Research Report

Detecting Early Signs of Default Risk at Austin Community College

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EXECUTIVE SUMMARY AND HIGHLIGHTS

Despite extensive prior research into the factors related to student loan default, researchers have not publicly provided a focus on the relevant data relationships within the community college sector. The present study examines how variables derived from Austin Community College's (ACC) institutional systems are related to default outcomes for the group of ACC borrowers who entered repayment on Federal Stafford student loans during fiscal year (FY) 2010. The analysis employs logistic regression as a means of assessing the strength and significance of relationships between these variables and default behavior. The results indicate that — for a borrower at ACC — a lower first-semester grade point average (GPA), a higher first-semester Pell grant amount, the need for developmental education coursework, and being male are the factors with the strongest relationships to student loan default.

Findings:

- The study demonstrates that ACC should be able to detect differences in default risk between various groups of borrowers as early as the first semester of enrollment. Measurements of variables at the end of the first semester were nearly as successful in predicting default risk as variables that assess borrowers over the whole duration of their enrollment.
- First-semester GPA has the strongest association with whether borrowers ultimately default. For borrowers with the lowest GPA (0.0), the probability of default was 13 percentage points higher than it was for borrowers who had a GPA of at least 3.5.
- Borrowers who receive the highest amounts of Pell grants during the first semester are more likely to default on their student loans. Borrowers who received more than $1,045 in Pell grants had a likelihood of default that was 7 percentage points higher than borrowers who did not get Pell grants.
- Borrowers in developmental education, particularly in math, have greater chances of default compared to other borrowers. Although the effect of remedial education status upon default is relatively modest, the finding has implications for the actions that ACC could take to mitigate the risk. Consider that about a third of ACC borrowers failed to meet college preparedness standards during the first semester for which they borrowed.
- As many default studies find, women are less likely to default than men. This appears to be true within virtually every category the two genders can be compared. For example, men have higher default rates than women within most programs of study at ACC.
- Total borrowing is associated with default risk. However, it is the borrowers with the smallest loan amounts who have the greatest likelihood of default, followed by the borrowers with the highest amounts.
- Consistent with a large number of prior default studies, borrowers who complete their degree and certificate programs are much less likely to default than borrowers who do not.

Implications:

- Since one can use the study findings to identify groups of borrowers who have different chances of defaulting, one should be able to provide support to borrowers according to the probability that they will run into repayment trouble.
- Postsecondary institutions might be able to modify and enhance the systems they use to monitor GPA in order to provide targeted and supplemental loan and debt counseling.
- The findings on GPA could also be used to justify adding subject matter that addresses student loans during the student success workshops that borrowers are directed to attend at ACC when satisfactory academic progress (SAP) policies are triggered.
- Schools could enhance their entrance counseling — such as by advising borrowers on how to develop personal budgets — for borrowers who require remedial coursework.

- Additionally, ACC and other institutions could add student loan-relevant subject matter to developmental education math classes.
- The advantage of the suggestions related to developmental education borrowers is that they impart additional loan counseling to borrowers as they are engaging the institution and prior to possibly dropping or stopping out.

BACKGROUND

Working with Austin Community College (ACC) represents a unique opportunity in TG's series of Institutional Default Studies. Whereas prior TG studies have focused exclusively on the default behavior of student loan borrowers at public universities, this study provides an alternative perspective, in that ACC serves students who bring a different combination of academic backgrounds and who seek a somewhat different set of goals. Moreover, TG conducted the prior default studies during the early 2000s. Since then, there has been phenomenal growth in higher education enrollment in Texas, especially in the two-year educational sector of which ACC is a member. During the same period of time, there has been an increasing participation rate of ACC students in the federal student loan programs — a likely product of increasing enrollments, rising costs of education, changes in aid policies at the state and institutional levels, and the changing economic circumstances of students during and after the 2007-2009 recession. In turn, higher numbers of borrowers during stressful economic times somewhat naturally led to higher numbers and rates of default, making continued research into student loan defaults all the more imperative.

Within its broad mission to serve a diverse body of students with a myriad of educational goals, ACC must meet the challenge of providing developmental education to a large number of students who are underprepared academically. During fall 2009, 45 percent (2,165) of the 4,771 ACC students who were enrolling in college for the first time did not meet Texas state standards for preparedness in math, reading, or writing (Texas Higher Education Coordinating Board, 2009). Since Texas state law requires that students must meet these preparedness standards before taking college level courses in areas that require those skills, many ACC students must attend and pass developmental education courses in addition to coursework they need to satisfy degree or certificate requirements. Naturally, the additional developmental education courses create an expense for the students and can increase the need to borrow student loans.

ACC students have low rates of full-time enrollment, retention, and completion — characteristics that might correlate with their ability to repay student loans. Only 27 percent of fall 2009 enrollees attended full time (National Center for Education Statistics).[1] Although part-time enrollment is a reasonable strategy for many students, it can lengthen the time and cumulative costs of attendance, and it can thereby decrease the chance that some students will achieve their educational objectives. The retention rate for part-time students at ACC as of fall 2010 was 45 percent (National Center for Education Statistics).[2] While program completion is admittedly not the objective of all students at community colleges, the completion rates at ACC are nevertheless low for students who are seeking degrees or certificates. The completion rate within 150 percent of normal completion time (three years) at ACC was four percent for all associate degree-seeking students who first enrolled in 2009.[3] Therefore, if successful educational outcomes better position borrowers for repayment, the implication is that community colleges like ACC potentially serve large numbers of students who would be poorly equipped to repay student loans in the absence of sufficient loan and debt counseling.

Although outcome measures at ACC, such as retention and completion rates, have not likely changed much over the past decade, the number of students involved has increased dramatically. Between fall 2000 and fall 2010, enrollment at ACC grew by more than 60 percent, from 25,853 to 41,582 (National Center for Education Statistics). However, the growth occurred unevenly over this period, with dramatic accelerations in growth during and after the 2001 and 2007-2009 recessions. The latter recession is particularly relevant to the borrowers in this study, who entered repayment on their federal student loans between October 1, 2009 and September 30, 2010. Most of these borrowers were enrolled during the recession or during the period immediately after the recession, when job markets remained lackluster. In fact, ACC enrollment between fall 2008 and fall 2010 grew by 23 percent (National Center for Education Statistics). Lest one conclude that such dramatic increases are temporary and evaporate after job growth materializes, consider that the ACC enrollment level is still more than 16 percent higher than it was before the last recession, even after two consecutive enrollment declines during the fall 2012 and fall 2013 semesters.

This is important for the present study, because enrollment growth can easily translate to growth in student loan utilization. (For the purposes of this study, references to 'student loans' are limited to federal student loans, thereby excluding private education loans.) Between academic

1 By comparison, about 93 percent of students at the University of Texas at Austin attended full time in fall 2009.

2 The comparable rate for public universities in Texas was similar, at 46 percent. However, most students at public universities attend full time and the retention rate for full-time students at these institutions is 68 percent.

