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ABSTRACT

More than low default rates, lenders are interested in the expected return on their loans. In this paper, we consider a number of other measures of repayment and nonpayment that are likely to be of direct interest to lenders. Using data from the Baccalaureate and Beyond Longitudinal Study, we document repayment and nonpayment outcomes 10 years after graduation for American students receiving BA/BS degrees in 1993. We estimate differences in these outcomes across individual/family background characteristics, college major, type of institution, the amount borrowed, and post-graduation income. A key contribution is our analysis of the following outcomes in addition to student loan default rates: the fraction of the original undergraduate loan amount repaid as of 2003, nonpayment rates (including deferment and forbearance as well as default), and the fraction of original undergraduate loan amounts on which borrowers defaulted or are currently not repaying.

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1 Introduction

Increasing numbers of American students are borrowing thousands of dollars from public and private lenders to finance their higher education, and growing numbers of them have been defaulting on their obligations. Over the past decade, the total number of Stafford Loan borrowers has nearly doubled to 10.4 million recipients in 2011-12. In recent years, undergraduates have borrowed more than $70 billion annually in federal student loans. More ominously, student loan default rates have risen continuously since 2005 after falling for more than a decade. Three-year cohort default rates stand at 13.4% for students entering repayment in 2009. Among students from private for-profit institutions, three-year default rates exceed 20%.[1] Against this backdrop, there is growing concern that many students are borrowing too much, especially in the wake of the Great Recession. These developments have led to renewed interest in the design of federal student loan programs, including a re-evaluation of student borrowing limits, interest rates, and income-contingent repayment schemes. Unfortunately, much of this discussion is occurring amidst scant systematic evidence on the determinants of student loan repayment and default, especially for recent cohorts.

Dynarski (1994), Flint (1997), and Volkwein et al. (1998) study the determinants of student loan default using nationally representative data from the 1987 National Postsecondary Student Aid Study that surveyed borrowers leaving school in the late 1970s and 1980s. Other empirical studies have generally examined default behavior at specific institutions or in individual states in the United States.[2] Gross et al. (2009) provide a recent review of this literature and conclude that factors such as race, socioeconomic background, educational attainment, type of postsecondary institution, student debt levels, and post-school earnings are important determinants of default. Minorities, students from low-income families, and college dropouts all tend to have higher default rates, as do students attending two-year and for-profit private institutions. Default is also more

[1] See College Board (2012) for these and related statistics.

[2] See Schwartz and Finnie (2002) and Lochner et al. (2013) for empirical analyses of student loan repayment, delinquency, and default in Canada.

likely for those with high debt levels and low post-school earnings.

We go beyond previous analyses of default to consider other important measures of student loan repayment and nonpayment that are likely to be of greater interest to potential lenders (public or private). Most lenders are concerned about the expected return on their investments, although government lenders may have other objectives. While default is a key factor affecting the expected returns on student loans, other factors can also be important. For example, government student loans offer opportunities for loan deferment or forbearance, which temporarily suspend payments.[3] The timing of default and deferment/forbearance can also influence returns to lenders. From the lender's point of view, it matters if a borrower defaults (without re-entering repayment) immediately after leaving school or after five years of standard payments. The discounted value of payments from the former is much lower than from the latter. Similarly, the discounted present value of payments is much lower for borrowers who defer payments for extended periods of time than for those who do not. These simple examples suggest that the creditworthiness of different types of borrowers (based on their background or their schooling choices) depends on the expected payment streams and not simply whether they had ever entered default or are currently in default at some arbitrary survey date.

Unfortunately, an analysis of expected returns across different types of borrowers is impossible given current data sources since it requires data on potential determinants of repayment and access to full repayment histories. As far as we know, these data are not available. In this paper, we use data from the Baccalaureate and Beyond Longitudinal Studies (B&B) to analyze a number of different repayment and nonpayment measures that provide useful information about expected returns on student loans. As discussed further in Section 2, the B&B follows a random sample of 1992-93 American college graduates for 10 years and contains rich information about the individual and family background of respondents, choice of college major and institution, student borrowing

[3]Expected returns on income-contingent lending programs, such as the new Pay As You Earn student loan repayment program in the United States, can lead to full or partial loan forgiveness for borrowers experiencing low income levels for extended periods. This clearly lowers the expected returns on the loans. Furthermore, the timing of payments can affect expected returns if lenders have different discount rates from the nominal interest rates charged on the loans.

levels, post-school earnings, and loan repayment status (including outstanding balances) 5 and 10 years after graduation. We use the student loan records to compute five different measures related to repayment and nonpayment of student loans 10 years after graduation: the fraction of initial student debt still outstanding, an indicator for default status, an indicator for nonpayment status (includes default, deferment and forbearance), the fraction of initial debt that is in default, and the fraction of initial debt that is in nonpayment. We then study the determinants of all of these repayment/nonpayment measures in Section 3, focusing on the roles of individual and family background factors, college major, postsecondary institution characteristics, student debt levels, and post-school earnings. We find that many of the factors identified in earlier studies are important for our more recent sample of borrowers; however, the importance of some factors depends on the measure of repayment or nonpayment under consideration.

We highlight a number of general lessons and open questions arising from our results and conclude in Section 4.

2 Data: The Baccalaureate and Beyond Longitudinal Study

We use the B&B to analyze patterns in student loan repayment and default for college graduates up to 10 years after graduating. The B&B was initially drawn as a subsample from the 1993 National Postsecondary Student Aid Study (NPSAS), a nationally representative random sample of all postsecondary students in the United States.[4] More specifically, the B&B has followed the roughly 16,000 respondents who received baccalaureate degrees in the 1992-93 academic year through 2003. The B&B uses data from three basic sources: survey data in 1993, 1994, 1997, and 2003; institutional records on college costs and financial aid; and snapshots from student loan administrative records in 1998 and 2003. With extensive information about family background and demographic characteristics, student achievement as measured by SAT/ACT scores, college-related outcomes (e.g., undergraduate major, institution attended, graduate school attendance,

[4]All averages in the following tables use the B&B panel weights to account for the sampling scheme of the original NPSAS survey and attrition in subsequent surveys.

and postgraduate degrees), labor market outcomes every few years, and student loan balances and repayment status 5 and 10 years after graduation, the B&B offers a unique opportunity for studying student loan repayment and default behavior in the United States.

The B&B sample is relatively homogeneous in its educational attainment: All students have at least a BA/BS degree. The lack of college dropouts and students with less than four-year degrees is unfortunate, since previous research shows that repayment problems are most common among these individuals.[5] Still, we find that many students who graduated from college in 1992-93 have experienced repayment problems.

To focus on a typical American college student, we exclude noncitizens, the disabled, and individuals receiving their BA/BS at age 30 or later (less than 14% received their BA/BS at later ages). Because new graduates who then attend graduate school are eligible for automatic loan deferments when they are enrolled, they will have spent less time in repayment. This directly reduces their opportunities for both repayment and default within any given time frame, making it difficult to compare their repayment/default outcomes with those of students who have not participated in postgraduate studies. Our main analysis, therefore, excludes respondents who attended 12 or more months of graduate school as of 1997, received any postgraduate degrees by 2003, or were enrolled in school in 2003.[6] Altogether, this leaves 4,300 American citizens who received baccalaureate degrees in 1992-93 but participated in little schooling thereafter. Roughly half of these graduates report that they borrowed money for their undergraduate schooling as of 2003. Our analysis of repayment and default focuses on these 2,180 borrowers.

The B&B contains standard demographic characteristics such as gender and race/ethnicity (Asian, black, Hispanic, white). We also use measures of maternal education, categorizing students based on whether their mothers never attended college, attended but did not receive a BA/BS,

[5] See Gross et al. (2009) for a recent survey of the literature on student loan default.

[6] To understand the implications of these restrictions, we performed an analogous analysis without imposing the restrictions on months of postgraduate study and degrees. In regressions using this broader sample (analogous to those used in Tables 5 through 10), we also included indicator variables for the following graduate degrees: Master's level, professional degree, and doctoral degree. These results are qualitatively similar to those reported in the text, with a few exceptions specifically noted below.

or completed their BA/BS. Dependency status (for financial aid purposes) is also available for students, along with parental income in 1991 for those who are dependents. The B&B also contains data on student SAT and ACT scores. We categorize individuals into quartiles based on their SAT score if it is available. If an individual did not report an SAT score, we use the corresponding ACT quartile.[7] The data also include information about the major course of undergraduate study and the type of institution from which individuals graduated (public, private nonprofit, private for-profit, historically black college/university). We use the undergradaute institution from which individuals graduate to include a measure of the selectivity of the institution as determined by Barron's 1992 Admissions Competitiveness Index. We consider the following three competitiveness categories: most competitive and highly competitive, very competitive and competitive, and all others. Sample averages for all of these variables are reported for our sample of borrowers and non-borrowers, as well as borrowers only, in Table A1.

Our main focus is on student borrowing, repayment, and default measured 10 years after graduation. As noted earlier, roughly half of our sample borrowed funds for their undergraduate studies. Among those who borrowed, the average amount of undergraduate loans was $9,300. On average, another $600 was borrowed for graduate studies. The latter amount is small, since our sample restrictions ensure that students in our sample spent very little (or no) time in graduate school. Ten years after graduation, borrowers still owed, on average, $2,600 on their undergraduate loans. Two-thirds had repaid their undergraduate loans in full.

Table 1 reports repayment status for borrowers as of 1998 and 2003. In both years, 92% were repaying their loans or had already fully repaid their loans. The fraction of borrowers receiving a deferment or forbearance declined from 3.8% in 1998 to 2.5% in 2003, while the share of borrowers in default rose from 4.2% to 5.8% over this period.[8] These figures suggest that deferment and

[7]These quartiles are based on the test score distributions for the full population rather than our restricted sample.

[8]Our repayment measures are based on individual loan records from the National Student Loan Data System, accessed in both 1998 and 2003. Loan status (for both dates) is determined from the most recent available status date at the time records were accessed. Our measures of default include borrowers who had defaulted or had expunged their student debt through bankruptcy. Since borrowers may have more than one loan in the system, we cycle through all government student loans in a borrower's records and set the default indicator to 1 if any of the

forbearance are important forms of nonpayment with a diminishing role over time: They make up nearly half of all nonpayments five years after school, falling to slightly less than one-third five years later.

