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The Price of Opportunity: Race, Student Loan Debt, and College Achievement

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As tuition costs at public and private universities continue to climb, an increasing number of students are turning to college student loans (College Board 2009, 2011). According to one estimate, student loan debt recently reached $1 trillion dollars, surpassing credit card debt for the first time (Chopra 2012; Lewin 2011). Another report estimated that two-thirds of college graduates in 2010 had student loan debt, with an average of $25,250 (Project on Student Debt 2011; see also Baum and Steele 2010). Though some question whether college is worth it for many students given the rise in costs, the predominant response is that the (average) lifetime economic benefits of getting a college degree greatly exceed the indebtedness students typically accrue (e.g., Carnevale, Rose, and Cheah 2011). Less frequently considered is how much the reward-to-risk ratio varies by the race/ethnicity of the degree seeker. This paper examines student loan debt among Black and White college students to better understand the link between loan use and college achievement and its implications for racial educational inequality.

College student loans stand to increase college attendance and completion among Black young adults and potentially narrow the gap in degree attainment between Blacks and Whites, since Black students are more likely to come from economically disadvantaged families. Indeed, Black college students are more likely to take out student loans than White students, which may reduce racial educational inequality to the extent loans increase access and/or boost college persistence. But greater reliance on loans also means that Black students increase their exposure to the risks of indebtedness, such as high debt burdens and the credit consequences of defaulting on a student loan. Black students tend to borrow more than their White, Asian, and Hispanic peers (Cunningham and Santiago 2008; St. John et al. 2005), and they are more likely to default on their loans (e.g., Volkwein, Szelest, Cabrera and Napierski-Prancl 1998).

In this paper we examine student loan debt in relation to the Black-White gap in college persistence and completion, and ask whether the payoffs from this debt to getting a degree are worth the resulting debt burdens and financial risks. Our prospective analyses of a national cohort of Black and White beginning college students in the late 1990s seek to address the following questions. First, do loans benefit the college persistence and degree completion of Black and White college students? If so, is there a racial difference in the scholastic returns to student loan use? Second, we ask whether the benefits of loan use are commensurate with or outweigh the risks. These questions bring race to the forefront of the current debate over whether seeking a college degree is worth it at any cost. We argue that the social distribution of high debt burdens, loan defaults, and unfinished college degree programs highlights the racial nature of the downsides of a "College for All" ethos, and links the topic of student debt to the intergenerational transmission of racial (dis)advantage.

We conceptualize racial differences in college success and student debt within a broader theoretical model of intergenerational racial stratification. Oliver and Shapiro (1997) refer to the "sedimentation of racial inequality" to describe how contemporary racial disparities in financial well-being profoundly reflect the cumulative advantages and disadvantages of past generations. Black students' greater need for financial assistance is partly attributable to racial gaps in parents' (and grandparents') income, wealth, and education. Loans have the potential to help disrupt the intergenerational sedimentation of inequality if they equally benefit Black and White students' persistence in college. Yet racial differences in college completion and defaulting on loans undermine that potential. Though we are not able to extend our analysis of the significance of loans beyond college completion or defaulting, in the discussion section we return to the issue of how the racial stratification of student debt impacts this generation's capacity to build wealth.

LITERATURE REVIEW

College Student Loans and Race

Most of today's federal student financial aid programs originated in the Higher Education Act of 1965. When President Lyndon Johnson signed the legislation, he proclaimed that "a high school senior anywhere in this great land of ours can [now] apply to any college or university in any of the 50 States and not be turned away because his family is poor" (Sacks 2009: 175). Loans may act as social levelers of racial inequality if (a) they benefit access and persistence, (b) they do this equally or more so for students from disadvantaged race/ethnic groups, and (c) disadvantaged racial groups use them more than White students, as would be predicted by their fewer economic resources. If these conditions are true, then college student loans should lead to greater numbers of Black college graduates relative to Whites than would otherwise be the case.

The importance of student loans for college completion looms ever larger as college enrollments and college costs both continue to increase, possibly especially for Black students. As college pricing has risen over the past decade, more families have turned to loans as a way to finance college (College Board 2008, 2011), and the average debt load has increased among college students. In 2000, the average debt load for a four year public university student was $17,000 (adjusted dollars), which was more than twice the average from 1991 (Lumina Foundation 2002), and it continued to grow through the late 2000s (College Board 2008). Many studies find that Black college students more often use student loans to pay for college than do White students, though some of the evidence is mixed. It is less clear from past research whether student loan balances are greater for White or Black student borrowers. According to a 2004 special report on college financing, the average amounts borrowed by Black and White college graduates in the early and late 1990s were about the same (NCES 2004: Table 38-1). Other

analyses of the same data—the Baccalaureate and Beyond Study—find that among those who do not complete their degrees, Black students borrow more than White students (Kim 2007).

Parental financial background is an important factor in understanding racial variations in student loan use. Class inequalities in parental income, wealth, and education are mirrored in the degree to which college students struggle with college finances (Charles, Roscigno, and Torres 2007; Paulsen and St. John 2002). Among high school graduates who do not attend college, the reasons for not attending often include economic barriers and a lack of family financial resources (Bozick and DeLuca 2011). The same holds true for Black students, who tend to come from more economically deprived backgrounds than their White peers (Hu and St. John 2001; Kaltenbaugh, St. John, and Starkey 1999; St. John, Paulsen, and Carter 2005). Due to this intergenerational financial disadvantage, Black students are more likely than White students to receive some sort of financial aid, including loans (Hu and St. John 2001; Oliver and Shapiro 1997; St. John, et al. 2005). Yet, relatively little sociological research has considered the implications of racial differences in loan use for college persistence and racial educational inequality (cf., Bettinger 2004; Dowd and Coury 2006; Heller 2008; Hossler et al. 2009).

Implications of College Student Loan Debt for Racial Stratification

College loans carry with them risks and postponed costs in exchange for increased opportunity. Large loans consume later income that otherwise could be saved or invested, and loans do not always lead to degree completion or to degrees that provide access to highly-compensated jobs (Gladieux and Perna 2005). Furthermore, they expose young adults to the risk of defaulting and the associated credit consequences, described below. These two contradictory possibilities lead us to ask "are college loans worth it?" The need for research-based answers to this question will only increase as tuition and student loan debt continue to rise.