3 The success rates of community colleges are obscured by the fact that many students attend those institutions with the intent of transferring to universities for completion of bachelor's degrees. Community colleges in large cities might simply have much higher transfer rates, and therefore lower completion rates, than similar institutions in smaller cities.

year (AY) 2000 and AY 2010, federal student loan disbursements at ACC (exclusive of PLUS loans) grew more than tenfold from $4.3 million to $49.5 million (Federal Student Aid). The number of borrowers in those years grew from 1,900 to 9,800 (TG, 2014). Because the rate of increase in student loan volume greatly outpaced the 60 percent growth in enrollment over the same period, it suggests that a much higher proportion of ACC borrowers began taking out loans. According to the IPEDS Data Center, the percentage of full-time, first-time undergraduates receiving loans grew from 6 percent to 39 percent between AY 2001 and AY 2010 (National Center for Education Statistics). Borrowing amounts ballooned as well. The cumulative median indebtedness of borrowers exiting ACC grew from $4,500 in FY 2000 to $6,125 in FY 2008 (TG, 2010).[4] In short, over the first ten years of the century, ACC enrolled increasingly greater numbers of students with increased chances of borrowing loans at higher per-borrower levels.

Not surprisingly, as more students borrowed, more borrowers defaulted. The official number of ACC borrowers entering repayment meandered within a relatively narrow range between FYs 1995 and 2003 (between 1,394 and 1,774 borrowers) before beginning a fairly steady march upward to 4,626 borrowers by FY 2010. The number of borrowers who defaulted on their loans within the two years after entering repayment grew quickly as well, from 76 for the FY 2004 cohort to 708 for the FY 2010 cohort (Federal Student Aid). (The cohort is the group of borrowers entering repayment in a given year.)

The rates at which borrowers defaulted also increased, although such an increase need not follow as a necessary consequence of the growth in borrowing. The FY 2004 cohort of borrowers had a 4.0 percent default rate within two years of repayment. By the FY 2010 cohort, the official two-year default rate had reached 15.3 percent. However, there is not a consistent relationship between increasing participation in the federal student loan programs and increases in cohort default rates. As evidence, ACC also had double-digit default rates during the mid- to late-1990s when enrollments and borrowing occurred at considerably lower levels than today. As a more specific example, the number of borrowers in the repayment cohort grew by 25 percent between FYs 2003 and 2004, but the two-year default rate dropped from 8 percent to 4 percent between those years (Federal Student Aid). Although the growth in borrowing at ACC might help explain recently higher default rates, the ripple effects of the 2007-2009 recession probably had more influence in raising default rates.

PRIOR RESEARCH ON THE FACTORS RELATING TO STUDENT LOAN DEFAULT

The national two-year cohort default rate on federal student loans peaked in 1990 at 22.4 percent (Federal Student Aid, 2011). This high level of defaults led to a proliferation of research into the characteristics associated with student loan default in the 1990s and early 2000s. This large body of research established a base of consistent findings which is summarized in the first two paragraphs below. This is followed by a summary of the current research in the area of developmental education.

A student's performance in college has consistently been found to be the strongest predictor of a student's future default. Students who graduate or complete their program of study are significantly less likely to default than students who do not earn a degree (Dynarksi, 1994; Knapp & Seaks, 1990; Meyer, 1998; Nguyen, 2012; Podgursky et. al., 2000; Volkwein & Szelest, 1995; Volkwein et. al., 1995; Wilms, Moore & Bolus, 1987; Woo, 2002). Other college success variables which have consistently been found to reduce the likelihood of default are grade point average (GPA), full-time enrollment, and continued enrollment (Christman, 2000; Harrast, 2004; Steiner & Teszler, 2005; Volkwein et. al., 1995; Volkwein and Szelest, 1995).

Background characteristics such as race, age, gender, and socioeconomic status (SES) have also been studied in detail. Students who are not Caucasian are consistently found to have higher default rates than their Caucasian counterparts (Dynarksi, 1994; Harrast, 2004; Knapp & Seaks, 1990; Podgursky et. al., 2000; Volkwein & Szelest, 1995; Volkwein et. al., 1995; Wilms, Moore & Bolus, 1987; Woo, 2002). In general, variables indicating a lower SES (lower family income, lower parental education level, and higher numbers of dependents) are related to a higher probability of default (Choy & Li, 2006; Dynarksi, 1994; Knapp & Seaks; Volkwein & Szelest, 1995; Volkwein et. al., 1995; Wilms, Moore & Bolus, 1987; Woo, 2002). Older students and male students tend to have higher default rates than their younger, female counterparts (Podgursky et. al., 2000; Volkwein et. al., 1995; Woo, 2002). However, some studies have also found no significant relationship between gender and the probability of default (Harrast, 2004; Knapp & Seaks, 1990; Volkwein & Szelest, 1995).

Nationally, about one-third of first-year undergraduates are required to take at least one developmental education course. At community colleges, the rate is even higher, with 40 percent of first-year students requiring remediation (National Center for Education Statistics, 2012). While little, if any, research has focused on the relationship between taking developmental education classes and student loan default, there is a growing body of research relating developmental education to college completion and persistence, both of which are highly correlated with default rates.

4 According to ACC's School Cohort Default Rate Report for FY 2010, the median indebtedness associated with borrowers in the study, who left school in 2009 and 2010, is $5,750.

Many researchers have found that enrolling in developmental education classes has a positive impact on educational outcomes in general, but rarely on completion rates. Bettinger and Long (2004) found that Ohio students who enrolled in developmental education classes were more likely to persist in college and complete an undergraduate degree than similar students who did not take such classes. These same authors (2005) found that remedial math students at Ohio community colleges completed more credit hours and were significantly more likely to transfer to a four-year institution than their similarly underprepared peers. Several other studies have found increased persistence in college for those students who enrolled in developmental education classes (Domina et. al., 2006; Lavin et. al., 1981; Moss & Yeaton, 2006). However, these studies also found no measurable impact on completion rates. Other studies are less encouraging. Calcagno and Long (2008) found that Florida students who enrolled in developmental classes were more likely to persist into their second year of college than students who did not enroll in the classes, but the authors found no impact on degree completion for these students. Martorell and McFarlin (2007) found no impact on a wide variety of outcomes for Texas students enrolled in developmental education classes.

METHODOLOGY FOR ANALYSIS OF DEFAULTERS AT ACC

The sample for this analysis is the group of 4,621 borrowers who took out federal student loans for enrollment at ACC and entered repayment on those loans during FY 2010 — that is, between October 1, 2009 and September 30, 2010. The official record of the borrowers who entered repayment during this time span is the School Default Rate History Report (SDRHR) from the Department of Education's National Student Loan Data System (NSLDS). This report was used to define the sample. The sample includes only loans taken by students for their own enrollment and, therefore, excludes loans their parents obtained on their behalf (i.e., parent PLUS loans for dependent students). Furthermore, the definition of the sample and the formation of variables did not consider information related to the private education loans that students might have borrowed for their enrollment.

The outcome of interest is whether these borrowers defaulted on any of their loans by September 30, 2012. This outcome is identical to the definition of the three-year cohort default rate calculated by the U.S. Department of Education for purposes of assessing performance within the federal student loan programs. The default status of each borrower is determined through reference to data fields within the SDRHR.

The goal of the study is to determine the relationship between borrower characteristics and whether borrowers defaulted. Toward this goal, ACC provided TG with a large amount of information related to the borrowers in the sample. The information includes student grades, aid amounts, family descriptors from the FAFSA (marital status, adjusted gross income, and student family size), developmental education status, results of state preparedness assessments, as well as completion, transfer, and re-enrollment indicators.