Table 2 shows transition rates for these repayment states from 1998 to 2003. The rows in the table list the probabilities of being in repayment (including those who fully repaid), receiving a deferment or forbearance, or being in default 10 years after school (in 2003) conditional on each of those repayment states five years earlier in 1998. Ninety-four percent of borrowers in repayment (including those who had fully repaid) in 1998 were also making their payments or had fully repaid their loans by 2003. Four percent of borrowers who were in repayment (or fully repaid) in 1998 were in default five years later. Only 75% of borrowers in deferment/forbearance in 1998 were in repayment (or fully repaid) five years later, while 16.5% were still in deferment/forbearance and 8.5% were in default. Among those in default in 1998, 54% had returned to repayment (or fully repaid) five years later, while 42% remained in default. Although there is considerable persistence in these repayment states, many borrowers who were not making payments five years after school (i.e., in deferment/forbearance or default) were making payments (or had fully repaid their loans) five years later. Not surprisingly, deferment/forbearance is the least persistent state, since it is designed to temporarily help borrowers in need. Indeed, borrowers cannot typically receive a deferment or forbearance indefinitely. In the end, most borrowers who receive this form of assistance return to repayment; however, one in six end up defaulting.

Finally, the B&B asked respondents about their earnings in the 1997 and 2003 surveys; we also use these data. The 1997 survey asked respondents about their annual salary for the job they were working during April of that year, while the 2003 survey asked respondents about their total income from work earned in 2002. Based on these questions, respondents in our sample (borrowers and nonborrowers alike) reported average earnings of roughly $30,000 in 1997 and $50,000 in 2002.

loans are determined to be in default (or expunged through bankruptcy). Similarly, if any loans are in deferment or forbearance, we set the indicator for deferment/forbearance equal to 1.

3 Determinants of Student Borrowing and Repayment

In this section, we study the determinants of undergraduate borrowing and repayment behavior measured in 2003, roughly 10 years after graduation. Since the standard repayment plan for Stafford loans is based on a 10-year repayment period, students who were always in good standing and making the standard payment should have paid down most, if not all, of their loans. As we show, many did not. In addition to studying the fraction of debt students repaid within the first 10 years after school, we also examine the traditional metric used to study student loan repayment behavior: default.[9] We then extend this metric to include borrowers in deferment or forbearance, and report on the fraction of undergraduate debts remaining for borrowers that have defaulted or are in nonpayment more generally.

We begin with an analysis of average post-school earnings, undergraduate borrowing and repayment/nonpayment rates by student characteristics. We then explore differences in these outcomes based on the type of institutions from which students graduated. Finally, we use standard multivariate regression methods to examine the importance of individual/family and institutional factors, along with college major, student borrowing, and post-school earnings levels in determining student loan repayment, default, and other measures of nonpayment. This enables us to identify which factors are most important while simultaneously controlling for other potentially important factors.

3.1 Differences by Borrower Characteristics

Table 3 characterizes the post-school labor market outcomes, undergraduate borrowing, and repayment outcomes across different types of students defined by gender, race/ethnicity, SAT/ACT quartiles, and maternal education. Because we are primarily interested in repayment/nonpayment, this table focuses on our sample of borrowers only. Before discussing repayment, we briefly comment on differences in earnings and undergraduate borrowing across groups as reported in columns

[9]Default is defined as 270 days (9 months) of missed payments (excluding borrowers in formal programs designed to reduce payment such as deferment or forbearance).

(2) and (3).

Column (2) reveals a large difference in earnings (including incomes of zero for the non-employed) between men and women, while differences by race/ethnicity, student aptitude, and family background are more modest. Male college graduates earn about 70% more than female graduates 10 years after finishing school. Blacks earn about 15% less than whites, while Asians earn about 15% more. Hispanics had earnings similar to whites in our sample of borrowers. Earnings increase over SAT/ACT quartiles 1 through 3; however, earnings for the top quartile are very similar to those in the second quartile (nearly 20% less than the third quartile). This seemingly perverse pattern at the top is largely due to our sample selection criteria, which exclude those who attended 12 or more months of graduate school (by 1997) or received a graduate degree. This restriction disproportionately affects the top aptitude quartile, and removing it yields very similar average income levels for the top two quartiles (see Table A2). Differences in earnings based on maternal education are relatively modest, although those with mothers who received a BA/BS degree earned almost $9,000 more than those whose mothers did not attend college.

Column (3) in Table 3 reveals very small differences in average undergraduate loan amounts compared across gender and SAT/ACT quartiles. Differences by race/ethnicity and maternal background are more pronounced, though still modest. In considering race/ethnicity, Hispanics borrowed the least at $8,100, while whites borrowed the most at about $1,300 more. Students whose mothers finished college borrowed nearly $1,200 more than students whose mothers never attended college. These two patterns suggest that whites and borrowers from higher socioeconomic families are attending more expensive institutions, on average.

The remaining columns in Table 3 focus on repayment and nonpayment of student loans. Column (4) reports the average fraction of undergraduate loan amounts still outstanding in 2003. This provides a useful measure of returns to lenders within the first 10 years. As noted earlier, borrowers who make standard payments every month should owe very little (or nothing) on their undergraduate loans by this time. A high value here indicates low payment levels or periods of nonpayment. As the first row in Table 3 shows, of the $9,300 initially borrowed, students still

owed 19%, on average, 10 years later. Column (5) reports the fraction of borrowers in default, while column (6) reports a broader measure of nonpayment that includes borrowers in deferment, forbearance, or default. In our sample, 5.8% of all borrowers were in default 10 years after finishing college, while 8.3% were not making payments for various reasons (i.e., deferment, forbearance, or default). Finally, columns (7) and (8) report the average share of undergraduate loan amounts currently in default or currently not being repaid because of deferment, forbearance, or default.[10] If borrowers in default or nonpayment 10 years after leaving school are very unlikely to return to good standing, these figures suggest that the expected loan loss rate (for a typical borrower) faced by lenders is around 2.8% (based on defaults) or as high as 5.2% (based on any nonpayment). These amounts are notably lower than default/nonpayment rates themselves (columns (5) and (6)) because many defaulters (nonpayers) repay some of their student debts before entering default (nonpayment).

Now, consider differences in repayment and nonpayment patterns by gender as reported in Table 3. Consistent with significantly lower post-school earnings, women owe more on their loans 10 years after finishing college (22% vs. 15%) and have higher rates of nonpayment (9.5% vs. 6.7%) compared with men. The fraction of debt in nonpayment was also 2.5 times higher for women than for men. Yet, these differences are not apparent when comparing default rates, which are nearly identical for men and women. Even with similar default rates, women have defaulted on 80% more debt than have men. These figures highlight the value of considering alternative measures of repayment and nonpayment beyond traditionally used default rates. Despite very similar default rates between male and female student borrowers, lenders can expect faster payments and a higher recovery rate from male students.

Differences in repayment behavior are much more pronounced by race/ethnicity than by gender, with particularly stark differences between blacks and whites. On average, black borrowers still owe 51% of their student loans 10 years after college, while white borrowers owe only 16%. Hispanics and Asians owe 22% and 24%, respectively. Black borrowers have defaulted on 16% of

[10]Columns (7) and (8) report the sample averages for the shares of unpaid undergraduate loans multiplied by the default and nonpayment indicators, respectively.

their undergraduate debt and are in nonpayment on 21%. By contrast, the next highest rates of nonpayment are for Hispanics, who have defaulted on only 3.1% of their debt and are in nonpayment on 4.8%. Given these dramatic differences, it is interesting to note that default rates are quite similar for all three minority groups (13% for blacks, 11% for Hispanics and Asians), while they are much lower for whites (less than 5%). There are larger differences between blacks and the other minority groups for nonpayment rates that include deferment and forbearance (18% for blacks vs. 13% for Hispanics and Asians). Once again, important differences in repayment and expected loan losses by lenders are obscured by focusing exclusively on default rates. It is also worth noting that the racial/ethnic differences in repayment/nonpayment outcomes are unlikely to be driven by differences in borrowing or post-school earnings, which are quite modest. We explore this issue further below.

The share of undergraduate debt remaining 10 years after graduation is highest for students with the lowest SAT/ACT scores (24% for the lowest quartile and 14% to 18% for all other quartiles). All default and nonpayment outcomes show an interesting U-shaped pattern in achievement that is roughly consistent with the inverted U-shaped pattern for earnings. Default and nonpayment rates are as high as 6% and 10%, respectively, for the lowest SAT/ACT group; they then fall to around 5% for the second and third quartiles before returning to higher levels for the top ability group. A similar, though weaker, pattern is evident for the share of debt in default or nonpayment. Unlike the relationship for earnings, the surprising nonmonotonic relationship between achievement and default/nonpayment is not a consequence of our sample restriction that excludes those with graduate degrees or 12 or more months of graduate school. A similar pattern arises even when we do not impose this restriction. Indeed, the fraction of debts in default or nonpayment is actually highest for the top SAT/ACT quartile in the unrestricted sample (see Table A2).

The last three rows in Table 3 show that socioeconomic status, as measured by maternal education, is only weakly and statistically insignificantly related to default and nonpayment.[11]

[11]Throughout the paper, we refer to results as statistically significant based on a 0.05 significance level.

By contrast, the fraction of debt repaid after 10 years is significantly higher for borrowers whose mothers attended college. Students with stronger socioeconomic backgrounds appear to reduce their loan balances more quickly; however, they do not appear to be any less likely to enter default, deferment, or forbearance.

3.2 Differences by Institutional Characteristics

We next explore differences in borrowing and repayment/nonpayment patterns, categorizing individuals based on the type of institution from which they graduated. Table 4 shows differences by institutional control (public, private not-for-profit, and private for-profit) and by college selectivity as determined by Barron's. Given the high nonpayment rates for black college graduates reported in Table 3, we also examine outcomes for blacks graduating from historically black colleges and universities (HBCU) versus those from traditional non-HBCU institutions. Table 4, like Table 3, is based on our sample of borrowers.

There is considerable interest today in the high default rates at private for-profit institutions. There is also concern about the high debt levels associated with attendance at private institutions more generally. The first few rows of Table 4 offer more detailed evidence on these issues from 1992-93 graduates 10 years after school. Post-school earnings are quite similar across graduates from public and private for-profit (FP) and not-for-profit (NFP) institutions; however, student debt levels are highest for graduates of NFP institutions ($11,200), followed by FP institutions ($9,700) and public institutions ($8,400). Unfortunately, the sample size for FP institutions is quite small (33), making it difficult to draw strong conclusions about borrowing and repayment/nonpayment rates for this group; note the large standard errors across the table for this institution type. On average, the fraction of debt still owed is slightly lower for public school graduates, but the differences across institution types are statistically insignificant. Default and nonpayment rates are very similar for public school graduates and NFP graduates, but they are 3 to 4 times higher (18% and 26%, respectively) for FP graduates. Unfortunately, due to small sample sizes, we cannot statistically distinguish across the groups. The extremely high default/nonpayment rates for FP

graduates do not appear to translate into much higher shares of debt in default/nonpayment as observed in the last two columns.