It is important to recognize that there are racial differences in access to college among college aspirants, and college completion among those who matriculate, and that student financial aid likely influences both processes. In this paper we focus on completion of bachelor's degrees six years after enrollment, partly because college completion is arguably more consequential for racial stratification and also because of our focus on student loan balances and defaults, which apply only to those who enter a college or university. In the latter part of the 20th century, non-White high school graduates' overall access to higher education increased significantly to a level on par with Whites of similar socioeconomic status (Roksa et al. 2007), suggesting a weakening of racial barriers. Racial stratification, however, still looms large in terms of the percent of college students who graduate. Despite improvements in access to colleges and universities, Black college students have lower graduation rates than White college students. Among first-time students at four-year institutions, the Black-White graduation rate gap is almost 20 percentage points (Snyder and Dillow 2011: Table 341).

Previous research assessing the impact of loan use on college access and persistence is inconclusive. Based on their analysis of community college students in the 1990-94 Beginning Postsecondary Student study, Dowd and Cowdry (2006) report that taking out loans has a negative effect on persisting through the second year of college and no benefit for obtaining an associate's degree. Paulsen and St. John (2002) studied the general college student population in the late 1980s and found that loans decrease the odds of persistence among lower income students and have no effect on other students (see also Gladieux and Perna 2005). Yet, others have found a small positive influence of student loans on persistence in other populations or when looking at longer time spans (e.g., Campaigne and Hossler 1998; DesJardins, Ahlburg, and McCall 2002). A recent review of the research on college completion concluded that the amount

of aid a student receives does have an effect on persistence for students at four year colleges, but this pattern varies depending on school selectivity (Attewell, Heil, and Reisel 2011). Overall, past research suggests that the salutary effects of loan use on persistence are weak and potentially contingent on students' economic status and their access to other forms of financial aid such as grants and scholarships (Hu and St. John 2001; Paulsen and St. John 2002; see also reviews by Bettinger 2004 and Heller 2008).

It is also unclear from past research whether student loans benefit racial and ethnic minorities or narrow racial gaps in degree attainment. Some studies report that college student loans are weakly or negatively related to college access and persistence among Black students (Baker and Velez 1996; Perna 2000; Somers, Cofer, Hall, and Vander Putten 1999). Others find that minority college students who borrow are more likely to stay in college and get their degrees compared to minority students who do not use loans (Chen and DesJardins 2010; Cunningham and Santiago 2008). Regardless of the benefits of loans for degree completion, some argue that minority students see loans as simply the "price of admission to the middle class" (Somers, et al. 1999). Furthermore, since Black and Hispanic students are more likely to be first generation college students, the lost educational opportunity from not borrowing may be greatest for these minority students (Cunningham and Santiago 2008:29; see also Green 2001).

Even if the use of loans makes sense due to the potential benefits for college persistence and the gains associated with college credentials, attention must also be paid to the financial risks that come with all loans. One such risk is the possibility of high loan balances and debt burden at the end of college (degree in hand or not). As defined by the Department of Education, student loan debt burden equals the ratio of monthly student loan payments to current gross monthly income, and a debt burden greater than 8 percent is considered to be "high" and at

significant risk of defaulting. Student loan debt burden is one aspect of the more familiar

household debt service ratio (DSR), or the ratio of interest payments to disposable income.

Household DSR in the U.S. increased steadily from the early 1990s until the 2007 financial crisis

(Federal Reserve 2013).

Excessive debt burdens are problematic for students and the broader economy because

they hinder future growth/investment (Dynan 2009). Further, student loan debt burden is

unequally distributed in society. According to Price (2004), around 25 percent of Black college

graduates in 1997 had high debt burdens thus defined, while the rate for White graduates was

around 20 percent. High loan balances relative to income means a financial disadvantage for

Black students after college graduation, a disadvantage that may result from racial disparities

among college graduates in their loan balances, their post-baccalaureate incomes, or both. Of

even greater concern are those who take on large loan balances and do not complete their degrees

(Gladieux and Perna 2005).

The second major risk from student loan use is that of defaulting, which comes with its

own share of negative consequences. Defaulting on student loans can result in garnished wages,

withheld tax refunds, and lowered FICO credit scores (Department of Education 2009). Since

FICO credit scores are used by banks and other lenders to determine credit limits, and loan

qualifications and interest rates on business and home loans, racial differences in defaulting may

contribute to the racial stratification of income and wealth. Although Black and White students

both face risks when using student loans, in comparison to White college students, Black

students are more likely to default (Dynarsky1994; Knapp and Seaks 1992; Volkwein and

Cabrera 1998; Volkwein, Szelest, Cabrera and Napierski-Prancl 1998). Overall then, student

loans are more often used by Black college students, and Blacks have higher balances relative to

monthly income and higher rates of defaults—all suggesting that loans may undercut the potential economic payoffs of completing a college degree, and more so for Black students.

In summary, a complete understanding of the racial stratification of higher education needs to take into account how college student loans both influence persistence/completion and come with financial risks. This is because racial groups vary in the extent to which they rely upon loans to make up for lower socioeconomic status, and racial groups also—or therefore— vary in their experiences of the associated risks. As Black students are more likely to turn to loans, risks such as defaulting and high debt burdens may perpetuate the racial sedimentation of inequality described by Oliver and Shapiro (1997). To our knowledge, few if any past studies have examined the dual-sided nature of college student loans and linked it to racial inequality in education. Our analyses seek to shed light on these interconnections as they play out for one cohort of Black and White college students.

METHODS

The data set for this study comes from the 1995-1996 Beginning Postsecondary Student (BPS) longitudinal study and its three- and six- academic year follow-ups. The BPS is ideal for this study as it contains a wealth of financial data on the students and follows them over time to permit an assessment of their educational progress and loan accumulation. Specifically, the BPS tracks the educational experiences of a national sample of college students who were enrolled in postsecondary education for the first time in 1995-96. The National Center for Education Statistics (NCES) administered the survey. The initial cohort was first surveyed as part of the 1995-1996 National Postsecondary Student Aid Survey (NPSAS:96) and follow-up surveys were administered in the spring of 1998 and 2001. The 1996/2001 BPS sample consists of 10,270 students who participated in the 1996/98 survey and 100 nonrespondents selected from that

survey (the data security agreement with the NCES requires that reported unweighted sample sizes be rounded to the nearest 10). Of the 10,370 sample members, 20 were deceased and were therefore excluded. Out of 10,350 students, 9,560 (92%) were contacted and 9,130 (95%) of those were interviewed, resulting in an unweighted 88.3 percent response rate.