TG used the provided data to construct variables that reflect borrower characteristics and performance measurements at two stages during borrower enrollment. One set of variables portrays borrower status at the end of the first semester. (Note that different borrowers could have begun their enrollment at different points in time, perhaps many years apart, but entered repayment around the same point in time.) The other set of variables describes borrower status upon leaving ACC.[5] The authors saw the first set of variables as contributing to a possible "First-Semester Model" and the second set of variables as potentially describing an "Exit Model." However, for reasons given below, the remainder of the paper will concentrate on results related to the "First-Semester" variables, with several exceptions.

To determine the statistical relationship between borrower characteristics and default behavior, TG employed logistic regression modeling. Logistic regression is a categorical data analysis technique for examining discrete outcomes, such as default behavior, in which outcomes can assume one of two or more classes, like defaulting or not defaulting. The statistical analysis proceeds by determining the relationships between borrower characteristics and default behavior within a past population of borrowers for which the default outcome is now known. The result of the analysis is a set of coefficients or weights. The sign (plus or minus) of a coefficient indicates whether the presence of the characteristic increases or decreases the likelihood of default, and the size of a coefficient generally reflects the strength of the relationship between the characteristic and the occurrence of default. This approach makes it possible to make statements about the analyzed behavior that possess an intuitive appeal, such as "borrowers who land a job within their field of study within a month after graduating have a probability of defaulting that is 15 percentage points lower than other borrowers." (Note: this is not a real finding and is provided for illustrative purposes only.)

Estimating the statistical models demonstrated that similar variables are important in both the First-Semester and Exit Models. To minimize redundancy, the researchers made a choice to limit discussion of model outcomes to the First-Semester variables when forms of the same variable appeared in both models. However, the authors give special consideration to a couple of variables that are unique to the Exit Model — completion status and total amount of borrowing.

5 Borrowers might have exited ACC several times. For the purposes of this study, the relevant exit from ACC is the one that caused the borrower to enter repayment on his or her federal student loan(s).

Two versions of the First-Semester Model were developed. One version includes all theoretically-important variables that the authors could develop from the data sources provided by ACC.[6] The second version of the model is a reduced form of the first version, containing only a subset of the variables that had a statistically significant relationship to the default outcome.[7] Coefficients for the reduced model were determined after excluding insignificant variables from the first version of the model. The body of this study will primarily describe the results of the reduced form of the First-Semester Model. Appendix A describes the reduced and full First-Semester Models, their coefficients, and statistical tests.

DESCRIPTION OF THE SAMPLE

Before describing the results of the logistic regression analysis, it would be helpful to take a closer look at the sample. As stated previously, the borrowers in the sample share the attribute of having entered repayment during federal FY 2010. But borrowers differed in terms of the first semester for which they borrowed.[8] While most borrowers first took out loans for enrollment in fall 2007 (14 percent), fall 2008 (28 percent), or fall/spring 2009 (32 percent), nearly 20 percent first took out loans for enrollment prior to fall 2007. It is important to note, however, that borrowers might have enrolled at ACC in years prior to the enrollment periods indicated by the cohort loans. In fact, records show that nearly half of borrowers in the sample had taken ACC courses before fall 2007,[9] despite the fact that only 20 percent had borrowed loans for those periods of enrollment.[10]

Borrowers also appear to differ greatly in the educational experience they bring to ACC. According to the "first time in college" indicator provided by ACC, 15 percent of borrowers in the repayment cohort were attending college for the first time. A little over 4 percent had already attained a bachelor's or associate degree. Another 7.6 percent possessed documentation of a General Educational Development (GED) instead of a high school diploma.

As stated in the Background section, ACC serves many students who are simply underprepared for college study. During the first semester for which they took out a loan, nearly a third (31 percent) of borrowers in the sample failed to meet the state standard in math, 8.6 percent failed to meet the standard in reading, and 5.8 percent came up short in writing.[11] Eighty-five percent of borrowers who fell short of one of the standards took developmental education courses in their first financed semester. Of these borrowers, 38 percent passed all of their developmental education courses with a grade of A, B, or C. Twenty-nine percent withdrew from at least one of their classes, and another 21 percent failed at least one of their courses.[12]

From a different perspective, these statistics understate the connection between borrowing and developmental education: in fact, over 59 percent of borrowers in the cohort took developmental education *at some point* prior to entering repayment. There is an obvious gap between this figure and the previously-stated 31 percent of borrowers who failed to meet the state math standard for the first semester for which a loan was taken. This gap is attributable to borrowers who were required to take developmental education at ACC in the years prior to obtaining their cohort loans.[13]

The foregoing discussion suggests that many borrowers had enrolled at ACC prior to taking out loans. While 47 percent of borrowers did not enroll during previous periods, the other 53 percent took a course in at least one semester prior to taking the loans in the sample.

6 Note that it was possible to develop many similar forms of the same variable. In addition, many explanatory variables otherwise correlate with each other and also overlap in how they explain variation in default behavior. During a variable reduction stage of the analysis, the study researchers selected individual variables to represent groups of overlapping variables.

7 Variables had statistical significance if the test statistic had a p-value below 0.05.

8 This is the first semester of enrollment financed by loans associated with the FY 2010 repayment cohort.

9 The precise proportion is 47 percent.

10 At any rate, only 20 percent had borrowed for those enrollment periods AND entered repayment on those loans during FY 2010. In other words, some borrowers might have taken out loans for earlier enrollment periods and entered repayment on those loans during prior cohort years.

11 These percentages reflect the borrowers' statuses just prior to the earliest enrollment periods associated with the borrowers' cohort loans. About 32 percent of borrowers failed to meet Texas standards in one or more subject areas.

12 Failure is defined as a grade of D or F. The remaining 12 percent of developmental education students remain in an 'In-progress' status.

13 The referenced gap also includes some borrowers who initially received waivers for the purpose of taking non-degree coursework but were later obligated to take developmental education to meet degree requirements.

Nearly a quarter of eventual borrowers enrolled for only one or two terms before borrowing. But about 30 percent enrolled for three or more terms, and 10 percent attended for at least seven terms. About two-thirds of borrowers in the cohort enrolled at either ACC or some other institution prior to enrolling for the periods associated with the cohort loans, suggesting that most borrowers had at least some prior experience in postsecondary education.

In fact, the enrollment periods in this study appear to represent a brief snapshot of the total educational experience of many borrowers. The data indicate that 43 percent of borrowers in this sample re-enrolled at ACC after entering repayment on these loans, and another 19 percent transferred to some other postsecondary institution after beginning repayment. In other words, a total of 62 percent of borrowers continued their educations in some form after having exited ACC and entering repayment. This high rate of exiting and returning to school dramatizes the importance of making borrowers aware of the consequences of entering repayment prior to meeting their educational goals. It also underscores the importance of the remedies available to borrowers — in the way of in-school deferments, for example — if they return to school to complete their programs.

Although many borrowers stopped out for periods of time prior to returning to ACC (or some other institution), other borrowers dropped out of ACC without ever returning. Forty-six percent of borrowers did not enroll for study at ACC within 120 days after the end of the first enrollment period for which they borrowed. Although 18 percent of these borrowers did eventually enroll for study at ACC at some later point, and 25 percent moved on to enroll somewhere else, the remaining 57 percent never re-enrolled anywhere, as far as the data show. (Incidentally, about 4 percent of the borrowers who never re-enrolled had completed their programs of study.)