Our next set of results compares students based on Barron's rankings of institutional selectivity. Earnings and debt levels are both notably higher among students from the most competitive institutions. Differences in repayment, default, and nonpayment measures across school selectivity are quite modest and generally not statistically significant. As might be expected, default and nonpayment rates are generally lowest for graduates of the most competitive institutions; however, they do not have the lowest share of debt still owed. In general, these differences are not statistically significant. There is little evidence to suggest that institutional selectivity is a particularly important determinant of repayment and nonpayment; however, we examine below whether important differences are confounded by other systematic differences in the characteristics and choices of individuals attending these institutions.

Finally, the bottom of Table 4 compares the outcomes for blacks attending HBCU and non-HBCU institutions. Small sample sizes are a problem here as with FP institutions, yet a few patterns are worth noting. While earnings of HBCU graduates are similar to those of black graduates from non-HBCUs, HBCU graduates leave school with significantly lower debt. The most notable differences between HBCU and non-HBCU graduates, however, are for default and nonpayment. Blacks from HBCUs have default (nonpayment) rates of 8% (12%) compared with roughly twice those rates for non-HBCU graduates. Despite these sizable differences, the fraction of debt in default or nonpayment is remarkably similar (16% and 2% to 21%, respectively).

3.3 A Multivariate Analysis of Student Loan Repayment

As Tables 3 and 4 show, many important dimensions of heterogeneity across college graduates may affect repayment behavior. Therefore, it is important to simultaneously account for all of these factors before drawing strong conclusions about which are most important and why. We use standard multivariate regression methods to do this. These methods can be helpful in sorting out questions such as the following: Are default rates so high among blacks because they attend

different types of schools than whites...or because their SAT/ACT scores are lower...or because their mothers are less educated? Do differences in repayment or nonpayment across institution types simply reflect the students they attract?

Before exploring repayment and nonpayment outcomes, we begin by examining which factors determine how much a student borrows (based on our full sample of borrowers and nonborrowers). Table 5 shows the ordinary least squares (OLS) regression estimates for total undergraduate loan amounts (in $1,000s) as a function of (i) individual characteristics, (ii) college major, (iii) institutional characteristics, and (iv) state fixed effects based on the institutions from which students graduated.[12] Column (1) includes only demographic characteristics: gender, race/ethnicity, SAT/ACT quartile, maternal education, dependency status (for financial aid purposes), and parental income (in $1,000s) interacted with dependency status.[13] This specification is useful for measuring the full impact of these individual/family characteristics on borrowing (and repayment/nonpayment outcomes examined in subsequent tables) and incorporates any effects coming through choice of major or institution of attendance. Column (2) controls for the same background characteristics as well as college major (all other majors not specifically listed reflect the omitted category), while column (3) includes controls for background characteristics and institution characteristics (e.g., type of control and Barron's selectivity). Column (4) includes all three types of variables: background, college major, and institutional characteristics. Comparing estimated effects of background characteristics across columns (1) and (2) through (4) is informative about the extent to which individual characteristics affect borrowing through the choice of college major or institution. Column (5) adds state fixed effects to the specification in column (4), accounting for any unobserved differences in policies, educational institutions, and labor markets that vary across states. Similar specifications are used to study repayment, default, and more general measures of nonpayment below.

Several individual and family characteristics are important determinants of borrowing. Black

[12]Tobit estimates generally yield similar conclusions about which variables are important and their relative magnitudes/signs.

[13]Unfortunately, parental income is unknown for students classified as independent.

students borrow significantly more than all other racial/ethnic groups. Columns (1) and (2) suggest that black graduates borrow nearly $2,000 more than whites. Accounting for choice of major, this difference grows even larger suggesting that blacks tend to choose majors that are not typically associated with extensive borrowing. We also estimate higher levels of borrowing for students with better SAT/ACT scores. Comparing columns (1) and (4) suggests that much of this difference is explained by choice of major and institution: Higher-scoring students tend to attend schools and to choose majors associated with greater borrowing. Table 3 shows that students whose mothers have college education tend to borrow more. Regression results in Table 5 show that the opposite is true once we account for other personal differences, especially race, achievement, and parental income. Accounting for these other factors, students whose mothers received their BA/BS borrow roughly $1,500 less than those whose mothers did not attend college. The estimates also suggest that a $10,000 increase in parental earnings is associated with about $250 less in borrowing. We find no evidence to suggest that differences in borrowing by maternal education or parental income are due to differential choices regarding major and institution.

Some majors appear to be associated with greater borrowing — engineering, health-related majors, history, and especially biology — though not necessarily with high-paying professions. Institutional characteristics also appear to be important determinants of borrowing. Students graduating from private (FP or NFP) institutions tend to borrow about $3,000 more than those attending public institutions, all else equal. Black students attending HBCUs tend to borrow $1,500 to $2,000 less than blacks attending other institutions. Less competitive institutions are associated with about $600 to $700 less in borrowing, although these differences are not statistically significant at the 0.05 level.

Altogether, many factors affect undergraduate borrowing; however, differences across individuals, college majors, and institutions are generally modest. Tables 6 to 10 show the extent to which these same factors affect repayment and nonpayment behavior for our sample of borrowers only. All of these tables have the same structure, which is very similar to that of Table 5. Indeed, the specifications in columns (1) to (4) are the same as in Table 5. These specifications are in-

formative about the importance of characteristics and choices known ex ante (i.e., when lenders decide how much to lend to students). It is also useful to consider the extent to which ex post borrowing and earnings levels affect repayment/nonpayment outcomes conditional on these other factors, as well as the extent to which background, college major, and institutional characteristics affect repayment/nonpayment through borrowing and earnings levels. To explore these issues, column (5) adds measures of earnings in 1997, earnings in 2002, and the total amount borrowed for undergraduate schooling (all in $1,000s) to the background, college major, and institutional characteristics of column (4). Column (6) also includes state fixed effects.

In Table 6, we consider the share of undergraduate debt still owed 10 years after graduation. These OLS regressions produce a number of interesting results. First, column (1) shows that, conditional on other background characteristics, the share of debt owed by men was almost 5 percentage points less than the share owed by women. About one-quarter of this difference is explained by choice of college major (see column (2)) and another half by differences in post-school earnings (see column (5) and recall that initial borrowing amounts were the same for men and women as shown in Table 5). Most strikingly, the share of debt still owed was 22 to 27 percentage points higher for blacks than for whites. While this gap is smaller than the unconditional gap in Table 3, it is still statistically and economically quite significant. Comparing columns (1) through (5) suggests that very little of this gap is explained by choice of major, institution, loan amounts, or post-school earnings. Hispanics owe a slightly larger share of their debt than do whites; however, half of the effect disappears when accounting for state fixed effects. Accounting for other individual characteristics eliminates the raw differences by SAT/ACT scores in the fraction of debt still owed. We also observe no differences by dependency status or parental income. Students whose mothers graduated or obtained postgraduate degrees owe 4 to 7 percentage points less as a fraction of their initial loan when compared with students whose mothers never attended college.

Engineering majors reduce their loans more within the first 10 years after graduating, owing 10 percentage points less as a share of their initial loan (compared with 'other' majors). Column (5) in Table 6 suggests that this is not explained by differences in borrowing or post-school earnings.

Accounting for earnings and borrowing levels (and state fixed effects), social science and humanities majors appear to owe about 8 percentage points more (than 'other' majors) as a share of their original loan amounts. Institutional characteristics do not play an important role in determining repayment rates after accounting for loan amounts and post-school earnings.

As might be expected, both earnings and loan levels are important determinants of the share of debt repaid. Students with higher earnings in 1997 had repaid a greater fraction of their debt (roughly 1.2 percentage points for every $10,000 in earnings), while those with higher student debt levels had repaid a lower fraction (roughly 1.3 percentage points for every additional $1,000 in debt). It is also worth noting that the R-squared values (reported at the bottom of the table) suggest that debt levels and post-school earnings account for about 7% of the variation in the share of debt owed, as much as individual background characteristics, college major, and institutional characteristics combined (compare columns (4) and (5)).

We now turn to measures of nonpayment. Tables 7 and 8 show average marginal effects from probit specifications for default and our broader measure of nonpayment that also includes deferment/forbearance. There is considerable agreement for both of these outcomes, so we discuss them together. Both blacks and Asians have significantly higher default and nonpayment rates than whites (differences are about 6 to 9 percentage points), with slightly greater differences observed for the broader measure of nonpayment.[14] Default/nonpayment rates are quite similar for whites and Hispanics. The estimated effects of race/ethnicity are similar across all specifications, suggesting that racial and ethnic differences in default and nonpayment rates are not driven by differences in choice of major or institution, student debt levels, or even post-school earnings realizations. Parental income for dependent students reduces default and nonpayment, but the effects are small in magnitude (e.g., an additional $10,000 in income lowers the probability of default by less than 0.01) and drop by half when accounting for borrowing and post-school income levels. Before accounting for loan amounts and post-school income (column (4)), we see that business majors are significantly less likely to experience default/nonpayment, while history and

[14]When we do not exclude borrowers with longer periods of postgraduate studies or graduate degrees from our sample, Asians have default/nonpayment rates similar to those of whites and Hispanics.

math/science majors are more likely to experience these problems. Perhaps surprisingly, the estimated effects of college major are not much different after accounting for student borrowing and post-school earnings (compare columns (4) and (5)). None of the institutional characteristics appear to influence default/nonpayment once individual background characteristics are accounted for. Finally, we observe sizable and statistically significant effects of student borrowing levels and post-school earnings. An extra $10,000 in earnings in 2002 is associated with a roughly 0.8 (1.2) percentage-point drop in the probability of default (nonpayment), while an additional $1,000 in student loans increases the likelihood of default (nonpayment) by 0.3 (0.4) percentage points.

