

11-7-2014

Do You Know What You Owe? Students' Understanding of Their Student Loans

Emily A. Andruska

The Federal Reserve Bank of Chicago, emily.andruska@chi.frb.org

Jeanne M. Hogarth

Center for Financial Services Innovation, jhogarth@cfsinnovation.com

Cynthia Needles Fletcher

Iowa State University, cynthia@iastate.edu

Gregory R. Forbes

Iowa State University, grforbes@iastate.edu

Darin R. Wohlgemuth

Iowa State University, darinw@iastate.edu

Follow this and additional works at: <http://publications.nasfaa.org/jsfa>

 Part of the [Economics Commons](#), and the [Higher Education Commons](#)

Recommended Citation

Andruska, Emily A.; Hogarth, Jeanne M.; Fletcher, Cynthia Needles; Forbes, Gregory R.; and Wohlgemuth, Darin R. (2014) "Do You Know What You Owe? Students' Understanding of Their Student Loans," *Journal of Student Financial Aid*: Vol. 44: Iss. 2, Article 3. Available at: <http://publications.nasfaa.org/jsfa/vol44/iss2/3>

This Research Article is brought to you for free and open access by NASFAA Research Publications. It has been accepted for inclusion in Journal of Student Financial Aid by an authorized administrator of NASFAA Research Publications. For more information, please contact jacob.gross@louisville.edu.

Do You Know What You Owe? Students' Understanding of Their Student Loans

Cover Page Footnote

The analysis and conclusions set forth in this presentation represent the work of the authors and do not indicate concurrence of the Federal Reserve Board, the Federal Reserve Banks, or their staff. Mention or display of a trademark, proprietary product, or firm in the presentation by the authors does not constitute an endorsement or criticism by the Federal Reserve System and does not imply approval to the exclusion of other suitable products or firms.

Do You Know What You Owe? Students' Understanding of Their Student Loans

By Emily A. Andruska, Jeanne M. Hogarth, Cynthia Needles Fletcher, Gregory R. Forbes, and Darin R. Wohlgemuth

Emily A. Andruska is assistant supervisor analyst for the Wholesale Credit Risk Center, Risk Specialists Division, Supervision and Regulation, for The Federal Reserve Bank of Chicago.¹ Jeanne M. Hogarth is vice president of policy for the Center for Financial Services Innovation. Cynthia Needles Fletcher is a professor in the Department of Human Development and Family Studies at Iowa State University. Gregory R. Forbes is research analyst for the Office of Student Financial Aid at Iowa State University. Darin Wohlgemuth is director of enrollment research at Iowa State University.

Using a data set that augments a student survey with administrative data from the Iowa State University Office of Financial Aid, the authors posed two questions: Do students know whether they have student loans? Do students know how much they owe on outstanding student loans? We used logistic and ordered logit regressions to answer these questions. Results suggest that although the majority of students are aware that they owe on student loans, many underestimate the amount they owe. One eighth of students in the current study reported no student debt when, in fact, they had a loan. Over a quarter of the students underestimated the amount they owed by less than \$10,000, and nearly one tenth of students underestimated the amount that they owed by more than \$10,000. This article discusses the roles that counselors, educators, and policy makers can play in improving students' understanding of their student loan debt.

Key Words: *Student loans, student debt, financial literacy, student characteristics*

Student loans have been in the media and policy spotlight, especially after outstanding loan balances hit more than \$1 trillion in 2013 (New York Federal Reserve Bank, 2014). Rising debt levels and default rates, coupled with vigorous discussions about access and affordability of higher education, have made student loans front-page news. Policy debates have centered on proposals to expand repayment options and student debt forgiveness.

Few financial products used by families are as complicated as student loans. For example, the decision about how much to borrow is often bundled with the choice of college or university, and may involve a joint negotiation between parents and students as to who will do the borrowing and who will do the paying. Families often take out loans as a series of independent annual decisions rather than with any consideration of previous or subsequent loans. Interest on student loans may or may not be deferrable depending on the student's financial need, enrollment status, and post-graduate studies or job situation. Many students' lack of experience with credit or loan terms and features only magnifies this complexity.

Students often take out loans from a variety of providers, but they rarely see a comprehensive picture of their total student loan obligations, and virtually never see an estimate of the total monthly payment obligation for all of their federal and private loans.