Although clearly everyone in the sample borrowed loans, they differed both in their patterns of borrowing and in their use of other financial assistance. During the first semester of attendance, 46 percent of the borrowers took out both subsidized and unsubsidized Federal Stafford loans, another 14 percent borrowed only unsubsidized loans, and the remaining 40 percent took out only subsidized loans. Eighty-one percent of the sample borrowed some amount of subsidized loans during their first semester,[14] suggesting that the vast majority of ACC borrowers exhibited some financial need. In addition, 55 percent of the students also borrowed some amount of unsubsidized loans, indicating that, for many, the subsidized Federal Stafford limit did not satisfy all of their borrowing needs. Fifty-five percent of borrowers received both a subsidized Federal Stafford loan and a Pell grant during their first semester, while another 26 percent received a subsidized Federal Stafford loan but not a Pell award for that first term.

Borrowers also differed in the total amount of their borrowing. Given the short tenure of many borrowers in the cohort, it is not surprising that 10 percent borrowed $2,500 or less. But another 10 percent borrowed $15,000 or more. The median amount borrowed was $5,750. The middle 50 percent of borrowers took out between $3,500 and $8,860 in loans. And the maximum amount borrowed was $31,396.

Borrowers performed differently in the coursework they took during the first semester for which they borrowed. Twelve percent of borrowers had a GPA of zero during the first semester; another 14 percent had a GPA higher than zero but lower than 2.0; and just over a quarter had a GPA between 2.0 and 2.5. Forty percent of the borrowers had a GPA higher than 2.5. The remaining borrowers (8 percent) had no GPA, indicating that they likely withdrew from all of their first-semester coursework. As the paper will show later, first-semester GPA is strongly correlated with whether a borrower defaults.

14 Using ACC student loan records, it was not possible to determine the type of borrowing (subsidized versus unsubsidized) for five percent of borrowers during the first semester.

The following table shows the breakdown of borrowers by gender, age, ethnicity, and other characteristics:

Characteristic	Proportion
Gender	
Female	59%
Male	41%
Age (at beginning of semester for first loan)	
21 years or younger	38%
22 to 25 years	22%
26 to 30 years	19%
31 years or older	21%
Ethnicity	
White	51%
Black	15%
Hispanic	24%
Missing/other	9%
Residency status	
In-district	68%
Out-of-district	25%
Out-of-state	3%
Missing	4%
Enrollment status	
Full-time	39%
Part-time	57%
Unspecified	4%
Completion (as of June 2013)	
Completed associate degree	9%
Degree not completed	91%
Completion (first-time students in sample)	
Completed associate degree	3%
Degree not completed	97%

RESULTS OF THE REGRESSION ANALYSIS

First-Semester Model

The First-Semester Model describes variables whose values can be determined by the end of the first semester of enrollment and relates these variables to the probabilities that borrowers will default on their student loans. The authors developed this model to leverage information that exists early in the borrowing experience of students in order to help colleges identify those borrowers whose possible risk of default might warrant additional loan or debt counseling. Models that incorporate information over longer periods of borrowing and school attendance also have their advantages, and this paper will address some interesting findings from an "Exit Model" in a later subsection.

Grade point average (GPA)

Prior TG research has suggested a strong connection between a borrower's GPA and default, and the result is no different for ACC. No other variable that the researchers developed from ACC data sources had a stronger relationship to future default behavior. In general, the lower the borrower's GPA, the more likely he or she is to default. More specifically, for borrowers with GPAs of zero at the end of the first semester of enrollment (12 percent of borrowers), the probability of default was 13 percentage points higher than it was for borrowers who had GPAs of at least 3.5. Borrowers with GPAs between 0.5 and 1.5 (14 percent of borrowers) had chances of default that are 8 percentage points higher than borrowers with the top GPAs. These results are consistent with using a GPA cutoff of 2.0 for a satisfactory academic progress (SAP) policy, and they prompt the question of whether ACC can use its existing policy for default aversion purposes. The Discussion section of the paper will explore this and related questions.

Whereas previous analyses have considered the cumulative GPAs of borrowers at the time they leave their educational institutions, the variable in this study represents the GPA of borrowers for the first semester of enrollment only. There is admittedly a nontrivial correlation between the two, given that the first semester was the final semester for about 26 percent of borrowers in the sample. Nevertheless, the current form of the variable conforms more closely to the operational necessities of the school, giving ACC a better chance to incorporate the finding into default aversion efforts.

Amount of Pell grant

Borrowers who received a Pell grant during the first semester of enrollment had higher probabilities of default. Although borrowers who received a grant of $1,045 or less had only marginally increased chances of default (about 2 percentage points) than borrowers who did not receive a Pell grant, borrowers who received a grant of more than $1,045 had a likelihood of default that was 7 percentage points higher than borrowers who did not get a Pell grant.

Student aid researchers often use Pell grant receipt as a proxy for the need status of students. Although this approach makes sense, it is less clear how financial need increases the probability of student loan default. Although it is not within the scope of this study to state strong conclusions about causality, the Discussion section will consider the meaning and utility of this finding.

Developmental education

As stated in the Background section, students in Texas must demonstrate preparedness for college education before they can engage in coursework required for their degree programs. Students who do not meet or exceed minimum test scores on state-approved tests in math, reading, and writing and who do not obtain exemptions (usually based upon SAT/ACT/TAKS test scores or prior college attendance) are mandated to perform developmental education coursework in the areas in which they do not meet standards. Some students who must perform developmental education work also borrow for the periods of enrollment in which they undertake that work, and they comprise a significant portion of the sample for this study (see the Description of Sample section).

The results of the First-Semester Model indicate that borrowers who were mandated to perform developmental education work in math had chances of default that were 4 percentage points higher than borrowers who satisfied preparedness standards in math. In addition, borrowers who had requirements to undertake developmental education efforts in reading were 3 percentage points more likely to default than borrowers who had met standards in reading. These conditions are additive, such that a borrower who was required to undertake developmental education in both areas was 7 percentage points more likely to default than a borrower who had met state preparedness standards in those areas. This is not a trivial point, since most borrowers who are required to engage in developmental education in reading have also failed to meet the math standard.

Gender

A frequent finding of student loan default research is that women are less likely to default than men. That is also the result of the current study. For borrowers who are otherwise the same with respect to the variables in the model — for example, among borrowers who had the same GPA, Pell grant amount, developmental education status, etc. — men were, on average, significantly more likely to default than women. In particular, when evaluated at the baseline (intercept) of the model, a male was about 4 percentage points more likely to default than a female.

The authors further found that in virtually every subcategory that the study variables define, women had lower default rates than men. For example, within most programs of study at ACC, women had lower default rates. Also, among both borrowers who completed their programs of study and those who did not finish their programs, women had lower default rates. In addition, women had lower default rates at each level of GPA. For example, among borrowers who had a zero GPA during the first semester, men had a 52 percent default rate, while women had a 31 percent default rate. Although the differences were less dramatic at other GPA levels, men nevertheless always had the higher default rate.