Finally, we consider the extent to which these factors affect the share of undergraduate debt on which borrowers have defaulted or are not currently paying (10 years after graduating). Tables 9 and 10 show results from OLS regressions for these two dependent variables. Here, we find that compared with whites, blacks default on 11% to 13% more of their debt and are in nonpayment on about 13% to 16% more of their debt. Despite similarly high default and nonpayment rates for Asians and blacks (Tables 7 and 8), Asians neither default on nor are in nonpayment on a larger fraction of their debts relative to whites and Hispanics. These findings suggest that blacks enter nonpayment relatively early in the repayment process, while Asians enter relatively late after much of their debt has been re-paid. The effects of race/ethnicity on the share of debts in default/nonpayment are not driven by major, institution choices, differences in debt levels, or post-school earnings. The final two rows of Table 10 suggest that after accounting for earnings and borrowing differences, students from the top SAT/ACT quartile are in nonpayment on a greater fraction of their undergraduate debt (about 4 percentage points more) than all other achievement groups. Other individual/family characteristics have little impact on the fraction of debt in default/nonpayment. Choice of college major also appears to have only minor (and generally statistically insignificant at the 0.05 level) effects on the share of debt in default/nonpayment; however, the estimates in the final two columns suggest that health majors default on a significantly smaller fraction, while humanities majors are in nonpayment on a significantly higher fraction. Institutional control and college selectivity are unrelated to the share of debts in de-

fault/nonpayment; however, black borrowers attending HBCUs appear to stop paying and default on a significantly lower fraction of their debt than otherwise similar black borrowers who attend non-HBCUs. As with the probability of default and nonpayment, higher earnings reduce the share of debt on which individuals default or stop paying, while higher debt levels increase the share. Contrary to the case with default and nonpayment, earnings in 1997 (a few years after graduation) rather than in 2003 are most important here. This finding is not surprising, because most individuals enter default/nonpayment in the first few years after graduation. An extra $10,000 in 1997 earnings reduces the fraction of debt in nonpayment by about 0.4 percentage points, while an additional $1,000 in undergraduate debt reduces this fraction by just over 0.3 percentage points.

3.4 Summary of Findings

Given the large number of specifications we consider for each outcome, it is useful to briefly summarize our findings. Table 11 shows the estimates for all five repayment/nonpayment outcomes based on our most general specification (column (6) of Tables 6 through 10). To further focus on the factors that matter, only variables that are statistically significant for at least one outcome are included.

Among the individual and family background characteristics, only race is consistently important for all measures of repayment/nonpayment. Ten years after graduation, black borrowers owe 22% more on their loans, are 6 (9) percentage points more likely to be in default (nonpayment), have defaulted on 11% more loans, and are in nonpayment on roughly 16% more of their undergraduate debt compared with white borrowers. These striking differences are largely unaffected by controls for choice of college major, institution, or even student debt levels and post-school earnings. By contrast, the repayment and nonpayment patterns of Hispanics are very similar to those of whites. Asians show high default/nonpayment rates (similar to blacks) but their shares of debt still owed or debt in default/nonpayment are not significantly different from those of whites. This suggests that many Asians who enter default/nonpayment do so after repaying much of their student loan debt. Maternal college attendance is associated with a greater share of debt

repaid after 10 years, while dependency status and parental income are largely unimportant for repayment/nonpayment after controlling for other factors.

The B&B data suggest some variation in repayment/nonpayment across college major choices; however, which majors are most "successful" in terms of repayment of debt depends on the measure. Engineering majors owe a significantly smaller share of their debts (than 'other' majors) after 10 years, while social science and humanities majors owe a larger share. Humanities majors are also in nonpayment on the greatest share of debt. Default rates are lowest for business majors, whereas health majors default on the lowest fraction of their debts (these are the only significantly different coefficients). In most cases, differences in these repayment measures across majors are modest compared with differences between blacks and whites.

Differences in repayment/nonpayment across the type of institutional control or selectivity are always small and generally statistically insignificant for our sample of 1992-93 graduates. Among black borrowers, those attending HBCUs tend to be in nonpayment on significantly less debt (roughly 12% less); however, other repayment/nonpayment measures show no statistically significant effects of an HBCU. Unfortunately, low sample sizes and correspondingly high standard errors limit the conclusions we can draw from our analysis of HBCUs.

Student debt and post-school income levels are both statistically significant determinants of all measures of repayment and nonpayment, although the estimated effects are modest (e.g., an extra $10,000 in 2002 earnings reduces the probability of nonpayment by 1.2 percentage points and $1,000 in additional student debt raises the probability of nonpayment by 0.4 percentage points). For measures related to the fraction of student debt outstanding, earnings a few years after school are more important than earnings 10 years later when we measure repayment/nonpayment. The opposite is true when considering simple default/nonpayment rates.

4 Some General Lessons and Conclusions

To the extent that government and private lenders care about expected returns on student loans they distribute, we show that analyses of default rates at some arbitrary date offer an incomplete

picture for several reasons. First, many borrowers who enter default eventually return to good standing. Second, borrowers enter default at different times. Total discounted payments are much lower from borrowers who default (without re-entering repayment) early relative to late in their repayment period. Third, other forms of nonpayment are also important, especially during early years. For example, deferment and forbearance are more common than default 5 years after entering repayment. Even if borrowers eventually repay their loans, pushing payments years into the future can be costly to lenders, especially if interest is forgiven.

Differences between default rates and other measures of nonpayment can be sizable. For example, our results suggest that modest black-white differences in default understate much larger differences in expected losses when measured by the fraction of initial debt still owed or in default after 10 years. The opposite is true comparing Asians and whites. Default and nonpayment rates are high for Asians 10 years into repayment, but the fraction of debt repaid within 10 years and the fraction in default are not statistically higher than corresponding rates for whites. Although blacks and Asians default at similar rates, blacks stop paying their loans early while Asians enter default relatively late.

Not surprisingly, borrowers are less likely to experience repayment problems when they have low debt levels or high post-school earnings. These effects are robust and important. As a ballpark figure for all repayment/nonpayment measures, an additional $1,000 in debt can be roughly offset by an additional $10,000 in income. For example, an additional $1,000 in student debt increases the share of debt in nonpayment by 0.3 percentage points, while an extra $10,000 in earnings nine years after graduation reduces this share by 0.4 percentage points.

Given the importance of post-school earnings for repayment, it is natural to expect that differences in average earnings levels across demographic groups or college majors would translate into corresponding differences in repayment/nonpayment rates — but this is not always the case. Despite substantial differences in post-school earnings by race, gender, and academic aptitude, differences in student loan repayment/nonpayment across these demographic characteristics are, at best, modest for all except race. And, while blacks have significantly higher nonpayment rates

than whites, the gaps are not explained by differences in post-school earnings — nor are they explained by choice of major, type of institution, or student debt levels. Differences in post-school earnings (and debt) also explain less than half of the variation in repayment/nonpayment across college majors. We estimate little difference in repayment/nonpayment across different types of institutions attended by students.

Our findings raise a number of important questions. First, what explains the poor repayment performance for black borrowers conditional on their post-school income, debt, and other demographic characteristics? Recent research by Lochner, Stinebrickner, and Suleymanoglu (2013) suggests that parental transfers are an important determinant of student loan repayment for Canadian borrowers with low post-school earnings. Given relatively low wealth levels among American blacks (Shapiro and Oliver, 1997; Barsky et al., 2002) it is likely that differences in parental support at least partially explain their high nonpayment rates. This issue certainly merits greater attention.

Second, what explains the large differences in national cohort rates by institution type (e.g., two- vs. four-year or public vs. private schools)? Official two-year cohort default rates for the 2010 cohort are more than twice as high at four-year for-profit schools as they are at four-year public or private not-for-profit schools (13.6% vs. 6.0% and 5.1%, respectively). Yet, our results based on individual-level data suggest little difference in repayment patterns across institution types for college graduates. The discrepancy between our findings and official default rates can almost certainly be traced to much higher dropout rates at for-profit schools than at public or private not-for-profit schools (Deming, Goldin and Katz, 2012) and much higher default rates for dropouts (Gross et al., 2009). In this case, the default problem at private for-profit schools may simply be a symptom of an underlying dropout problem. More generally, it is important to remember that (i) our repayment/nonpayment patterns are based on a sample of baccalaureate degree recipients and (ii) some of these relationships might differ for borrowers without a four-year degree.

Third, with so many important changes in the labor market and higher education sector over the past few decades, how different would things look for today's graduates? Recent evidence by

Lochner, Stinebrickner, and Suleymanoglu (2013) suggests that the role of post-school income may have become more important for recent students, consistent with increased government attention to repayment enforcement. The increasing importance of college major as a determinant of earnings (Gemici and Wiswall, 2011) suggests that greater differences in repayment across majors for more recent cohorts might also be expected, but this is far from certain given the modest role of earnings differences in explaining variation in repayment/nonpayment by college major in our sample. It is even more difficult to predict how other results might change. Data on more recent cohorts are obviously needed to better inform current policy debates.

We conclude by arguing that future research and policy discussions of student loan repayment need to move beyond an exclusive focus on default rates. Other forms of nonpayment are common, and the actual timing of default matters as much as whether default occurs.

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Table 1: Repayment Status for Undergraduate Borrowers Five and Ten Years after Graduation

Status	1998	2003
Fully repaid	0.269	0.639
	(0.013)	(0.013)
Repaying or fully paid	0.920	0.917
	(0.008)	(0.007)
Deferment or forbearance	0.038	0.025
	(0.006)	(0.004)
Default	0.042	0.058
	(0.006)	(0.005)

The table shows means (standard errors) for repayment status indicators based on the B&B sample of borrowers.

Table 2: Repayment Status Transition Probabilities

	Repayment Status in 2003		
Repayment Status in 1998	Repaying/Fully Paid	Deferment/Forbearance	Default
Repaying or fully paid	0.939	0.020	0.040
	(0.006)	(0.004)	(0.005)
Deferment or forbearance	0.749	0.165	0.085
	(0.063)	(0.057)	(0.032)
Default	0.544	0.038	0.418
	(0.070)	(0.020)	(0.068)

The table shows the probability of each status in 2003 conditional on the status in 1998. Estimates based on the B&B sample of borrowers. Standard errors are listed in parentheses.