For the purposes of this study, the sample was restricted to 8,740 non-Hispanic White and non-Hispanic Black beginning college students age 16 to 25 who began college at a four-year institution or who planned to complete at least a four-year degree. The sample was further limited to those who responded to the 2001 follow-up which is necessary to determine enrollment history and college completion, reducing the number of White and Black respondents by around 24 percent. Item non-response was dealt with using multiple imputation techniques, as described below. The final analytic sample consists of 6,780 college students. We weight the analyses with a sampling weight for the longitudinal sample (b01lwt2) that adjusts for the sampling design of the BPS and also accounts for respondents who were not successfully followed-up in 2001.

Loan Use, Default, Enrollment Persistence, and Degree Completion

The analyses employ three variables from the BPS that pertain to student loans and two that capture college achievement, all assessed as of the second follow-up interview in 2001.

Student Loan Use. A dichotomous measure compares students who borrowed federal loans (Perkins, PLUS, or Stafford) at any time up to 2001 with students who did not take out such loans. Though some students relied on family loans instead of federal loans, they make up less than three percent of Black and White students—i.e., federal student loans make up the vast majority of college student loans. Weighted sample percents of loan use, and summary statistics for all other study measures, are reported in Appendix A.

The BPS measures of loan use are restricted to federal college student loans as monitored in the National Student Loan Data System and self-reports of family loans. Unfortunately this omits private loans, which account for around 5 percent of college student loans according to a recent estimate (CollegeBoard 2012). Omission of private loans means that the estimates in this paper almost certainly understate the level of debt of first-time college students. (For racial differences in private loan use, see Dillon and Carey 2009).

Cumulative Student Loans. Cumulative student loans is the total amount borrowed through Perkins, PLUS, or Stafford loans as of 2001, disregarding money borrowed from family and friends. In the regression analyses, the measure is transformed by the natural log. Prior to this transformation, those who had no student loans were recoded to have one dollar since the natural log of 0 is undefined.

Enrollment Persistence. The persistence (i.e., duration) of enrollment equals the number of months the respondent was enrolled full-time or part-time at a degree-granting institution between 1996 and 2001.

Received Bachelor's Degree. To ascertain the respondents' educational progress by the second follow-up interview, a dichotomous measure of having received a bachelor's degree was constructed based on the highest degree attained as of 2001, six years after they began college.

Ever Defaulted. A dichotomous variable indicates whether a student ever defaulted on any federal student loans. Federal student loans are payable after a 6-9 month grace period after graduating, leaving school, or dropping below half-time enrollment. Defaulting results when payments have not been made for 9-10 months (Department of Education 2009).

Parents' Socioeconomic Status

Parents' socioeconomic status is measured in terms of income, net worth, and education. Parent's income is equal to their total income in 1995. Parent's net worth in 1995 is the sum of parent's savings and checking and the net values of farm, business, and other investments. In the regression analyses, income and net worth are transformed by the natural log. The measure of parent's education equals years of schooling completed, based on the parent with the highest level of educational attainment.

Control Variables

The multivariate analyses of degree completion control for high school academic performance, freshman year educational plans, and type of college first attended. High school grade point average (GPA) is the student's reported letter-based GPA on the date that the student took either the SAT or ACT, recoded to correspond to a four-point scale. College expectations refer to the highest degree the student ever expected to obtain when asked as a freshman, recoded as the years of schooling expected. Finally, we also control for the tuition and fees expense (also transformed by the natural log) and the type of institution where respondents began their college studies as freshmen, comparing those who started at four-year institutions to those who began at two-year institutions and those attending private for-profit colleges/universities to public and private non-profit.

Missing Data

Missing data was an issue for the family and academic background measures. Parental income was missing for 16 percent of the sample. Parental net worth was missing for 28 percent and parental education was missing for 11 percent. There were 35 percent missing on the measure of high school GPA. Other measures typically had less than 5 percent missing. To reduce the potential bias from item nonresponse, we used the multiple imputation techniques

available in Stata (Royston 2004; StataCorp 2009). The ICE command in Stata created 10 data sets that substituted missing values on predictors with values imputed from regressing each on all observed variables. The multivariate results are averaged coefficients from the 10 data sets.

Analysis

Figure 1 and Table 1 present weighted percentages of Black and White college students across joint outcomes related to indebtedness, degree completion, and default. Table 1 also reports the median indebtedness in each category. These data illuminate the costs and benefits associated with college student loans for Black and White college students. Tables 2 and 3 report results from the analysis of race differences in college achievement, specifically months enrolled and degree completion as of six years after beginning college. The models in Tables 2 and 3 first estimate race differences in college achievement, controlling for gender, high school grades and college expectations. Measures of parental socioeconomic status are then introduced in the second model, while the third model adds measures of loan use, institutional type, and college costs. The fourth model adds an interaction between race and loan use (Table 2) or loan amount (Table 3) to assess whether Black students' college achievements are more dependent upon financial aid than are White students' -- of which we find evidence in both cases. Table 3 includes a fifth model that adds enrollment persistence, in an attempt to show *why* student loans matter more for Black students. Included in the Appendix are results from analyses of loan use, cumulative loan amounts, and defaulting on student loans, which confirm the findings of past research that Black college students rely upon loans more than White college students and are at higher risk of default, and that these racial differences are in part due to racial disparities in family income and in the types of institutions typically attended by Black and White students.

RESULTS

Though we know from past studies that loan use, defaults, and college achievement vary by race, few studies consider these three types of outcomes jointly. Such consideration is important to determine the ultimate costs of seeking a college degree and understand how those costs are socially stratified. Do sufficient numbers of borrowers complete their degrees, and without undue debt burdens and/or negative consequences of defaulting on a college student loan? We first consider this question visually in Figure 1 that reports a series of conditional racial percentages for college and loan outcomes. The figure begins with all Black and White college students in column 1, then reports what percent did or did not take out federal student loans (column 2). Column 3 reports the percent of Black and White students who completed a bachelor's degree by the last BPS follow-up, conditional on having taken a federal loan. Last, column 4 reports the percent of Black and White students who did or did not default, conditional on having completed a bachelor's degree and on having ever taken out a student loan.

[Figure 1 about here]

The contrast begins with Black and White college students in their freshman year, who we split into two groups: those who borrowed a federal student loan within the next six years, and those who did not. The initial breakdown shows that 58 percent of Blacks and 48 percent of Whites had college student loans. Next these two groups are further split into those who completed a bachelor's degree in the same period. Around 10 percent of Black students with no federal loans completed a degree by that time, and almost 31 percent of White students did. The completion rates are much higher among the borrowers, suggesting loans increase the odds of finishing a bachelor's degree. The final breakdown in Figure 1 splits out the percent of borrowers who later defaulted, contingent on degree completion. Very few of those who completed a degree defaulted—just 1.3 percent of White and 6 percent of Black degree holders.