Other variables in the reduced model

Several other variables had statistically significant associations to default behavior, but they were not strong predictors of whether a borrower defaults. Borrowers who entered ACC with a General Educational Development credential (GED) were somewhat more likely to default than borrowers who had high school diplomas. However, less than 8 percent of the sample had GEDs. Likewise, borrowers who were permanent residents had lower chances of default than U.S. citizens but represented only about 4 percent of the cohort borrowers. Out-of-district and out-of-state borrowers had only slightly lower likelihoods of default relative to in-district borrowers.

Full model

Appendix A shows the results of the *full* First-Semester Model. That version of the model includes not only the variables just described, but additional variables with a hypothetical relationship to default that nevertheless did not prove to have statistical significance. Among the variables that had no demonstrable relationship to default are the age of the borrower, the educational level of the borrower's parent, the amount the student borrowed for the first semester, the borrower's ethnicity, and the borrower's intent for pursuing study at ACC.

Program of study

Although the borrower's program of study is theoretically attractive for explaining observed differences in default behavior, it presents substantial problems for regression techniques like the one used in this study. Instead, the authors have confirmed that a simplified version of the program of study variable would not alter the results and inferences related to the variables described above. However, since program of study is potentially informative about default behavior, Appendix B lists the default rates of ACC's various programs of study.[15]

Exit Model

By the time borrowers leave ACC, there are more indicators of how they funded their educations and how successful they were in their courses and programs than existed at the end of the first semester. Interestingly, though, in many cases the measurements that exist at the conclusion of the initial term are as successful in predicting default as similar measurements that one can make when borrowers exit ACC. An interesting example concerns GPA. The GPA for the first term of enrollment is about as good at explaining default behavior as the cumulative GPA over the whole period related to a student's loan borrowing.

Nevertheless, the Exit Model reveals at least two important insights that the First-Semester Model cannot provide. First, the total amount borrowed has a statistically significant relationship to default behavior. Students who borrowed small amounts had the highest default rates. This outcome is unsurprising since low borrowing amounts often indicate that borrowers left college before progressing very far, thereby increasing their risk of default relative to borrowers who attended longer. But borrowers with the largest amounts of borrowing had the next highest chances of defaulting. Borrowers with moderate debt loads — in the range of $2,500 to $4,000 — had the lowest probability of default.

Second, program completion at ACC greatly lowers the chances of default. Or, conversely, a borrower's failure to obtain a certificate or associate degree greatly increases the likelihood of default, regardless of whether the borrower was a degree-seeker in the first place. These results are generally in line with the findings of many prior default studies. Taken together, these two findings suggest that borrowers are likely to be successful in repaying their loans if they are successful in their programs of study. In addition, the results imply that improvements in completion rates are likely to translate to decreases in default rates. Nevertheless, this finding is probably not useful for targeting at-risk borrowers, given that 85 percent of the borrowers in the sample had failed to complete their certificates or degrees by the time they entered repayment on their loans.

15 In the past, students were able to declare majors in some programs of study, like nursing, without having performed substantial coursework in the area of study. Therefore, the association between program of study and default rate is suggestive, rather than definitive.

DISCUSSION

Frequently when college administrators consider implementing supplemental loan counseling or default prevention policies that exceed regulatory requirements, the usual deliberative process considers whether to apply the new policies to all borrowers or none at all. This "all or nothing" approach to policy development is effectively equivalent to assuming that all borrowers share the same likelihood of default, even when college officials know this is not the case.

Whatever the reasons for this seemingly common approach — whether administrators want to avoid being perceived as providing preferential treatment to one group versus another or whether they simply lack the guidance or money for targeting differential treatments — the outcome is predictable. Unless the solutions being weighed are low-cost, the total cost of providing them to all borrowers is likely to be high (or at least perceived to be high). This cost consideration naturally serves as a major hindrance to policy change and improvement. Therefore, frequently the result of "all or nothing" thinking in this context is that nothing will be done. Too often, the unfortunate (if unintended) consequence of doing nothing is that the people who would most benefit from getting help do not get the assistance they need.

Risk analyses, like the one embodied by the current study, suggest the opportunity to move the basis of policy change to a "some or nothing" paradigm. Better to provide at least some people with access to new default aversion and loan counseling solutions than to have nobody benefit. But how does one choose who gets access? This research implies that solutions should be delivered to the borrowers who would be most likely to suffer negative consequences in the absence of the new policies and procedures.

Two sets of findings in the study are particularly suited for driving changes in default aversion and loan counseling practices at postsecondary institutions — namely, the results associated with GPA and developmental education. There are several reasons for this. First, these factors represent two of the three strongest associations to default behavior in the study; in other words, they are more effective at isolating high-risk groups of borrowers than most other variables that are readily available to colleges.

Second, GPA tracking and remedial education status are already integral to important institutional processes that are dedicated to determining degree progress, financial aid eligibility (through the enforcement of SAP policies), and eligibility to take credit-bearing courses. This means that the measurements needed to target new interventions and strategies are routinely being taken and are enmeshed within the systems that support the core functions of the schools. Delineating groups of borrowers according to GPA and remedial education status would therefore not be controversial, and directing solutions and services to such groups would not likely be met with resistance based upon the manner in which individuals are selected into the groups.

Third, many colleges provide training to students based upon their GPA and developmental education status. Therefore, it is unlikely that providing supplemental training or counseling to borrowers in risk categories based upon the study findings will take postsecondary institutions out of their comfort zones. In fact, it plays to the core strengths of the institutions and raises the chances that new efforts will be successful.

Consider the possibilities of using GPA as a means of identifying high-risk subpopulations that could benefit from new interventions. GPA is already an important component of ACC's SAP policy, which requires students to maintain a cumulative GPA of 2.0 or higher to remain eligible for financial aid. Because the GPA categories defined by this study align closely enough with the SAP GPA standard of 2.0, the current GPA measurement process could trigger not only SAP consequences but also loan-specific interactions between the college and high-risk borrowers. For example, students in a SAP warning status at ACC typically attend Student Success Workshops. In recognition of the higher default risk of borrowers who already attend the workshops, perhaps ACC could include instructional material related to basic financial literacy and student loans. ACC could introduce these concepts within the context of goal-setting, planning, and time-management, delivering the message that faithfully following a plan will shorten the time to achieve pre-set goals, thereby lowering the cost of instruction and the total amount of student loan debt.

Of course, ACC could use GPA as a mechanism to direct any intervention it wants toward high-risk borrowers, including in-person debt counseling. Individualized counseling has a better chance than workshop attendance of molding the specifics of financial aid guidance to the particular situations of each borrower, possibly amounting to a more effective default aversion tool. It is worth noting that provision of such labor-intensive counseling might require the financial aid office to employ a full-time default coordinator who is dedicated to loan and debt counseling. However, one way to reduce costs might be to set the threshold for in-person debt counseling to a level below the SAP standard: for example, provide such counseling only to borrowers with a GPA below 1.5.

Measuring GPA at the end of a semester to trigger interventions has a major shortcoming: the borrowers with the lowest GPAs are may have left the institution altogether. As mentioned earlier, a large number of borrowers do not return to ACC after leaving. And although many others do come back, their return might occur after months or years. Therefore, an effective default aversion policy that uses GPA

will have to contend with the issues surrounding some students' interrupted academic progress. One solution to this problem might be to engage in timelier monitoring of students' GPAs and class attendance so that the college can identify problems and address risks as early as possible, before the borrower stops attending classes. Naturally, the success of such an approach might depend upon greater coordination between course instructors, the registrar, and the financial aid office.