Table 3: Average Earnings, Undergraduate Borrowing, and Repayment/Nonpayment Measures in 2003 by Individual Characteristics

Characteristic	(1) N	(2) Earnings (in $1,000)	(3) Total UG Loan Amt. (in $1,000)	(4) Share of UG Debt Still Owed	(5) Fraction in Default	(6) Fraction Not Paying	(7) Default × Share of Debt Still Owed	(8) Not Paying × Share of Debt Still Owed
Full sample	2,120	49.629	9.336	0.188	0.058	0.083	0.028	0.052
		(1.300)	(0.179)	(0.012)	(0.005)	(0.007)	(0.005)	(0.007)
Males	900	64.199	9.646	0.146	0.057	0.067	0.019	0.028
		(2.426)	(0.304)	(0.014)	(0.008)	(0.008)	(0.005)	(0.006)
Females	1,210	37.705	9.091	0.221	0.059	0.095	0.034	0.071
		(1.097)	(0.212)	(0.018)	(0.008)	(0.010)	(0.008)	(0.013)
Asians	50	58.085	8.706	0.236	0.112	0.130	0.020	0.026
		(3.975)	(1.039)	(0.075)	(0.043)	(0.047)	(0.013)	(0.015)
Blacks	150	42.123	9.165	0.506	0.132	0.180	0.156	0.208
		(2.513)	(0.522)	(0.064)	(0.029)	(0.032)	(0.057)	(0.060)
Hispanics	130	47.235	8.127	0.216	0.113	0.134	0.031	0.048
		(3.115)	(0.786)	(0.054)	(0.038)	(0.041)	(0.011)	(0.020)
Whites	1,780	49.965	9.441	0.158	0.047	0.070	0.017	0.040
		(1.483)	(0.197)	(0.012)	(0.005)	(0.007)	(0.003)	(0.007)
SAT/ACT Q1	510	41.641	9.466	0.236	0.061	0.097	0.032	0.059
		(1.641)	(0.460)	(0.025)	(0.010)	(0.014)	(0.008)	(0.011)
SAT/ACT Q2	500	50.197	9.153	0.141	0.048	0.054	0.022	0.025
		(2.164)	(0.319)	(0.015)	(0.010)	(0.010)	(0.007)	(0.007)
SAT/ACT Q3	480	60.087	9.673	0.175	0.047	0.076	0.010	0.026
		(3.914)	(0.371)	(0.031)	(0.009)	(0.014)	(0.004)	(0.007)
SAT/ACT Q4	370	50.540	9.131	0.151	0.061	0.084	0.027	0.052
		(2.508)	(0.378)	(0.022)	(0.012)	(0.014)	(0.009)	(0.014)
Mother no college	920	48.168	8.911	0.223	0.060	0.088	0.027	0.058
		(1.726)	(0.240)	(0.021)	(0.008)	(0.011)	(0.005)	(0.012)
Mother some college	610	44.452	9.184	0.140	0.055	0.069	0.028	0.039
		(1.960)	(0.297)	(0.014)	(0.010)	(0.011)	(0.008)	(0.009)
Mother BA+	580	56.838	10.161	0.180	0.058	0.089	0.028	0.055
		(3.177)	(0.416)	(0.021)	(0.010)	(0.014)	(0.013)	(0.016)

The table shows sample means (standard errors) based on the B&B sample of borrowers.

Table 4: Average Earnings, Undergraduate Borrowing, and Repayment/Nonpayment Measures in 2003 by Type of Institution Attended

Institution Type	(1) N	(2) Earnings (in $1,000)	(3) Total UG Loan Amt. (in $1,000)	(4) Share of UG Debt Still Owed	(5) Fraction in Default	(6) Fraction Not Paying	(7) Default × Share of Debt Still Owed	(8) Not Paying × Share of Debt Still Owed
Public	1,350	49.458	8.407	0.174	0.056	0.076	0.025	0.047
		(1.630)	(0.224)	(0.015)	(0.006)	(0.008)	(0.004)	(0.009)
Private NFP	720	49.827	11.207	0.213	0.054	0.086	0.032	0.061
		(2.268)	(0.297)	(0.021)	(0.009)	(0.012)	(0.012)	(0.014)
Private FP	30	51.434	9.738	0.199	0.182	0.264	0.059	0.087
		(7.896)	(1.263)	(0.073)	(0.091)	(0.108)	(0.042)	(0.047)
Most competitive	150	61.583	11.453	0.202	0.043	0.087	0.009	0.043
		(4.663)	(0.650)	(0.034)	(0.016)	(0.022)	(0.005)	(0.014)
Competitive	1,300	49.990	9.471	0.168	0.054	0.075	0.026	0.041
		(1.558)	(0.235)	(0.013)	(0.007)	(0.008)	(0.005)	(0.006)
Noncompetitive	620	46.041	8.668	0.230	0.065	0.096	0.034	0.076
		(2.696)	(0.308)	(0.026)	(0.011)	(0.015)	(0.012)	(0.021)
Black, not HBCU	100	44.421	10.085	0.448	0.170	0.223	0.157	0.203
		(3.088)	(0.667)	(0.054)	(0.042)	(0.045)	(0.045)	(0.048)
Black, HBCU	50	38.850	7.855	0.589	0.078	0.119	0.155	0.215
		(4.075)	(0.837)	(0.132)	(0.033)	(0.041)	(0.124)	(0.129)

The table shows sample means (standard errors) based on the B&B sample of borrowers.

Table 5: Explaining Total Undergraduate Student Loan Amounts

Variable	(1)	(2)	(3)	(4)	(5)
Male	0.086	0.046	0.192	0.139	0.096
	(0.211)	(0.222)	(0.208)	(0.218)	(0.215)
Black	1.875*	1.843*	2.559*	2.460*	2.803*
	(0.486)	(0.486)	(0.559)	(0.557)	(0.549)
Hispanic	0.670	0.744	0.695	0.733	1.561*
	(0.523)	(0.521)	(0.520)	(0.518)	(0.551)
Asian	-0.626	-0.767	-0.499	-0.673	-0.079
	(0.609)	(0.609)	(0.600)	(0.600)	(0.616)
SAT/ACT Q2	0.254	0.110	0.215	0.089	0.139
	(0.282)	(0.282)	(0.278)	(0.278)	(0.273)
SAT/ACT Q3	0.723*	0.545	0.588*	0.413	0.348
	(0.293)	(0.296)	(0.291)	(0.294)	(0.290)
SAT/ACT Q4	1.076*	0.749*	0.639*	0.312	0.195
	(0.318)	(0.325)	(0.322)	(0.328)	(0.324)
Mother some college	-0.641*	-0.608*	-0.625*	-0.580*	-0.310
	(0.263)	(0.262)	(0.259)	(0.257)	(0.254)
Mother BA+	-1.447*	-1.402*	-1.607*	-1.525*	-1.445*
	(0.247)	(0.246)	(0.244)	(0.243)	(0.240)
Dependent	-0.131	-0.041	-0.376	-0.291	-0.643*
	(0.270)	(0.269)	(0.266)	(0.265)	(0.265)
Parental income	-0.025*	-0.025*	-0.026*	-0.026*	-0.023*
× dependent	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Business		0.004		-0.075	-0.184
		(0.374)		(0.368)	(0.360)
Education		0.436		0.306	0.215
		(0.375)		(0.368)	(0.363)
Engineering		1.263*		1.445*	1.228*
		(0.467)		(0.460)	(0.453)
Health		1.904*		1.953*	1.755*
		(0.459)		(0.451)	(0.447)
Public affairs		-0.402		-0.588	-0.893
		(0.603)		(0.592)	(0.584)
Biology		3.189*		2.897*	2.951*
		(0.532)		(0.527)	(0.523)
Math science		0.318		0.321	0.447
		(0.488)		(0.482)	(0.476)
Social science		0.453		0.340	0.112
		(0.407)		(0.400)	(0.395)
History		1.618*		1.008	1.195
		(0.797)		(0.779)	(0.767)
Humanities		0.440		0.013	-0.031
		(0.408)		(0.403)	(0.396)
Psychology		-0.072		0.122	0.330
		(0.609)		(0.596)	(0.588)
Private FP			2.798*	3.049*	3.036*
			(1.045)	(1.039)	(1.023)
Private NFP			3.075*	3.089*	2.656*
			(0.226)	(0.225)	(0.235)
HBCU			-2.128*	-1.945*	-1.552
			(0.909)	(0.907)	(0.906)
Competitive			-0.657	-0.565	-0.675
			(0.385)	(0.384)	(0.397)
Noncompetitive			-0.651	-0.567	-0.720
			(0.427)	(0.426)	(0.440)
State fixed effects	No	No	No	No	Yes
N	3750	3750	3700	3690	3690
R^2	0.062	0.077	0.113	0.128	0.183

Estimates (standard errors) based on the sample of B&B borrowers and nonborrowers. * $p < 0.05$.

Table 6: Explaining Fraction of Undergraduate Student Debt Still Owed Ten Years After Graduation