Among borrowers who did not complete a degree, we see a striking racial contrast. Almost one-third of Black college students who took out federal student loans and did not finish a degree also defaulted on a federal student loan. The rate for White students is almost 9 percent.

[Table 1 about here]

Not only do Black students face a much higher joint risk of defaulting with no degree, they also encumber higher debt in every category. Table 1 reports median loan amounts for all six outcome combinations by race, and it also indicates the percent of Black or White college students falling into each combination. The top two rows are for non-borrowers, and thus have no median loan amounts. White students are advantaged in the non-borrower group because they are much more likely than Black students to finish college with no student loans (14.8 vs. 3.8 percent, respectively). The middle two rows are for degree holders with loans who did or did not default on them. Among these college graduates, Blacks hold higher loan amounts, a finding that again confirms their greater reliance on loan use to complete college. The bottom two rows represent those who encumbered debt but haven't completed their degrees as planned, at least as of six years after beginning college, and some of them have defaulted. Perhaps having exited college sooner than the graduates, they have lower median loan amounts, but with much greater risk of defaulting especially for Black students. In short, Black college students' financial experience of seeking a degree involves more debt, and fully 13 percent in this cohort ended their college career with debt, credit damage from defaulting, and no degree. For these college students, the opportunity to pursue a degree came at a high cost.

Enrollment, College Degree Completion, and the Risk of Defaulting

Past research documents that Black college students acquire student loans more often than White students, they encumber larger loan amounts, and are more likely to default on them.

This work further shows that some of Black students' greater reliance on loans is due to the racial gap in parental socioeconomic status, and also to differences in the types of institutions they typically attend. We confirmed these findings in our own regression analyses of loan use, cumulative loan amounts, and defaulting on student loans (see Appendices B, C, and D, respecitvely). We focus our analyses on enrollment persistence and degree completion to assess whether there are benefits of loan use for college achievement, and whether they vary by race.

For one, loans benefit college students by facilitating their persistence, and this appears especially true of Black college students. This is demonstrated in the regression results reported in Table 2. Adjusting for gender, high school GPA, and college expectations, Black students are enrolled in college two fewer months than Whites, on average, as of the sixth year after beginning college (Model 1). According to the predicted values reported at the bottom of the table, Black students are predicted to complete around 34.5 months versus 36.5 for Whites. The race difference in enrollment is reduced to statistical nonsignificance after accounting for the relative advantage of White students in terms of their parents' socioeconomic status (Model 2). Parent education and income are associated with college persistence, but net worth is not -- and White college students are advantaged on all three relative to Black students.

[Table 2 about here]

One of the benefits of borrowing is the tendency to stay in college longer. As shown in Model 3 of Table 2, students with loans are enrolled around three months longer than those with no loans. The significance of starting points is also apparent in this model. Students who begin at four-year institutions remain in school around six months longer than those who begin at two-year institutions. Starting at a private, for-profit college versus a public or private non-profit college is associated with a shorter enrollment span, a year shorter on average in Model 3.

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Finally, Model 4 adds the interaction specifying a race difference in the benefit of having a college student loan. The race difference is both significant and large. As shown through the predicted values reported at the bottom of the table, Black college students with loans have an average of almost seven additional months of enrollment compared to Black students without loans (39.3 - 32.5 = 6.8), while White students have an average gain of less than three months (37.4 - 34.7 = 2.7). Note that, all else equal, Black students with loans have a higher predicted length of enrollment than White students with loans. We argue this is a critical aspect of the implications of student loan access for racial gaps in college completion, which we turn to next.

The logistic regression results in Table 3 assess the racial differences in the odds of getting a bachelor's degree within six years of beginning college. Model 1 indicates the size of the race gap in college completion, adjusting for gender and the strong influences of high school GPA and college expectations. This difference is translated into predicted probabilities at the bottom of Table 3. Black students beginning college (in the mid-1990s) had around a .38 probability of getting a bachelor's degree within six years, while the predicted probability for White students was around .55 -- a sizable .17 difference between Black and Whites. When parent socioeconomic status is equalized between White and Black college students (Model 2), the race difference in the predicted probability of completion is only .07 (.543 - .476 = .067), considerably smaller. The odds of completing college are also shaped by the type of institution, the cost of college, and student loan use (Model 3). Starting at a four-year institution increases the odds, while attending for-profit institutions lowers the odds. Taking out student loans, measured in this model as the cumulative amount of loans, increases the odds of graduating with a bachelor's degree in six years. The racial difference in the predicted probability of graduating does not change much between Models 2 and 3. Perhaps this is due to offsetting factors: Black

college students take out more loans than Whites which increases their relative probability of graduating, but also are less likely to start at four-year institution and more likely to start at a for-profit college (see Appendix A).

[Table 3 and Figure 2 about here]

The last two models in Table 3 show that loans increase the odds of graduating for Black college students more than they do for Whites, and this difference seems to be due to the effect of loans on enrollment persistence. Model 4 adds the interaction term between race and loan use, which is significant and demonstrates a significantly larger benefit of loan use for Black college students (but note that the model fit does not improve substantially as indicated by the small decrease in the AIC, and thus this finding should be interpreted with some caution). The coefficient for White students in this model (0.014) is marginally significant ($p < .05$, using a one-tail t-test). That the racial gap in the predicted probability of graduating is larger here than in Model 3 suggests that the racial gap in college completion would be larger if Black and White college students borrowed equally, on average. Furthermore, as Figure 2 shows, the racial gap in the probability of college completion is narrowed substantially by loan use. Adding months enrolled to the fifth model reduces the estimated effect of loan use to statistical nonsignificance. This pattern of results is consistent with the interpretation that loans reduce the racial gap in bachelor's degree completion because loans especially increase the enrollment persistence of Black college students, which in turn facilitates degree completion.