Although it should be effective to link interventions to the cumulative GPAs that SAP policies typically employ, a college could use alternative GPA formulations. For example, this study measured GPA within a single semester. One advantage of a single semester measurement is that it can serve as a warning indicator for any student at any point along his or her educational journey. For example, a student who has a cumulative 4.0 GPA at the beginning of the fourth semester of attendance might still have a 3.5 cumulative GPA at the end, even after achieving only a 1.0 GPA for the courses taken during that fourth semester. The cumulative GPA makes it appear as if the student is not having any serious issues, but the single semester GPA brings that judgment into question.

For the reasons stated earlier, a college could also readily use the developmental education status of borrowers as a way of identifying groups of borrowers with relatively high likelihoods of default. In support of such a strategy, this study demonstrates that borrowers who fail to meet Texas standards for college preparedness, especially in mathematics, are at a higher risk of student loan default. Since ACC and many other postsecondary institutions already have extensive processes in place for assessing the remedial needs of students and for providing the necessary educational resources, it might be possible to improve student loan repayment outcomes by making relatively minor adjustments to existing practices.

One possible way to mitigate the default risk of this population is to introduce student loan-related material into developmental math courses. This integration would not have to take the form of overt financial aid counseling, such as describing the consequences of loan default, but it could. At the very least, loan concepts could be suggested through solving math problems related to student loans, such as calculating payments based upon principal and interest rate assumptions. To personalize the math problems, the instructor could ask the students to use data points associated with their own borrowing. Since this problem-solving would often occur during the first or second semester of attendance, the instructor might ask the students to imagine how much they would borrow over the whole course of their educations, as opposed to the relatively small amounts they had borrowed to that point. Of course, the exercise could also be expanded to include other topics, such as student financial budgeting, which is relevant to students regardless of whether they borrow for their educations. Among the advantages of this approach are (1) that ACC could reinforce loan concepts for at-risk borrowers before they exit the institution (without knowing ahead of time who is going to exit early) and (2) that instructors could make connections between important math concepts and the real-life concerns of students.

Another approach might be to use the remedial education status of students to target some borrowers for additional in-person entrance counseling. Although all borrowers would, at minimum, receive the components of entrance counseling required by regulation (or whatever minimum the institution establishes above the regulatory requirements), ACC could provide borrowers in developmental education with supplemental counseling, such as helping them to develop student budgets. Counselors could obviously cover other topics related to loan repayment, education finance, and debt management. Like the suggestions in the previous paragraph, the targeting of supplemental counseling uses a status that is known before the students register for courses to deliver important pieces of loan-related information to borrowers before they leave the institution, without knowing precisely who might leave at an early stage. At the same time, it rations limited resources to the borrowers who would most likely benefit from them, as opposed to expending those resources on a much broader group of borrowers, many of whom have a low risk of default.

Aside from counseling solutions and instructional strategies, lowering the cost and shortening the time of remediation could alleviate some of the need for students to borrow in the first place. A strategy for lifting the burden of remediation is to modularize developmental education instruction: allow students to bring their skills up to standard in only the math areas for which they demonstrated a deficiency, as opposed to requiring the students to work through and pay for instruction in areas in which they have already established competency. Although modularization clearly incurs some upfront costs in fundamentally modifying the approach to remediation, it can also deliver substantial benefits by reducing the longer-term costs of remedial instruction and by improving the outcomes of developmental education, both academically and in terms of student loan default.

The study's finding related to Pell grants does not lend itself as neatly to the task of targeting loan counseling, since unlike GPA (under SAP rules) and developmental education status, institutions have not already set up separate training programs for Pell grant recipients. But the finding does raise the question of what relationship the need status of a borrower has to default outcomes and to student loan counseling. If Pell grant recipients are more likely to default on their loans because they tend to come from backgrounds with less experience in borrowing, the provision of supplemental entrance counseling, for example, might help compensate for that lack of experience. Likewise, if Pell grant

awards signal that recipients are simply much more likely than other borrowers to have large amounts of unmet need, prompting students to cover their shortfalls with both increased borrowing and a tendency to work longer hours, then those recipients might benefit from guidance on study skills, goal setting, and time management. Although more research into this issue might be required in order to craft the most effective solutions, colleges might be wise to start weighing their options for mitigating the default risk of Pell grant recipients, given that there appears to be a strong link between need status and probability of default.

At a school like ACC, however, the majority of student loan borrowers are Pell grant recipients. This fact represents another way that Pell grant status is different from both GPA and developmental education status as a basis for focusing supplemental counseling efforts on high-risk borrowers. Because the targeting would not define a narrow risk pool, it lessens the emphasis that administrators can place on the relative affordability of it, compared to providing a potential new service to everyone.[16] However, one strategy for making additional progress in assisting borrowers who receive Pell grants, or for any other large group of borrowers who have a heightened risk of default, is to encourage them to access tools and information resources that are relatively low-cost, such as online sources of financial literacy training as well as consumer information related to educational and career outcomes. Fortunately, a growing number of interested third parties has stepped up to provide many of these resources free-of-charge, thereby completely eliminating the development cost of the tools.[17] In adopting these resources, schools merely incur the modest cost of promoting them through email, text, word-of-mouth, and the institution's website. For that matter, colleges might reap better outcomes simply through better promotion of the resources they already provide.

The common theme throughout this discussion, and throughout the study generally, is that borrowers differ from one another in their student loan default risk, and that some of these differences can be identified early in the educational journey. Through early identification of risk, administrators can tailor a variety of interventions — including entrance counseling, skills workshops, and inclusion of loan topics in remedial coursework — so that the borrowers who most need assistance will get it, and the borrowers who least need assistance can proceed without it. In this way, an institution can apply its limited resources more effectively than it could by treating all borrowers as if they had the same chances of defaulting on their student loans. A college like ACC can thereby selectively pursue reasonable solutions that they could not afford to apply to all borrowers generally.

16 Many Pell grant recipients would still receive supplemental counseling or instruction as a result of interventions based upon GPA and developmental education status. Nearly half of ACC borrowers receiving Pell grants would fall into the risk groups defined by these other two variables.

17 In fact, if intervention costs are reduced to low enough levels, the school has little reason not to provide the solutions to all borrowers.

Appendices and References

Appendix A

REGRESSION RESULTS

The analysis produced default models containing the variables listed in the tables below. The tables list each variable, its reference group, the coefficient, and the delta-p (change in probability), each of which will be explained below.

The estimation process produces a coefficient for each variable. The sign (positive or negative) of a coefficient indicates whether the presence of the variable increases or decreases the likelihood of default, and the size of a coefficient generally reflects the strength of the relationship between the variable and the occurrence of default. For example, any grade point average (GPA) below 3.5 is associated with an increase in a borrower's chances of defaulting (since the coefficients are all positive). Moreover, as GPA decreases, the probability of default increases (since the coefficients are larger for lower GPA categories). In contrast, being an out-of-district student at ACC is related to a lower likelihood of default (since the coefficient for this variable is negative).