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Male	-0.0467*	-0.0341	-0.0471*	-0.0344	-0.0170	-0.0194
	(0.0168)	(0.0177)	(0.0169)	(0.0178)	(0.0189)	(0.0190)
Black	0.2710*	0.2720*	0.2560*	0.2510*	0.2440*	0.2160*
	(0.0329)	(0.0332)	(0.0391)	(0.0393)	(0.0390)	(0.0396)
Hispanic	0.0610	0.0602	0.0681	0.0669	0.0675	0.0347
	(0.0358)	(0.0360)	(0.0366)	(0.0367)	(0.0369)	(0.0411)
Asian	0.0697	0.0621	0.0659	0.0598	0.0616	0.1070
	(0.0547)	(0.0546)	(0.0555)	(0.0554)	(0.0594)	(0.0615)
SAT/ACT Q2	-0.0000	0.0013	0.0017	0.0032	0.0088	0.0056
	(0.0225)	(0.0225)	(0.0228)	(0.0228)	(0.0236)	(0.0236)
SAT/ACT Q3	0.0046	0.0112	0.0056	0.0129	0.0179	0.0235
	(0.0233)	(0.0238)	(0.0238)	(0.0242)	(0.0249)	(0.0252)
SAT/ACT Q4	0.0143	0.0187	0.0093	0.0146	0.0228	0.0289
	(0.0252)	(0.0260)	(0.0259)	(0.0266)	(0.0272)	(0.0276)
Mother some college	-0.0556*	-0.0573*	-0.0557*	-0.0573*	-0.0449*	-0.0467*
	(0.0197)	(0.0197)	(0.0199)	(0.0199)	(0.0204)	(0.0205)
Mother BA+	-0.0596*	-0.0659*	-0.0655*	-0.0724*	-0.0550*	-0.0616*
	(0.0201)	(0.0202)	(0.0204)	(0.0205)	(0.0210)	(0.0213)
Dependent	-0.0073	-0.0079	-0.0129	-0.0132	-0.0190	-0.0094
	(0.0221)	(0.0223)	(0.0224)	(0.0226)	(0.0230)	(0.0237)
Parental income	0.0002	0.0002	0.0002	0.0001	0.0004	0.0004
× dependent	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Business		-0.0475		-0.0488	-0.0199	-0.0200
		(0.0314)		(0.0317)	(0.0321)	(0.0320)
Education		-0.0333		-0.0356	-0.0437	-0.0411
		(0.0304)		(0.0306)	(0.0317)	(0.0320)
Engineering		-0.1040*		-0.1090*	-0.0856*	-0.0896*
		(0.0359)		(0.0365)	(0.0375)	(0.0378)
Health		-0.0127		-0.0167	-0.0040	-0.0073
		(0.0363)		(0.0365)	(0.0376)	(0.0380)
Public affairs		-0.0368		-0.0404	-0.0165	0.0022
		(0.0504)		(0.0507)	(0.0507)	(0.0509)
Biology		0.0052		0.0036	-0.0225	-0.0502
		(0.0402)		(0.0407)	(0.0407)	(0.0420)
Math science		-0.0259		-0.0254	-0.0189	-0.0589
		(0.0380)		(0.0387)	(0.0403)	(0.0409)
Social science		0.0390		0.0397	0.0577	0.0783*
		(0.0336)		(0.0340)	(0.0345)	(0.0351)
History		0.0216		0.0119	0.0186	0.0236
		(0.0606)		(0.0607)	(0.0604)	(0.0610)
Humanities		0.0559		0.0600	0.0742*	0.0826*
		(0.0336)		(0.0342)	(0.0352)	(0.0353)
Psychology		0.0482		0.0494	0.0666	0.0610
		(0.0484)		(0.0486)	(0.0512)	(0.0514)
Private FP			-0.0411	-0.0491	-0.0832	-0.0656
			(0.0781)	(0.0780)	(0.0888)	(0.0890)
Private NFP			0.0520*	0.0474*	-0.0000	0.0044
			(0.0178)	(0.0178)	(0.0187)	(0.0197)
HBCU			0.0416	0.0611	0.0488	0.0409
			(0.0649)	(0.0653)	(0.0665)	(0.0686)
Competitive			-0.0115	-0.0090	0.0111	-0.0126
			(0.0320)	(0.0322)	(0.0327)	(0.0344)
Noncompetitive			-0.0046	-0.0003	0.0203	-0.0118
			(0.0350)	(0.0353)	(0.0359)	(0.0378)
1997 earnings					-0.0012*	-0.0011*
($1,000s)					(0.0005)	(0.0005)
2002 earnings					-0.0004	-0.0004
($1,000s)					(0.0003)	(0.0003)
UG loan amount					0.0130*	0.0133*
($1,000s)					(0.0012)	(0.0012)
State fixed effects	No	No	No	No	No	Yes
N	1850	1850	1820	1820	1610	1610
R^2	0.0507	0.0653	0.0562	0.0717	0.1410	0.1910

The table shows coefficient estimates (standard errors) based on OLS regressions for the fraction of student loan debt still owed in 2003. * $p < 0.05$.

Table 7: Explaining Default Ten Years After Graduation

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Male	-0.0023	-0.0058	-0.0058	-0.0089	-0.0001	0.0005
	(0.0118)	(0.0124)	(0.0119)	(0.0125)	(0.0137)	(0.0137)
Black	0.0733*	0.0687*	0.0804*	0.0732*	0.0665*	0.0554*
	(0.0190)	(0.0189)	(0.0219)	(0.0217)	(0.0223)	(0.0222)
Hispanic	0.0194	0.0184	0.0216	0.0191	0.0317	0.0267
	(0.0232)	(0.0232)	(0.0232)	(0.0232)	(0.0232)	(0.0233)
Asian	0.0709*	0.0704*	0.0750*	0.0745*	0.0734*	0.0718*
	(0.0293)	(0.0292)	(0.0295)	(0.0292)	(0.0323)	(0.0326)
SAT/ACT Q2	-0.0040	-0.0125	-0.0071	-0.0163	-0.0071	-0.0087
	(0.0157)	(0.0157)	(0.0159)	(0.0159)	(0.0165)	(0.0165)
SAT/ACT Q3	-0.0079	-0.0146	-0.0074	-0.0133	-0.0175	-0.0150
	(0.0167)	(0.0169)	(0.0169)	(0.0169)	(0.0180)	(0.0179)
SAT/ACT Q4	0.0185	0.0052	0.0206	0.0073	0.0056	0.0061
	(0.0171)	(0.0175)	(0.0173)	(0.0176)	(0.0184)	(0.0184)
Mother some college	0.0104	0.0119	0.0126	0.0143	0.0177	0.0225
	(0.0139)	(0.0138)	(0.0139)	(0.0138)	(0.0142)	(0.0142)
Mother BA+	0.0182	0.0149	0.0180	0.0139	0.0064	0.0029
	(0.0140)	(0.0138)	(0.0142)	(0.0141)	(0.0151)	(0.0151)
Dependent	-0.0040	-0.0132	-0.0012	-0.0122	-0.0152	-0.0170
	(0.0182)	(0.0185)	(0.0184)	(0.0186)	(0.0191)	(0.0191)
Parental income	-0.0010*	-0.0008*	-0.0010*	-0.0008*	-0.0005	-0.0004
× dependent	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Business		-0.0765*		-0.0748*	-0.0831*	-0.0810*
		(0.0281)		(0.0279)	(0.0310)	(0.0310)
Education		-0.0239		-0.0240	-0.0321	-0.0256
		(0.0212)		(0.0210)	(0.0213)	(0.0212)
Engineering		-0.0224		-0.0369	-0.0226	-0.0177
		(0.0257)		(0.0275)	(0.0291)	(0.0289)
Health		-0.0183		-0.0254	-0.0376	-0.0475
		(0.0250)		(0.0253)	(0.0267)	(0.0268)
Public affairs		-0.0127		-0.0137	-0.0168	-0.0171
		(0.0339)		(0.0336)	(0.0328)	(0.0328)
Biology		0.0125		0.0140	0.0062	0.0089
		(0.0249)		(0.0249)	(0.0246)	(0.0245)
Math science		0.0451*		0.0478*	0.0380	0.0329
		(0.0225)		(0.0225)	(0.0240)	(0.0241)
Social science		-0.0310		-0.0288	-0.0321	-0.0221
		(0.0242)		(0.0240)	(0.0244)	(0.0241)
History		0.0681*		0.0678*	0.0491	0.0501
		(0.0329)		(0.0325)	(0.0329)	(0.0329)
Humanities		-0.0010		-0.0008	-0.0031	0.0008
		(0.0225)		(0.0224)	(0.0228)	(0.0226)
Psychology		0.0001		-0.0016	-0.0673	-0.0657
		(0.0318)		(0.0315)	(0.0430)	(0.0435)
Private FP			-0.0110	-0.0156		
			(0.0590)	(0.0607)		
Private NFP			0.0085	0.0069	-0.0088	-0.0056
			(0.0125)	(0.0124)	(0.0131)	(0.0133)
HBCU			-0.0331	-0.0281	-0.0099	-0.0049
			(0.0373)	(0.0373)	(0.0371)	(0.0376)
Competitive			0.0158	0.0145	0.0138	0.0117
			(0.0240)	(0.0234)	(0.0251)	(0.0249)
Noncompetitive			0.0167	0.0164	0.0274	0.0181
			(0.0259)	(0.0254)	(0.0268)	(0.0269)
1997 earnings					-0.0003	-0.0001
($1,000s)					(0.0004)	(0.0004)
2002 earnings					-0.0008*	-0.0008*
($1,000s)					(0.0003)	(0.0003)
UG loan amount					0.0027*	0.0028*
($1,000s)					(0.0008)	(0.0008)
Division fixed effects	No	No	No	No	No	Yes
N	1870	1870	1840	1840	1610	1610
Log likelihood	-436.7	-421.4	-426.4	-410.0	-337.9	-328.0

The table shows average marginal effects (standard errors) based on probit specifications for default in 2003. * $p < 0.05$.

Table 8: Explaining Nonpayment (Default, Deferment, or Forbearance) Ten Years After Graduation

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Male	-0.0170	-0.0197	-0.0212	-0.0235	-0.0049	-0.0027
	(0.0139)	(0.0145)	(0.0140)	(0.0146)	(0.0155)	(0.0155)
Black	0.0900*	0.0855*	0.0999*	0.0906*	0.0905*	0.0853*
	(0.0224)	(0.0224)	(0.0259)	(0.0257)	(0.0246)	(0.0247)
Hispanic	0.0070	0.0045	0.0108	0.0070	0.0269	0.0286
	(0.0281)	(0.0281)	(0.0282)	(0.0282)	(0.0266)	(0.0269)
Asian	0.0790*	0.0768*	0.0826*	0.0810*	0.0885*	0.0888*
	(0.0364)	(0.0362)	(0.0368)	(0.0364)	(0.0372)	(0.0377)
SAT/ACT Q2	-0.0178	-0.0249	-0.0210	-0.0287	-0.0257	-0.0265
	(0.0184)	(0.0183)	(0.0187)	(0.0186)	(0.0187)	(0.0187)
SAT/ACT Q3	-0.0150	-0.0189	-0.0157	-0.0188	-0.0191	-0.0182
	(0.0194)	(0.0195)	(0.0196)	(0.0197)	(0.0197)	(0.0197)
SAT/ACT Q4	0.0268	0.0114	0.0257	0.0106	0.0081	0.0062
	(0.0196)	(0.0202)	(0.0200)	(0.0205)	(0.0203)	(0.0202)
Mother some college	-0.0025	-0.0009	-0.0004	0.0017	0.0008	0.0076
	(0.0160)	(0.0160)	(0.0161)	(0.0160)	(0.0159)	(0.0159)
Mother BA+	0.0014	-0.0036	-0.0006	-0.0069	-0.0055	-0.0068
	(0.0164)	(0.0163)	(0.0167)	(0.0166)	(0.0167)	(0.0168)
Dependent	0.0324	0.0256	0.0340	0.0251	0.0126	0.0112
	(0.0210)	(0.0212)	(0.0211)	(0.0213)	(0.0210)	(0.0210)
Parental income	-0.0014*	-0.0013*	-0.0015*	-0.0013*	-0.0008	-0.0007
× dependent	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Business		-0.0709*		-0.0702*	-0.0522	-0.0507
		(0.0292)		(0.0293)	(0.0294)	(0.0294)
Education		-0.0411		-0.0415	-0.0478	-0.0421
		(0.0254)		(0.0253)	(0.0252)	(0.0252)
Engineering		-0.0315		-0.0480	-0.0262	-0.0211
		(0.0310)		(0.0329)	(0.0349)	(0.0348)
Health		-0.0040		-0.0113	-0.0120	-0.0195
		(0.0285)		(0.0288)	(0.0286)	(0.0287)
Public affairs		-0.0159		-0.0167	-0.0019	-0.0050
		(0.0398)		(0.0397)	(0.0367)	(0.0367)
Biology		0.0073		0.0060	-0.0004	-0.0014
		(0.0304)		(0.0305)	(0.0292)	(0.0293)
Math science		0.0555*		0.0587*	0.0538	0.0480
		(0.0272)		(0.0273)	(0.0281)	(0.0283)
Social science		-0.0302		-0.0282	-0.0252	-0.0136
		(0.0280)		(0.0279)	(0.0275)	(0.0273)
History		0.0868*		0.0847*	0.0653	0.0658
		(0.0402)		(0.0400)	(0.0382)	(0.0383)
Humanities		0.0141		0.0139	0.0184	0.0231
		(0.0258)		(0.0258)	(0.0254)	(0.0252)
Psychology		0.0416		0.0404	0.0097	0.0120
		(0.0344)		(0.0344)	(0.0363)	(0.0365)
Private FP			0.0116	0.0154		
			(0.0620)	(0.0611)		
Private NFP			0.0201	0.0167	-0.0036	-0.0000
			(0.0143)	(0.0142)	(0.0144)	(0.0146)
HBCU			-0.0465	-0.0322	-0.0438	-0.0399
			(0.0445)	(0.0442)	(0.0434)	(0.0443)
Competitive			-0.0100	-0.0129	0.0033	-0.0020
			(0.0255)	(0.0251)	(0.0265)	(0.0265)
Noncompetitive			-0.0071	-0.0094	0.0171	0.0043
			(0.0279)	(0.0277)	(0.0286)	(0.0289)
1997 earnings					-0.0005	-0.0003
($1,000s)					(0.0005)	(0.0005)
2002 earnings					-0.0012*	-0.0012*
($1,000s)					(0.0003)	(0.0003)
UG loan amount					0.0040*	0.0040*
($1,000s)					(0.0009)	(0.0008)
Division fixed effects	No	No	No	No	No	Yes
N	1870	1870	1840	1840	1610	1610
Log likelihood	-555.1	-538.4	-543.4	-525.9	-404.7	-396.1