DISCUSSION AND CONCLUSION

In this study we have explored the implications of college student loan debt for one important aspect of educational inequality in the U.S., namely differences in enrollment persistence and rates of college completion among Black and White college students. Our

principal aims were to clarify the magnitude of racial differences in student loan use, since past studies report mixed results, and to concurrently examine both the potential payoffs and countervailing risks inherent in reliance on loans. To the extent that college student loans facilitate the pursuit of a college degree, they have the potential to reduce educational inequality that otherwise results from disadvantaged students' struggles to pay for college. On the other hand, loans may instead contribute to inequality if they benefit disadvantaged students' college persistence less or if disadvantaged students experience the majority of the risks/downsides and few of the educational benefits.

Before turning to the main findings, it is important to note the evidence of the long reach of family socioeconomic status for this cohort of college students, evidence of intergenerational inequality that disadvantages Black college students relative to White students (Oliver and Shapiro 1997). Black students' greater use of loans and greater risk of defaulting on them is partly due to the fact that they come from families with fewer financial resources, on average, than do White students. This pattern is confirmed through auxiliary analyses of loan use and, among borrowers, risk of defaulting (Appendices B, C, and D). The analyses show significantly smaller Black-White differences in the odds of taking loans, in the cumulative amount of loans, and in the odds of defaulting on loans, once racial differences in parental education, income, and wealth are taken into account (Model 2 vs. 1). College students who have fewer parental resources to apply toward college expenses rely more on college student loans, much as Lyndon Johnson envisioned with the Higher Education Act of 1965. But at the same time, they are more prone to default on those loans and may incur larger loan balances, and thus the question remains whether the benefit to persistence is worth the risk. Also significant are the types of institutions that typical White and Black college students attend. Mirroring the reality of racial segregation

at the pre-college levels (Logan, Minca, & Adar 2012), Black college students more often attend institutions that put them at a significant disadvantage for finishing, and--in the case of attending for-profit institutions--raises their risk of defaulting (Appendix D, Model 3).

Thus the key question is whether loans provide a substantively important benefit to offset the disadvantages that are associated with family background and institutional segregation. One sign that the risk is worth it is the fact that students who use college student loans stay in school longer and have a better chance of completing a bachelor's degree in a timely manner. Loan use benefits completion of a bachelor's degree, adjusting for parental socioeconomic status, past grades, freshman year educational plans, and the type of college attended. More direct evidence that loans reduce racial inequality in higher education is the finding that they benefit Black college students more than White students in terms of enrollment persistence and, ultimately, degree completion. Note that this is inconsistent with Kim's (2007) analyses of the BPS that suggest loan amounts are negatively related to college completion for Black but not White college students (at least for *some types* of Black and White students [Kim 2007: 86]), and was marginally significantly in Table 5. Thus, while the following discussion focuses on evidence in this paper of a greater benefit of loans to Black college students, more work is needed to confirm or disconfirm whether there are racial differences in the benefits of loans to persistence.

Given that the economic benefits of earning a college degree are tremendous, loans are clearly worth it for those who finish their degree. Households in which the head has a college degree hold about twice as much net worth in comparison to households in which the head only has some college experience (Oliver and Shapiro 1997), and the estimated lifetime earnings of college graduates far exceed the earnings of those with less than a college degree (Day and Newburger 2002: Table 2). These benefits have persisted if not grown in the past decade. In

2008 the median earnings of students with a bachelor's degree and were working full time were

$55,700—over $15,000 more than those with some college experience, who earn a median of

$39,700 (College Board 2010). When considering projected lifetime earnings, college degree

recipients in 2009 can expect to earn $2.3 million dollars versus $1.5 million for those with only

some college experience (Carnevale, Rose, and Cheah 2011). Even though Black adults do not

reap equivalent income or wealth from a college education as compared to Whites, the economic

benefits of a college degree over less education are still substantial (Day and Newburger 2002).

Brand and Xie (2010) also recently advanced a "negative selection hypothesis" that argues

disadvantaged groups have the most to gain from getting a degree because they have less human,

cultural, and social capital to compensate for a lack of college credentials. Therefore, although

Black and White young adults with college degrees will accumulate different levels of income

and wealth, the lifetime payoffs relative to not getting a degree justify taking on the risks of debt

since students with loans are more likely to complete a bachelor's degree.

Since Black students rely more on loans than White students, and loans benefit Black

students' college achievements more than White students' (in this paper), we conclude that the

Black-White gap in college completion would be greater if college loans were not available.

This study thus extends the literature on racial inequality in higher education by showing that

despite risks such as high loan balances and defaults, loans promote college completion and

contribute to a more educated population of Black young adults than there would be otherwise.

But student loans are clearly an imperfect and somewhat contradictory vehicle for reducing

racial inequality (Baker and Velez 1996; Heller 2008). Despite their greater reliance on loans

and the salutary effects of loans on completion, Black students are still less likely than Whites to

complete their degrees within six years and are much more likely to end up with a loan default and no degree. That is, Black students suffer a much larger relative share of the downsides.

The downsides associated with loan usage in college have implications for broader patterns of mobility and socioeconomic attainment among Black adults. For one, our results show that over 70 percent of Black students who borrow do not receive a college degree. Given that borrowers who do not complete their degree are more likely to be unemployed and default on their loans in comparison to borrowers who complete their degree, these Black students face long term economic disadvantages (Gladieux and Perna 2005). Further, as young adults, these students may face other financial difficulties, such as obtaining mortgages or small business loans. For Black students who use loans and do receive their degree, beginning life after college in debt can still be financially challenging. Considering Black students' greater reliance on loans and risk of defaulting, attention must be paid to the consequences student loan debt has for wealth accumulation, the passing of economic advantages across generations, and other ways beginning adulthood in debt may affect future life chances (Shapiro 2004: 6).

How might recent legislation related to the student loan market alter the risks associated with college student loans? The Higher Education Opportunity Act (HEOA) of 2008 contains provisions that are intended to give students and their families better information when deciding how to finance college. These provisions include cost calculators and state-level data on trends in tuition and fees available via the Department of Education's "College Affordability and Transparency Center" website (http://collegecost.ed.gov). Additionally, schools that enter into preferred lender agreements must make background information on lenders available to students and their families, and schools must provide debt counseling to students before they sign their first promissory note. Whether these provisions result in more effective borrowing or lower

default rates remains to be seen, especially since they do nothing to control college costs or alter the fact that those most likely to default are those who would benefit most from the degree.