The presence of asterisks next to a coefficient indicates that the variable has a statistically significant relationship to default behavior. Statistical significance means that there is a relatively high confidence that a relationship really exists — that the size of the coefficient did not result from the peculiarities of the study sample. The more asterisks there are, the higher the level of confidence that a true relationship exists between a variable and default behavior. Thus, whereas all the variables based upon college GPA have a statistically significant relationship to default, the variable indicating that a borrower had a waiver for developmental math education does not have a statistically significant relationship.

Unfortunately, the coefficients are difficult to interpret in their raw form. In order to more easily understand their meaning, it is necessary to convert them to another form. The delta-p represents the percentage point change in the probability of default given the presence of a characteristic. For example, a male borrower has a probability of default that is 4 percentage points higher than a female borrower. Compared to a female borrower who has only the baseline probability of default of 7 percent (the probability associated with the intercept of the regression model), a male borrower would have an 11 percent chance of default (7 percent + 4 percent). Delta-p statistics are only provided for variables that are statistically significant.

A reference group is required for interpreting the variables used in this analysis. Consider the group of GPA variables. Borrowers who withdrew from all coursework during their first semester have a likelihood of default that is 7 percentage points higher than borrowers who obtained a GPA of 3.5 to 4.0, who belong to the reference group. Similarly, borrowers who achieved a GPA of 0.0 have a probability of default that is 13 percentage points higher than borrowers who scored a GPA of 3.5 to 4.0 (the reference group).

First-Semester Model — Reduced Variable Set

The following table shows the regression results for variables that describe the status of borrowers at or before the end of the first semester for which loans were obtained. This regression model contains only the subset of variables that have strong, statistically significant relationships to default behavior.

Variable Group	Variable	Reference Group	Coefficient	Delta-p (Change in probability)
Intercept			–2.63 ***	
GPA at the end of the first semester (rounded to nearest 0.5 points)	Withdrawn from all classes 0.0 0.5 to 1.5 2.0 to 3.0	3.5 to 4.0	0.79 *** 1.23 *** 0.87 *** 0.45 ***	7% 13% 8% 3%
Amount of Pell grant during first semester	$104 to $1,045 $1,046 to $2,675	$0	0.27 * 0.76 ***	2% 7%
Gender	Male	Female	0.46 ***	4%
Math developmental education	Mandated Waived	Exempt or passed test	0.55 *** 0.19	4%
Reading developmental education	Mandated Waived	Exempt or passed test	0.41 *** 0.57	3%
Borrower had GED	Yes	No	0.44 ***	3%
Residency status	Out-of-district	In-district	-0.24 **	–1%
Citizenship status	Permanent resident/unknown	U.S.	-0.50 *	–3%

* Statistically significant at the 0.05 level
** Statistically significant at the 0.01 level
*** Statistically significant at the 0.001 level

First-Semester Model — Full Variable Set

The next table again shows regression results for variables that describe the status of borrowers at or before the end of the first semester for which loans were obtained. However, this model contains not only the variables in the previous table but also many variables that had a hypothesized relationship to default behavior but were not found to have statistically significant associations with that behavior. Note that none of the variables in the second two-thirds of the list are statistically significant, as indicated by a lack of asterisks next to the coefficient and no specification of a delta-p statistic. Although not shown here, most of the insignificant variables have very high p-values and would fail even the most liberal statistical tests. The standard errors and p-values are available upon request.

Variable Group	Variable	Reference Group	Coefficient	Delta-p (Change in probability)
Intercept			–2.15 ***	
GPA at the end of the first semester (rounded to nearest 0.5 points)	Withdrawn from all classes 0.0 0.5 to 1.5 2.0 to 3.0	3.5 to 4.0	0.72 *** 1.14 *** 0.80 *** 0.42 ***	9% 16% 10% 5%
Amount of Pell grant during first semester	$104 to $1,045 $1,046 to $2,675	$0	0.22 0.68 ***	 8%
Gender	Male	Female	0.48 ***	5%
Math developmental education	Mandated Waived	Exempt or passed test	0.43 *** 0.10	5%

Variable Group	Variable	Reference Group	Coefficient	Delta-p (Change in probability)
Reading developmental education	Mandated Waived	Exempt or passed test	0.33 * 0.56	4%
Residency status	Out-of-district or out-of-state	In-district	-0.24 **	-2%
Borrower had GED	Yes	No	0.36 **	4%
Race/ethnicity	Unknown Black Hispanic Asian Other	White	0.79 0.13 -0.03 -0.56 0.22	
Borrower's intent/purpose to pursue study at ACC	Complete certificate Improve job skills Job preparation (no degree) Not reported Personal interest, improve basic academic skills, other Transfer	Complete associate degree	-0.20 -0.03 0.06 0.23 0.28 0.06	
Amount of subsidized Federal Stafford borrowing during first semester	$269 to $1,249 $1,250 to $1,385 $1,386 to $1,929 $1,930 to $3,357 $3,358 to $4,500	$0 to $268	0.14 -0.14 0.08 -0.11 0.11	
Age (beginning of first semester)	21 to 30 21 to 35 36 to 40 41 or older	20 or younger	0.11 0.15 0.32 -0.04	
Student type	Traditional Unknown	Nontraditional	-0.38 -1.64	
Father's highest academic level	High school College Other	Middle school	-0.08 -0.22 -0.06	
First time in college	Yes Not available	No	0.19 0.09	
Student's marital status	Married Separated/divorced/widowed Unknown	Single	-0.20 -0.04 -0.06	
Borrower is a U.S. citizen	No - Permanent resident/unknown	Yes	-0.42	
Associate degree before ACC	Yes	No	-0.54	
Transfer hours prior to first loan	3 or more	2 or less (mostly 0)	-0.11	
Bachelor's degree before ACC	Yes	No	-0.46	
Work-study during first semester	Yes	No	0.29	
Mother's highest academic level	High school College Other	Middle school	0.00 -0.01 -0.12	

* Statistically significant at the 0.05 level
** Statistically significant at the 0.01 level
*** Statistically significant at the 0.001 level

Appendix B

DEFAULT RATES BY PROGRAM OF STUDY

Program of Study	Number of Students	Percentage That Completed Program	Default Rate
Commercial Music Management	36	11%	52.8%
Addictions Counseling Human Services	19	5%	52.6%
Child Development	25	8%	48.0%
Culinary Arts	34	12%	47.1%
Carpentry or Construction	23	13%	43.5%
Heating, Air Conditioning, & Refrigeration Tech	28	21%	42.9%
Radio-Television-Film	59	14%	39.0%
Administrative Assistant	18	6%	38.9%
Computer Information or Programming	42	12%	38.1%
Automotive	48	10%	37.5%
Business and Technical Communications	58	2%	36.2%
Medical Coding	43	5%	34.9%
Paralegal	25	12%	32.0%
Sociology	19	0%	31.6%
Psychology	151	6%	31.1%
Kinesiology	64	6%	28.1%
Computer Aided Design (CAD)	54	26%	27.8%
Drama	23	13%	26.1%
Music	50	4%	26.0%
Dental Hygiene	66	15%	25.8%
Criminal Justice	167	8%	25.7%
Diagnostic Medical Sonography	43	21%	25.6%
American Sign Language	28	25%	25.0%
English	53	17%	24.5%
Emergency Medical Services/Emergency Medical Technician	41	39%	24.4%
4–12 Grade Levels	128	5%	24.2%
Other	327	18%	24.2%
Pre-Veterinary	17	6%	23.5%
Real Estate Brokers' Licensing	17	12%	23.5%
History	30	13%	23.3%
Computer Science	57	9%	22.8%