The table shows average marginal effects (standard errors) based on probit specifications for nonpayment in 2003. * $p < 0.05$.

Table 9: Explaining Fraction of Student Loan Debt in Default Ten Years After Graduation

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Male	-0.0107	-0.0105	-0.0117	-0.0124	-0.0060	-0.0058
	(0.0083)	(0.0088)	(0.0084)	(0.0090)	(0.0010)	(0.0102)
Black	0.1060*	0.1050*	0.1300*	0.1290*	0.1160*	0.1080*
	(0.0163)	(0.0165)	(0.0195)	(0.0196)	(0.0205)	(0.0212)
Hispanic	0.0248	0.0249	0.0262	0.0257	0.0297	0.0164
	(0.0177)	(0.0178)	(0.0181)	(0.0182)	(0.0193)	(0.0219)
Asian	0.0069	0.0028	0.0077	0.0039	0.0042	0.0031
	(0.0273)	(0.0273)	(0.0278)	(0.0277)	(0.0315)	(0.0330)
SAT/ACT Q2	0.0069	0.0052	0.0038	0.0018	0.0060	0.0086
	(0.0111)	(0.0112)	(0.0113)	(0.0114)	(0.0125)	(0.0126)
SAT/ACT Q3	0.0026	0.0008	0.0025	0.0004	0.0033	0.0062
	(0.0116)	(0.0118)	(0.0118)	(0.0120)	(0.0132)	(0.0135)
SAT/ACT Q4	0.0213	0.0163	0.0215	0.0157	0.0192	0.0216
	(0.0124)	(0.0129)	(0.0128)	(0.0132)	(0.0142)	(0.0147)
Mother some college	-0.0016	-0.0026	-0.0014	-0.0024	0.0011	0.0009
	(0.0098)	(0.0098)	(0.0099)	(0.0100)	(0.0107)	(0.0110)
Mother BA+	-0.0156	-0.0186	-0.0143	-0.0176	-0.0152	-0.0185
	(0.0100)	(0.0100)	(0.0102)	(0.0102)	(0.0111)	(0.0114)
Dependent	-0.0081	-0.0130	-0.0064	-0.0116	-0.0111	-0.0118
	(0.0110)	(0.0111)	(0.0112)	(0.0113)	(0.0122)	(0.0127)
Parental income	-0.0002	-0.0002	-0.0002	-0.0002	-0.0001	-0.0001
× dependent	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Business		-0.0333*		-0.0315*	-0.0266	-0.0235
		(0.0156)		(0.0158)	(0.0169)	(0.0171)
Education		-0.0229		-0.0213	-0.0317	-0.0323
		(0.0150)		(0.0152)	(0.0166)	(0.0171)
Engineering		-0.0328		-0.0297	-0.0210	-0.0159
		(0.0179)		(0.0182)	(0.0198)	(0.0202)
Health		-0.0291		-0.0337	-0.0394*	-0.0424*
		(0.0180)		(0.0181)	(0.0198)	(0.0203)
Public affairs		-0.0115		-0.00849	-0.00620	-0.00579
		(0.0251)		(0.0253)	(0.0268)	(0.0273)
Biology		-0.0155		-0.0147	-0.0214	-0.0199
		(0.0198)		(0.0202)	(0.0214)	(0.0224)
Math science		0.0226		0.0283	0.0404	0.0375
		(0.0189)		(0.0193)	(0.0213)	(0.0219)
Social science		-0.0162		-0.0128	-0.0133	-0.0081
		(0.0166)		(0.0168)	(0.0182)	(0.0187)
History		0.0208		0.0235	0.0179	0.0103
		(0.0295)		(0.0297)	(0.0312)	(0.0320)
Humanities		0.0269		0.0301	0.0277	0.0305
		(0.0167)		(0.0170)	(0.0185)	(0.0188)
Psychology		-0.0212		-0.0232	-0.0367	-0.0397
		(0.0241)		(0.0242)	(0.0271)	(0.0276)
Private FP			-0.0208	-0.0272	-0.0420	-0.0310
			(0.0382)	(0.0381)	(0.0456)	(0.0463)
Private NFP			-0.0038	-0.0057	-0.0200*	-0.0117
			(0.0089)	(0.0089)	(0.0098)	(0.0105)
HBCU			-0.0805*	-0.0803*	-0.0644	-0.0604
			(0.0322)	(0.0324)	(0.0349)	(0.0366)
Competitive			0.0187	0.0197	0.0214	0.0120
			(0.0160)	(0.0161)	(0.0173)	(0.0185)
Noncompetitive			0.0079	0.0098	0.0130	-0.0050
			(0.0174)	(0.0176)	(0.0190)	(0.0203)
1997 earnings					-0.0006*	-0.0005
($1,000s)					(0.0003)	(0.0003)
2002 earnings					-0.0001	-0.0001
($1,000s)					(0.0001)	(0.0001)
UG loan amount					0.0026*	0.0029*
($1,000s)					(0.0006)	(0.0007)
State fixed effects	No	No	No	No	No	Yes
N	1870	1870	1840	1840	1630	1630
R^2	0.0302	0.0434	0.0341	0.0483	0.0634	0.0911

The table shows coefficient estimates (standard errors) based on OLS regressions for the fraction of student loan debt in default in 2003. * $p < 0.05$.

Table 10: Explaining Fraction of Student Loan Debt in Nonpayment Ten Years After Graduation

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Male	-0.0191	-0.0163	-0.0196	-0.0180	-0.0148	-0.0140
	(0.0132)	(0.0139)	(0.0134)	(0.0142)	(0.0137)	(0.0139)
Black	0.1340*	0.1350*	0.1590*	0.1560*	0.1590*	0.1580*
	(0.0259)	(0.0262)	(0.0311)	(0.0313)	(0.0282)	(0.0290)
Hispanic	0.0091	0.0111	0.0109	0.0121	0.0244	0.0214
	(0.0282)	(0.0283)	(0.0289)	(0.0290)	(0.0265)	(0.0300)
Asian	-0.0033	-0.0100	-0.0006	-0.0067	0.0033	0.0083
	(0.0434)	(0.0434)	(0.0443)	(0.0443)	(0.0432)	(0.0453)
SAT/ACT Q2	-0.0184	-0.0190	-0.0197	-0.0207	-0.0052	0.0017
	(0.0177)	(0.0178)	(0.0181)	(0.0181)	(0.0171)	(0.0173)
SAT/ACT Q3	-0.0177	-0.0178	-0.0161	-0.0169	0.0028	0.0023
	(0.0184)	(0.0188)	(0.0189)	(0.0192)	(0.0181)	(0.0185)
SAT/ACT Q4	0.0266	0.0206	0.0275	0.0204	0.0394*	0.0411*
	(0.0198)	(0.0205)	(0.0204)	(0.0211)	(0.0196)	(0.0202)
Mother some college	-0.0061	-0.0089	-0.0061	-0.0090	-0.0152	-0.0140
	(0.0156)	(0.0156)	(0.0158)	(0.0158)	(0.0148)	(0.0151)
Mother BA+	-0.0222	-0.0267	-0.0211	-0.0263	-0.0157	-0.0132
	(0.0159)	(0.0159)	(0.0162)	(0.0162)	(0.0152)	(0.0156)
Dependent	-0.0014	-0.0054	0.0001	-0.0041	0.0019	-0.0015
	(0.0174)	(0.0177)	(0.0178)	(0.0180)	(0.0167)	(0.0174)
Parental income	-0.0002	-0.0002	-0.0002	-0.0002	-0.0001	0.0000
× dependent	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0002)
Business		-0.0358		-0.0345	-0.0112	-0.0101
		(0.0248)		(0.0252)	(0.0232)	(0.0235)
Education		-0.0371		-0.0363	-0.0361	-0.0424
		(0.0239)		(0.0242)	(0.0228)	(0.0234)
Engineering		-0.0300		-0.0258	-0.0171	-0.0084
		(0.0284)		(0.0291)	(0.0272)	(0.0277)
Health		0.0150		0.0100	-0.0216	-0.0266
		(0.0286)		(0.0290)	(0.0272)	(0.0279)
Public affairs		0.0062		0.0066	0.0328	0.0233
		(0.0399)		(0.0404)	(0.0367)	(0.0374)
Biology		-0.0255		-0.0260	-0.0275	-0.0280
		(0.0315)		(0.0323)	(0.0294)	(0.0307)
Math science		0.0099		0.0152	0.0413	0.0330
		(0.0301)		(0.0308)	(0.0292)	(0.0300)
Social science		-0.0098		-0.0056	0.0062	0.0078
		(0.0264)		(0.0269)	(0.0249)	(0.0256)
History		0.0444		0.0451	0.0486	0.0359
		(0.0470)		(0.0474)	(0.0429)	(0.0438)
Humanities		0.0678*		0.0724*	0.0853*	0.0809*
		(0.0266)		(0.0271)	(0.0254)	(0.0258)
Psychology		0.0058		0.0038	0.0110	-0.0002
		(0.0384)		(0.0387)	(0.0372)	(0.0378)
Private FP			-0.0337	-0.0420	-0.0733	-0.0590
			(0.0609)	(0.0609)	(0.0625)	(0.0635)
Private NFP			0.0091	0.0064	-0.0140	-0.0006
			(0.0141)	(0.0142)	(0.0135)	(0.0145)
HBCU			-0.0864	-0.0758	-0.1270*	-0.1170*
			(0.0513)	(0.0517)	(0.0479)	(0.0501)
Competitive			0.0163	0.0167	0.0235	0.0106
			(0.0255)	(0.0257)	(0.0238)	(0.0253)
Noncompetitive			0.0197	0.0200	0.0193	-0.00482
			(0.0278)	(0.0281)	(0.0261)	(0.0278)
1997 earnings					-0.0005	-0.0004
($1,000s)					(0.0004)	(0.0004)
2002 earnings					-0.0004*	-0.0004*
($1,000s)					(0.0002)	(0.0002)
UG loan amount					0.0033*	0.0034*
($1,000s)					(0.0009)	(0.0009)
State controls	No	No	No	No	No	Yes
N	1870	1870	1840	1840	1630	1630
R^2	0.0228	0.0355	0.0241	0.0368	0.0655	0.0960