The provisions of the College Cost Reduction and Access Act (CCRA), signed in 2007, provide more substantive changes for student borrowers. This act increased the annual maximum Pell Grant limits, created a forgiveness provision that discharges outstanding federal student loan debt after 10 years of full-time employment in the public sector, and instituted an income-based repayment plan that caps monthly payments at a percentage of the borrower's income. There are many potential benefits of CCRA—more Pell grants may work to reduce lower-income students' reliance on student loans, and the scaled repayment plan works to alleviate some of financial strain of paying back loans on a limited income. The forgiveness plan may also benefit Black graduates in particular, since Black workers are over-represented in the federal and state government sectors versus the private sector as compared to White workers. The very beginnings of the consequences of these legislative changes may be examined in the more recent 2004 to 2009 Beginning Postsecondary Student study.

To better understand the potential risks of student debt and its racial character, future research should follow up with college graduates after a longer period after college. Although the BPS data show that obtaining a college degree is protective against defaulting on student loans six years after beginning college, they do not capture any problems young adults may have paying back loans later in life. Typical student loan repayment plans span 10 years, and some plans can be extended up to 25 years. A longer time frame also would capture loans acquired in pursuit of graduate and professional degrees, which is largely ignored in past studies. Finally, a longer time span might also capture college completion for those who take longer than six years

to complete their degree; these late completers are not picked up by the BPS or any other recent national study of the college student population.

Future research should also examine how job placement affects students' ability to pay loans back or avoid default. Black students are likely disadvantaged in this regard due to the racial segregation of the labor force. More generally, our understanding of the relationship between loan use and racial stratification would benefit from analyses of the jobs obtained by college students who do and do not complete their degrees (analyses that can be done using the BPS). Another possible topic for the future is whether student debt is a hindrance to young adults' ability to accumulate wealth, one that may contribute to the Black-White wealth gap. Generally speaking, given the growing pressure to attend college combined with rapidly increasing college prices and an upsurge in the use of loans (College Board 2008, 2011), future research should continue to look at how student debt plays a role in racial stratification.

In this paper we focused on the racial gaps in student loan use, college persistence, and degree completion between Black and White college students. Future research should extend this work by examining how use of loans affects college persistence and completion among Hispanic students, who are also disadvantaged relative to Whites in post-secondary education. Until recently, a lower percent of Hispanic college students took out student loans than White or Black students, suggesting they are more averse to debt or have less access to student loans (Cunningham 2008). Based on the finding that loans boost persistence and completion, reluctance or inability to fund higher education with loans may contribute to Hispanic students' lower rate of college completion. Yet, the salutary effects of loans may not extend to Hispanic students (Kim 2007), and their rates of borrowing may have caught up with White students' rates

in the 2000s (Demos and Young Invincibles 2011: 29). Thus, the literature would benefit from

further research and clarification surrounding this topic.

Finally, future research would benefit from greater attention to the selectivity of colleges

attended by Black and White students. For example, Black college students are more likely to

begin their college careers at community colleges compared to Whites, and much more likely to

start out at a for-profit institution. Black students also attend universities with lower graduation

rates. In the BPS, the average graduation rate for the institutions attended by Black students was

43 percent, versus 52 percent for those attended by White students. It is possible that the risks

and benefits of loan use vary according to the selectivity of the institution attended (Attewell,

Heil, & Reisel 2011), and likely that the racial differences in loan amounts, defaults, and degree

attainment are partly attributable to the types of institutions that Black and White students attend.

Overall this study suggests that college student loans appear to represent somewhat of a

Catch-22, especially for Black students. Loans help make up for the racial gaps in parental

socioeconomic status and increase Black young adults' access to college, bringing more within

reach of a college degree and its potential benefits for their future. In this sense, loans are "worth

it." At the same time, Black college students leave college with more to pay off and they have

considerably higher risks of defaulting. Both of these can widen the racial gap in socioeconomic

status, all things equal. Since Black college students rely more on loans and have a higher risk of

default than White college students, in part due to the socioeconomic gap in their parents'

generation, they often end up paying a higher price of opportunity in pursuit of a college degree.

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Figure 1. Loan use, degree attainment, and default by race; n=6,780; weighted percents.

[1]   [2]   [3]   [4]

Received BA
30.9% of Whites
10.2% of Blacks

No Federal Loans
51.9% of Whites
42.3% of Blacks

Didn't receive BA
69.1% of Whites
89.8% of Blacks

Beginning College
Students
5,920 White
860 Black

BA, no default
98.7% of Whites
94.0% of Blacks

Received BA
45.9% of Whites
28.3% of Blacks

BA, defaulted
1.3% of Whites
6.0% of Blacks

Federal Loan Use
48.1% of Whites
57.7% of Blacks

No BA, no default
91.3% of Whites
69.3% of Blacks

Didn't receive BA
54.1% of Whites
71.7% of Blacks

No BA, defaulted
8.7% of Whites
30.7% of Blacks

Figure 2. Predicted probability of degree completion by natural log of loan amounts and race.

Completion by Amount of Loans and Race/Ethnicity

Pred. probability of getting degree

Cumulative amt of loans, ln($)