Program of Study	Number of Students	Percentage That Completed Program	Default Rate
Journalism	44	11%	22.7%
Marketing	53	9%	22.6%
Pre-Pharmacy	37	14%	21.6%
General Studies	378	9%	21.4%
Pre-Medical	63	13%	20.6%
Nursing (Vocational)	79	24%	20.3%
Accounting	65	6%	20.0%
Health	40	20%	20.0%
Business Administration	312	10%	19.9%
Undeclared	141	16%	19.9%
Graphic Arts/Design	31	29%	19.4%
Biology	52	6%	19.2%
Management	53	15%	18.9%
Nursing (professional)	446	26%	18.8%
Social Work	64	14%	18.8%
Early Childhood	118	6%	17.8%
Diagnostic Medical Imaging-Radiology	90	20%	17.8%
Engineering (General)	71	10%	16.9%
Electronic Technology	24	17%	16.7%
General Human Services	18	28%	16.7%
Surgical Technology	25	36%	16.0%
General Studies in Science	44	11%	15.9%
Government	33	3%	15.2%
Art	47	13%	14.9%
Pre-Dental	21	14%	14.3%
Pre-Nursing	95	49%	13.7%
Anthropology	15	7%	13.3%
Occupational Therapy Assistant	15	40%	13.3%
Physical Therapist Assistant	40	18%	12.5%
Missing	211	5%	12.3%
Foreign Language	20	10%	10.0%
2D and 3D Animation and Modeling	27	22%	7.4%
Chemistry	15	13%	6.7%
Firefighter	20	70%	5.0%
Nursing Mobility Track	21	57%	4.8%

References

Attewell, P., Lavin, D., Domina, T., & Levey, T. (2006). New evidence on college remediation. *Journal of Higher Education, 77*(5), 886–924.

Bettinger, E., & Long, B. (2005). Remediation at the community college: Student participation and outcomes. *New Directions for Community Colleges*, 129, 17–26.

Bettinger, E., & Long, B. T. (2004). *Shape up or ship out: The effects of remediation on students at four-year colleges*. Cambridge, MA: National Bureau of Economic Research.

Calcagno, J., & Long, B. (2008). *The impact of postsecondary remediation using a regression discontinuity approach: Addressing endogenous sorting and noncompliance*. Cambridge, MA: National Bureau of Economic Research.

Choy, S. P. (n.d.). *Dealing with debt: 1992–93 bachelor's degree recipients 10 years later* (NCES 2006-156). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Christman, D. E. (2000). Multiple realities: Characteristics of loan defaulters at a two-year public institution. *Community College Review, 27*(4), 16–32.

Dynarski, M. (1994). Who defaults on student loans? Findings from the National Postsecondary Student Aid Study. *Economics of Education Review, 13*(1), 55–68.

Federal Student Aid. (2011). *National Student Loan Two-year Default Rates* [Graph]. Retrieved from www2.ed.gov/offices/OSFAP/defaultmanagement/defaultrates.html

Federal Student Aid. (n.d.). *Title IV Program Volume Reports* [Tables]. Retrieved from http://studentaid.ed.gov/about/data-center/student/title-iv

Federal Student Aid. (n.d.). *Two-year Official Cohort Default Rates for Schools* [Data files]. Retrieved from www2.ed.gov/offices/OSFAP/defaultmanagement/cdr2yr.html

Harrast, S. A. (2004). Undergraduate borrowing: A study of debtor students and their ability to retire undergraduate loans. *Journal of Student Financial Aid, 34*(1), 21–37.

Knapp, L., & Seaks, T. (1992). An analysis of the probability of default on federally guaranteed student loans. *Review of Economics and Statistics, 74*(3), 404–411.

Lavin, D., Alba, R., & Silberstein, R. (1981). *Right versus privilege: The open-admissions experiment at the City University of New York*. New York, NY: Free Press.

Martorell, P., & MacFarlin, I. (2010). The effects of college remediation on academic and labor market outcomes. *The Review of Economics and Statistics, 93*(2), 436–454.

Meyer, D. (1998). Predicting which borrowers are most likely to default. In J. Webster (Ed.), *Student loan defaults in Texas: Yesterday, today, and tomorrow* (pp. 16–28). Austin, TX: TG.

Monteverde, K. (2000). Managing student loan default risk: Evidence from a privately- guaranteed portfolio. *Research in Higher Education, 41*(3), 331–352.

Moss, B. G. (2006). Shaping policies related to developmental education: An evaluation using the regression-discontinuity design. Educational *Evaluation and Policy Analysis*, 215–230.

National Center for Education Statistics. (n.d.). *Integrated Postsecondary Education Data System (IPEDS) Data Center* [Query Results]. Retrieved from http://nces.ed.gov/ipeds/datacenter

National Center for Education Statistics. (n.d.). *National Postsecondary Student Aid Survey* (NPSAS:12) [Query results]. Retrieved from http://nces.ed.gov/datalab/

Nguyen, M. (2002). *Degreeless in debt: What happens to borrowers who drop out*. Washington, DC: Education Sector. Retrieved from www.educationsector.org/sites/default/files/publications/DegreelessDebt_CYCT_RELEASE.pdf

Podgursky, M., Ehlert, M., Monroe, R., & Watson, D. (2000). *Student loan defaults and enrollment persistence*. Columbia, MO.

Steiner, M., & Teszler, N. (2005). *Multivariate analysis of student loan defaulters at Texas A&M University*. Round Rock, TX: TG.

TG. (2002). *TG School Fact Sheets: Fiscal Year 2001*. Austin, TX: Author.

TG. (2010). *TG School Fact Sheets: Fiscal Year 2009*. Round Rock, TX: Author. Retrieved from www.TG.org/factsheets/schools/pdf_archiveFY09.cfm

TG. (2014). [Table depicting the number of Austin Community College students who received federal Stafford loans by academic year]. Unpublished raw data.

Texas Higher Education Coordinating Board. (2009). *Developmental education accountability measures data*. Retrieved from Texas Higher Education Data website: www.txhighereddata.org/reports/performance/deved

Volkwein, J. F., & Szelest, B. P. (1995). Individual and campus characteristics associated with student loan default. *Research in Higher Education, 36*(1), 41–72.

Volkwein, J. F., Cabrera, A. F., Szelest, B. P., & Napierski, M. (1995). *Characteristics of student loan defaulters among different racial and ethnic groups*. Paper presented at the Annual Forum of the Association for Institutional Research (AIR), Boston, MA. (ERIC Document Reproduction Service No. ED 386 972).

Wilms, W. W., & Bolus, R. E. (1987). Whose fault is default? A study of the impact of student characteristics and institutional practices on guaranteed student loan default rates in California. *Educational Evaluation and Policy Analysis, 9*(1), 41–54.

Woo, J. H. (2002). Factors affecting the probability of default: Student loans in California. *Journal of Student Financial Aid, 32*(2), 5–23.

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