.749 *** (0.057)	0.024 *** (0.001)	-6.657 *** (0.230)	0.001 *** (0.000)	-3.916 *** (0.066)	0.020 *** (0.001)
N	16,068		16,068		13,013	

Source: National Longitudinal Study of Youth, 1997 Cohort.

Notes: Debt variables were measured in thousands of dollars.

p < .001 (one-tailed).

TABLE 3

Ordinary Least Squares Regression of Graduation Status on Annual Earnings for All Employed Respondents and for Employed Women and Men

	All	Women	Men
	B (SE)	B (SE)	B (SE)
Gender	–8,137.99 *** (675.83)	–	–
Female (male omitted)		–	–
Graduation status (college graduates omitted)			
High school graduates	–5,935.63 *** (804.36)	–6,590.85 *** (1,103.71)	–2,751.72* (1,281.03)
College dropouts	–2,945.12 *** (819.13)	–4,621.75 *** (1,013.75)	1,000.40 (1,300.98)
Control variables			
Parents' social class (middle-income parents omitted)			
Lower income	–	–1,473.39 (1,003.78)	–89.27 (1,267.49)
Upper income	–	1,261.64 (965.24)	6,115.15 *** (1,217.50)
Race (non-Black, non-Hispanic omitted)			
Black	–	–298.45 (1,256.03)	–5,839.89 *** (1,634.42)
Hispanic	–	1,220.91 (1,378.42)	–2,684.11 (1,650.19)
Children	–	–4,575.12 *** (981.36)	3,698.93* (1,453.59)
Married or cohabiting	–	2,160.58* (840.70)	7,377.01 *** (1,143.70)
Intercept	34,515.62	27,261.45	27,318.98
Model <i>N</i>	5245	2699	2546

Source: National Longitudinal Study of Youth, 1997 Cohort.

Note: We do not log earnings because it is top-coded and less skewed among this young sample.

 $p < .001$ (two-tailed).

APPENDIX

Descriptive Statistics for Variables in Analysis of Debt on Graduation

	All	Women	Men
Graduate college in survey year	30.7%	32.7%	28.3%
Duration in college (years)	3.6	3.7	3.6
Female	54.7%	–	–
Male	45.3%	–	–
Lower-income parents	24.6%	24.4%	24.8%
Middle-income parents	38.0%	40.5%	34.9%
Upper-income parents	37.5%	35.2%	40.3%
Black	12.0%	13.0%	10.7%
Hispanic	8.6%	8.1%	9.3%
White	79.4%	78.9%	80.0%
Had children while enrolled	12.4%	15.2%	9.0%
Married or cohabited while enrolled	26.2%	30.0%	21.5%
Attended private university	13.2%	13.8%	12.4%
Enrolled part-time (except summer)	6.1%	6.0%	6.24%
High school grade point average (mean)	3.20	3.25	3.14
Person-years	29,081	16,068	13,013

Source: National Longitudinal Study of Youth, 1997 Cohort.

Notes: Reported means and percentages are weighted.