White — Black

Beginning Postsecondary Student Longitudinal Study, 1996-2001
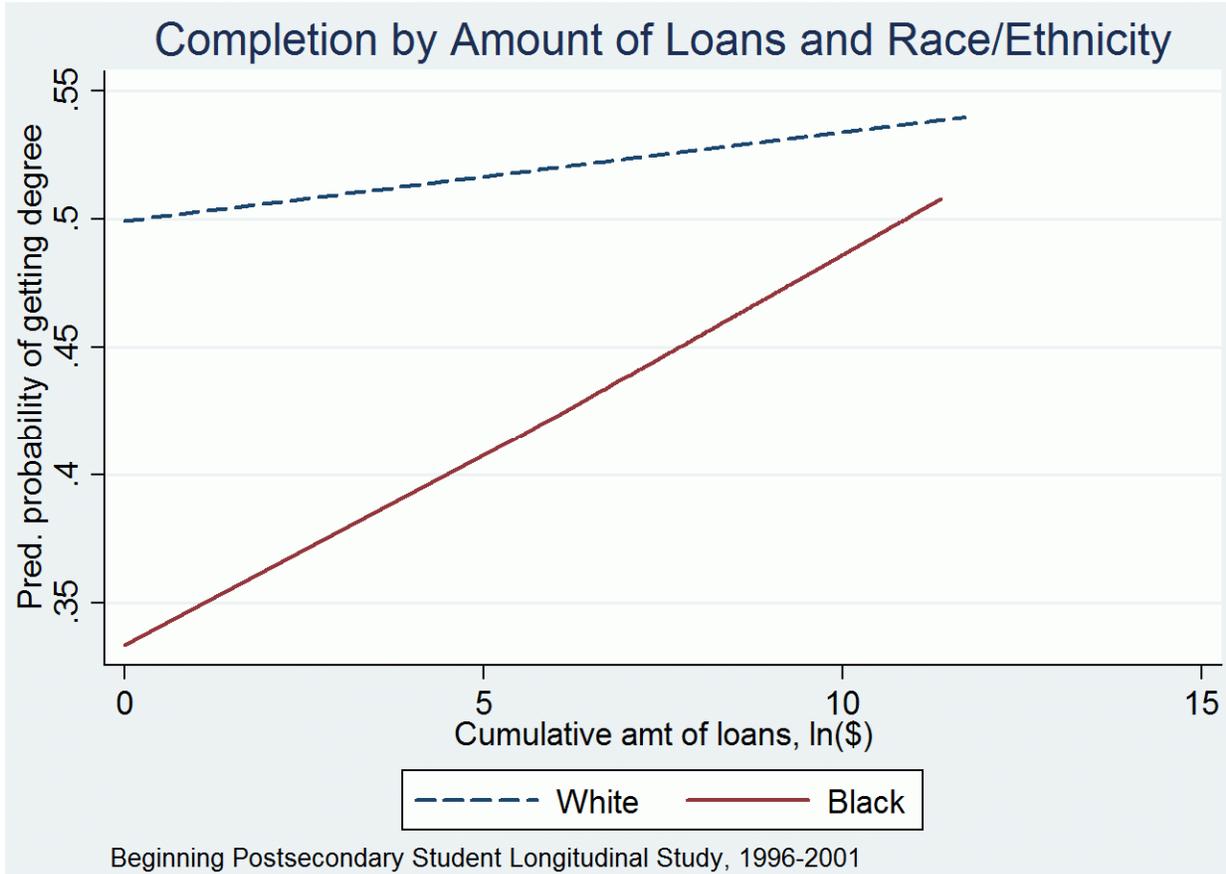
Table 1. Cumulative loan amounts by loan use, degree attainment, default status, and race; median loan amounts and weighted percent of race group in parentheses (n=6,780).

	Cumulative federal student loans as of 2001:	
	Black students	White students
No federal student loans, completed degree	$0 (3.8%)	$0 (14.8%)
No federal student loans, no bachelor's	$0 (37.9%)	$0 (35.6%)
Federal loan, completed degree, no default	$20,152 (15.6%)	$16,725 (22.7%)
Federal loan, completed degree, default	$27,176 (1.0%)	$19,550 (0.3%)
Federal loan, no bachelor's, no default	$8,500 (28.6%)	$6,692 (24.3%)
Federal loan, no bachelor's, default	$3,437 (13.2%)	$3,350 (2.4%)

Note: The distribution of college students across categories varies significantly by race, $p < .01$.

Table 2. Linear regression analysis of months enrolled as full- or part-time college student; metric coefficients with t-statistics in parentheses (n=6,780).

	(1)	(2)	(3)	(4)
Black	-2.022***	0.192	0.760	-2.162*
	(-3.32)	(0.31)	(1.39)	(-2.13)
Female	-0.803*	-0.284	0.185	0.163
	(-2.34)	(-0.83)	(0.58)	(0.51)
High school GPA, 4-pt scale	5.966***	4.967***	2.915***	2.913***
	(15.71)	(12.67)	(8.01)	(8.09)
College expectations, years	0.543***	0.442***	0.270***	0.268***
	(11.17)	(8.94)	(6.18)	(6.16)
Parent(s) education, years		0.586***	0.402***	0.397***
		(7.66)	(5.54)	(5.49)
Parent(s) net worth, ln($)		-0.0305	0.0502	0.0546
		(-0.34)	(0.62)	(0.68)
Parent(s) income, ln($)		1.063***	0.964***	0.953***
		(3.76)	(4.01)	(3.99)
Received any federal student loan			3.119***	2.698***
			(9.11)	(7.64)
Started at 4-year institution			6.689***	6.577***
			(10.61)	(10.39)
Started at for-profit institution			-12.74***	-12.84***
			(-16.95)	(-17.06)
Tuition and fees, ln($)			0.365*	0.360*
			(2.14)	(2.11)
Black x federal student loan				4.059***
				(3.51)
Intercept	8.67	-6.12	-3.66	-3.06
R^2	0.095	0.131	0.247	0.249
AIC	54846.6	54571.6	53589.1	53575.4
Pred. months, Black student	34.56	36.53	37.13	
Pred. months, White student	36.58	36.34	36.38	
Pred. months, Black student, no loan				32.52
Pred. months, Black student, loan				39.28
Pred. months, White student, no loan				34.68
Pred. months, White student, loan				37.38

* $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table 3. Logistic regression analysis of bachelor's degree completion; logit coefficients with t-statistics in parentheses (n=6,780).

	(1)	(2)	(3)	(4)	(5)
Black	-0.715***	-0.342***	-0.321**	-0.689***	-0.624**
	(-8.16)	(-3.57)	(-3.15)	(-3.30)	(-2.79)
Female	0.114*	0.219***	0.277***	0.273***	0.288***
	(2.09)	(3.82)	(4.50)	(4.44)	(4.47)
High school GPA, 4-pt scale	1.506***	1.373***	1.090***	1.090***	1.032***
	(24.78)	(21.62)	(16.17)	(16.20)	(14.39)
College expectations, years	0.056***	0.040***	0.022**	0.022**	0.009
	(7.75)	(5.23)	(2.78)	(2.78)	(1.05)
Parent(s) education, years		0.136***	0.104***	0.104***	0.082***
		(11.13)	(7.66)	(7.63)	(5.99)
Parent(s) net worth, ln($)		0.058***	0.045**	0.045**	0.039*
		(4.05)	(2.89)	(2.90)	(2.34)
Parent(s) income, ln($)		0.212***	0.138**	0.138**	0.085
		(4.65)	(3.03)	(3.03)	(1.78)
Cumulative amt of loans, ln($)			0.0178*	0.014	-0.007
			(2.55)	(1.91)	(-0.97)
Started at 4-year institution			1.185***	1.179***	1.005***
			(10.19)	(10.11)	(8.13)
Started at for-profit institution			-2.266***	-2.257***	-1.383***
			(-8.50)	(-8.43)	(-5.30)
Tuition and fees, ln($)			0.519***	0.519***	0.579***
			(13.87)	(13.88)	(14.08)
Black x amount of loans				0.050*	0.020
				(1.99)	(0.77)
Months enrolled full-/part-time					0.069***
					(22.82)
Intercept	-5.70	-9.77	-12.58	-12.55	-14.12
Efron's R^2	0.173	0.218	0.324	0.325	0.420
AIC	8158.1	7787.2	6815.9	6813.7	6100.9
Pred. p(y=1), Black student[a]	0.375	0.476	0.440	0.420	0.375
Pred. p(y=1), White student[a]	0.550	0.543	0.518	0.518	0.500

* p<0.05, ** p<0.01, *** p<0.001
a – Predicted probabilities in models 4 and 5 apply only to students with average levels of student loans.