The table shows coefficient estimates (standard errors) based on OLS regressions for the fraction of student loan debt in nonpayment in 2003. * $p < 0.05$.

Table 11: Summary of Results from Specification (6) for All Repayment/Nonpayment Outcomes

Variable	Share of UG Debt Still Owed	Fraction in Default	Fraction Not Paying	Default × Share of Debt Still Owed	Not Paying × Share of Debt Still Owed
Black	0.2160*	0.0554*	0.0853*	0.1080*	0.1580*
	(0.0396)	(0.0222)	(0.0247)	(0.0212)	(0.0290)
Asian	0.1070	0.0718*	0.0888*	0.0031	0.0083
	(0.0615)	(0.0326)	(0.0377)	(0.0330)	(0.0453)
SAT/ACT Q4	0.0289	0.0061	0.0062	0.0216	0.0411*
	(0.0276)	(0.0184)	(0.0202)	(0.0147)	(0.0202)
Mother some college	-0.0467*	0.0225	0.0076	0.0009	-0.0140
	(0.0205)	(0.0142)	(0.0159)	(0.0110)	(0.0151)
Mother BA+	-0.0616*	0.0029	-0.0068	-0.0185	-0.0132
	(0.0213)	(0.0151)	(0.0168)	(0.0114)	(0.0156)
Business	-0.0200	-0.0810*	-0.0507	-0.0235	-0.0101
	(0.0320)	(0.0310)	(0.0294)	(0.0171)	(0.0235)
Engineering	-0.0896*	-0.0177	-0.0211	-0.0159	-0.0084
	(0.0378)	(0.0289)	(0.0348)	(0.0202)	(0.0277)
Health	-0.0073	-0.0475	-0.0195	-0.0424*	-0.0266
	(0.0380)	(0.0268)	(0.0287)	(0.0203)	(0.0279)
Social science	0.0783*	-0.0221	-0.0136	-0.0081	0.0078
	(0.0351)	(0.0241)	(0.0273)	(0.0187)	(0.0256)
Humanities	0.0826*	0.0008	0.0231	0.0305	0.0809*
	(0.0353)	(0.0226)	(0.0252)	(0.0188)	(0.0258)
HBCU	0.0409	-0.0049	-0.0399	-0.0604	-0.1170*
	(0.0686)	(0.0376)	(0.0443)	(0.0366)	(0.0501)
1997 earnings	-0.0011*	-0.0001	-0.0003	-0.0005	-0.0004
($1,000s)	(0.0005)	(0.0004)	(0.0005)	(0.0003)	(0.0004)
2003 earnings	-0.0004	-0.0008*	-0.0012*	-0.0001	-0.0004*
($1,000s)	(0.0003)	(0.0003)	(0.0003)	(0.0001)	(0.0002)
UG loan amount	0.0133*	0.0028*	0.0039*	0.0029*	0.0034*
($1,000s)	(0.0012)	(0.0008)	(0.0008)	(0.0007)	(0.0009)

The table shows estimated coefficients/average marginal effects from specification (6) of Tables 6 through 10 if the estimate is statistically significant for any repayment or nonpayment outcome. Standard errors in parentheses. * $p < 0.05$.

A1: Sample Means (Standard Errors) for Full Sample and Borrowers Only

Characteristic	Full Sample	Borrowers Only
Male	0.442	0.444
	(0.013)	(0.010)
Asian	0.025	0.031
	(0.004)	(0.004)
Black	0.067	0.049
	(0.006)	(0.004)
Hispanic	0.060	0.043
	(0.007)	(0.004)
White	0.844	0.873
	(0.010)	(0.007)
Mother no college	0.442	0.369
	(0.013)	(0.009)
Mother some college	0.280	0.263
	(0.012)	(0.009)
Mother BA+	0.278	0.368
	(0.012)	(0.009)
Dependent	0.576	0.671
	(0.013)	(0.009)
Parental income	25.453	41.417
× dependent	(0.856)	(1.151)
SAT/ACT Q1	0.286	0.272
	(0.013)	(0.009)
SAT/ACT Q2	0.282	0.290
	(0.013)	(0.009)
SAT/ACT Q3	0.247	0.259
	(0.012)	(0.009)
SAT/ACT Q4	0.185	0.179
	(0.011)	(0.007)
Business	0.240	0.254
	(0.014)	(0.010)
Education	0.132	0.117
	(0.009)	(0.006)
Engineering	0.073	0.062
	(0.006)	(0.004)
Health	0.067	0.060
	(0.006)	(0.004)
Public affairs	0.038	0.038
	(0.005)	(0.004)
Biology	0.047	0.037
	(0.005)	(0.003)
Math science	0.054	0.052
	(0.005)	(0.004)
Social science	0.082	0.090
	(0.006)	(0.005)
History	0.018	0.015
	(0.004)	(0.003)
Humanities	0.079	0.087
	(0.006)	(0.005)
Psychology	0.033	0.032
	(0.004)	(0.003)
Private FP	0.022	0.016
	(0.005)	(0.003)
Private NFP	0.322	0.283
	(0.013)	(0.009)
HBCU	0.029	0.020
	(0.005)	(0.003)
Most competitive	0.063	0.074
	(0.006)	(0.005)
Competitive	0.633	0.649
	(0.013)	(0.009)
Noncompetitive	0.304	0.278
	(0.013)	(0.009)

Table A2: Average Earnings, Undergraduate Borrowing, and Repayment/Nonpayment Measures in 2003 by Individual Characteristics (Sample without Graduate School Attendance/Degree Restrictions)

Characteristic	N	Earnings (in $1,000)	Total UG Loan Amt. (in $1,000)	Share of UG Debt Still Owed	Fraction in Default	Fraction Not Paying	Default × Share of Debt Still Owed	Not Paying × Share of Debt Still Owed
Full sample	3790	51.063	9.287	0.233	0.050	0.092	0.029	0.066
		(0.864)	(0.133)	(0.009)	(0.004)	(0.005)	(0.005)	(0.007)
Males	1620	64.951	9.426	0.206	0.050	0.091	0.029	0.060
		(1.595)	(0.216)	(0.012)	(0.006)	(0.008)	(0.009)	(0.010)
Females	2170	39.755	9.176	0.254	0.049	0.092	0.029	0.071
		(0.757)	(0.165)	(0.013)	(0.005)	(0.007)	(0.005)	(0.009)
Asians	120	62.395	8.856	0.286	0.050	0.071	0.009	0.033
		(3.150)	(0.604)	(0.063)	(0.020)	(0.023)	(0.006)	(0.017)
Blacks	260	44.910	9.464	0.523	0.098	0.207	0.110	0.243
		(1.861)	(0.394)	(0.045)	(0.019)	(0.026)	(0.036)	(0.044)
Hispanics	230	48.860	7.823	0.198	0.070	0.122	0.017	0.055
		(2.400)	(0.552)	(0.035)	(0.022)	(0.027)	(0.006)	(0.016)
Whites	3150	51.032	9.356	0.210	0.045	0.082	0.025	0.055
		(0.988)	(0.147)	(0.009)	(0.004)	(0.006)	(0.005)	(0.007)
SAT/ACT Q1	820	42.424	9.565	0.261	0.057	0.107	0.025	0.073
		(1.211)	(0.354)	(0.023)	(0.008)	(0.011)	(0.005)	(0.010)
SAT/ACT Q2	900	49.344	9.129	0.229	0.041	0.067	0.015	0.041
		(1.447)	(0.238)	(0.016)	(0.007)	(0.009)	(0.004)	(0.008)
SAT/ACT Q3	880	56.850	9.132	0.189	0.038	0.082	0.020	0.044
		(2.274)	(0.251)	(0.019)	(0.006)	(0.011)	(0.006)	(0.008)
SAT/ACT Q4	830	57.154	9.486	0.230	0.057	0.106	0.051	0.094
		(1.739)	(0.291)	(0.016)	(0.010)	(0.012)	(0.019)	(0.021)
Mother no college	1490	50.677	8.732	0.243	0.055	0.089	0.023	0.058
		(1.254)	(0.181)	(0.016)	(0.006)	(0.008)	(0.004)	(0.009)
Mother some college	1090	48.534	9.226	0.202	0.049	0.095	0.046	0.085
		(1.339)	(0.226)	(0.013)	(0.008)	(0.010)	(0.014)	(0.016)
Mother BA+	1200	53.796	10.051	0.249	0.043	0.092	0.021	0.060
		(1.891)	(0.283)	(0.017)	(0.006)	(0.010)	(0.007)	(0.010)

The table shows sample means (standard errors) based on sample of borrowers without restrictions on graduate school participation/degrees.