Appendix A. Weighted percentages and averages for study measures (n=6,780).

	Black students	White students	Race Diff.
Percent of sample (weighted)	14.7%	85.3%	
Loan use, enrollment, and college achievement			
Ever received student loan	58.0%	48.0%	***
Cumulative federal student loans	$7,013	$6,656	n.s.
Sample median	*$5,500*	*$4,200*	
Ever defaulted on federal student loan	14.2%	2.7%	***
Months enrolled part- or full-time up to 2001	28.3	33.4	***
Bachelor's degree received as of 2001	20.3%	37.8%	***
Parent(s) socioeconomic status			
Parent(s) education (years)	13.6	14.7	***
Parent(s) net worth	$5,791	$18,241	***
Sample median	*$0*	*$2,000*	
Parent(s) income	$35,941	$59,774	***
Sample median	*$29,962*	*$55,172*	
Academic background, initial PSE institution			
High school GPA (4-point scale)	2.92	3.22	***
Freshman-year college expectations (years)	16.64	16.57	n.s.
Began at four-year institution	41.5%	48.5%	*
Began at for-profit institution	15.7%	6.3%	***
Tuition and fees at initial institution	$3,092	$4,235	***

Note: Race difference significant at * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Appendix B. Logistic regression analysis of having received any federal student loan; logit coefficients with t-statistics in parentheses (n=6,780).

	(1)	(2)	(3)
Black	0.556***	0.372***	0.362***
	(6.71)	(4.14)	(3.88)
Female	0.00360	-0.0487	-0.0734
	(0.07)	(-0.93)	(-1.33)
High school GPA, 4-pt scale	0.0369	0.153**	-0.101
	(0.68)	(2.65)	(-1.62)
College expectations, years	0.0290***	0.0417***	0.0407***
	(4.46)	(6.04)	(5.54)
Parent(s) education, years		-0.0848***	-0.121***
		(-7.28)	(-9.19)
Parent(s) net worth, ln($)		-0.0235	-0.0608***
		(-1.58)	(-3.87)
Parent(s) income, ln($)		-0.401***	-0.521***
		(-8.36)	(-10.46)
Started at 4-year institution			0.759***
			(8.00)
Started at for-profit institution			1.037***
			(7.00)
Tuition and fees, ln($)			0.467***
			(12.91)
Intercept	-0.164	5.153	3.634
Efron's R^2	0.011	0.053	0.138
AIC	8943.0	8686.7	8067.9
Predicted p(y=1), Black student	0.728	0.700	0.708
Predicted p(y=1), White student	0.606	0.617	0.628

* p<0.05, ** p<0.01, *** p<0.001

Appendix C. Linear regression analysis of natural log of cumulative amount of student loans; metric coefficients with t-statistics in parentheses (n=6,780).

	(1)	(2)	(3)	(4)
Black	1.071***	0.698***	0.653***	0.606***
	(6.73)	(4.03)	(4.04)	(3.82)
Female	-0.00788	-0.113	-0.124	-0.131
	(-0.07)	(-1.00)	(-1.16)	(-1.24)
High school GPA, 4-pt scale	0.224	0.453***	-0.133	-0.273*
	(1.95)	(3.82)	(-1.17)	(-2.45)
College expectations, years	0.0670***	0.0898***	0.0714***	0.0569***
	(4.58)	(6.01)	(4.99)	(3.98)
Parent(s) education, years		-0.188***	-0.252***	-0.268***
		(-7.61)	(-10.22)	(-11.13)
Parent(s) net worth, ln($)		-0.0972**	-0.161***	-0.162***
		(-2.93)	(-4.97)	(-5.07)
Parent(s) income, ln($)		-0.742***	-0.885***	-0.917***
		(-8.81)	(-11.76)	(-12.48)
Started at 4-year institution			1.639***	1.286***
			(9.05)	(7.13)
Started at for-profit institution			1.236***	1.829***
			(5.18)	(7.64)
Tuition and fees, ln($)			0.948***	0.915***
			(15.22)	(14.83)
Months enrolled full-/part-time				0.0491***
				(12.33)
Intercept	3.75	14.48	10.44	10.44
R^2	0.010	0.048	0.136	0.154
AIC	39870.6	39618.0	38962.6	38820.3
Predicted loan amt, Black student ($)	765.86	554.46	542.40	521.65
Predicted loan amt, White student ($)	262.70	275.89	282.03	284.58

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix D. Logistic regression analysis of ever defaulting on student loan; logit coefficients with t-statistics in parentheses (n=4,200 loan recipients).

	(1)	(2)	(3)
Black	1.526***	1.225***	1.195***
	(11.74)	(8.60)	(8.36)
Female	0.200	0.114	0.0533
	(1.57)	(0.88)	(0.41)
High school GPA, 4-pt scale	-0.656***	-0.553***	-0.460***
	(-6.35)	(-5.18)	(-4.06)
College expectations, years	-0.00434	0.00645	0.0246
	(-0.29)	(0.40)	(1.32)
Parent(s) education, years		-0.0684*	-0.0499
		(-2.48)	(-1.76)
Parent(s) net worth, ln($)		-0.0192	-0.0386
		(-0.42)	(-0.87)
Parent(s) income, ln($)		-0.245**	-0.238**
		(-2.63)	(-2.62)
Started at 4-year institution			-0.170
			(-0.76)
Started at for-profit institution			0.905***
			(3.57)
Tuition and fees, ln($)			-0.00503
			(-0.06)
Cumulative amt of loans, ln($)			0.0331
			(1.66)
Intercept	-0.870	2.280	1.324
Efron's R^2	0.062	0.078	0.091
AIC	2058.2	2014.2	1986.5
Predicted p(y=1), Black student	0.190	0.144	0.135
Predicted p(y=1), White student	0.049	0.047	0.045

* $p<0.05$, ** $p<0.01$, *** $p<0.001$