Given the high unemployment and underemployment levels of college graduates in the aftermath of the 2007-2009 recession years, the issue of student loan delinquency and default looms large.² Default on student loan debt is especially problematic because these loans are rarely dischargeable in bankruptcy. Borrowers entering repayment face many hurdles, including complex repayment schemes. Students with multiple loans from multiple providers may find that each has different options for repayment and offers different kinds of help for troubled borrowers (Loonin and McLaughlin, 2012). Again, students' lack of experience and naiveté with complex financial products can add to the confusion about repayment options and choices.

Using a unique data set of student survey responses matched with administrative data from the student financial aid and registrar's offices at Iowa State University, this paper poses and answers two research questions: Do students know whether they have student loans? Do students know how much in total they owe on any outstanding student loans? The goals are to identify some of the determinants of students' knowledge surrounding their student debt and to suggest some policy responses.

Student Debt Context

The New York Federal Reserve Bank reported that in the fourth quarter of 2013, student loan debt outstanding stood at \$1.08 trillion, up 68 percent over five years and surpassing all other consumer credit except for home mortgages (New York Federal Reserve Bank, 2014). Most of the growth was due to substantial increases in federal student loans in combination with shrinking private loan markets (Baum and Payea, 2013).

At a more micro level, among students graduating with a bachelor's degree from four-year public institutions in 2012, 43 percent had no student loan debt. Of those with debt, the average level of debt was \$25,000 (Baum and Payea, 2013). In comparison, 2012 graduates of four-year institutions in Iowa reported an average indebtedness of \$29,456 and graduates of Iowa State University who borrowed for their education had an average indebtedness of \$30,374 (Project on Student Debt, 2013).

Student loan default, like student loan debt, is on the rise. The two-year cohort default rate of Federal Stafford loans, including certain Federal Family Education Loan (FFEL) Program and William D. Ford Federal Direct Loan (Direct Loan) Program loans, has risen from 4.5 percent for the fiscal year 2003 cohort to 10.0 percent for the FY 2011 cohort (Department of Education, 2013). Although default is a concern regardless of education sector, rates are generally lower among public and private four-year institutions, such as Iowa State University, compared with proprietary schools and community colleges. The FY 2011 cohort default rate for community colleges reached 15.0 percent and the proprietary rate reached

13.6 percent. Default rates at four-year public and private institutions stood at 6.8 and 5.1 percent, respectively.

The student debt picture for Iowa State University graduates is improving, but it is still higher than average. While the average debt nationally and at other Iowa public universities has continued to increase, the average loan debt at Iowa State University decreased from 2006 to 2011 and stabilized for 2012 and 2013. The two-year cohort default rate for Iowa State University graduates remains below average at 3.8 percent compared with 6.8 percent for four-year public institutions (Department of Education, 2013).

Previous Research

Our working model for this study posits that students' awareness and understanding of their student loan situation are based on their knowledge and use of options for financing their college education and their overall level of financial capability and experience, controlling for a set of personal and demographic characteristics. In terms of awareness and understanding of financial options, some studies indicate that students err on the side of caution when deciding to borrow for college. For example, a study by Cadena and Keys (2013) indicates that one in six students reject student loan offers; furthermore, those students who receive loan funds distributed in cash³ are significantly more likely to decline a Federal Direct Stafford Loan, which is interest-free until six months after leaving school. In a world of perfect information, this could be attributable to risk aversion of students wary of defaulting on loan payment after college (Chatterjee and Ionescu, 2010). These studies imply that students are well informed about the consequences of borrowing, but the degree to which they understand how those consequences may apply to them personally is another matter.

Complexity in the student financial aid system may hinder healthy financial decision-making. As a result, many aid-eligible students fail to file a Free Application for Federal Student Aid (FAFSA), which utilizes student characteristics, student income, and parental income to determine a student's eligibility for federal student aid, as well as aid for some state and institutional need-based programs (Dynarski and Weiderspan, 2012). Studies have shown that individuals who get help from a financial coach in filling out the FAFSA are more likely to complete and submit the form (Bettinger et al., 2009). However, few studies have examined the relationship between filing a FAFSA and how well students understand their debt obligations after borrowing. This study hopes to add to this body of literature by taking a closer look at whether the act of a student filing or not filing a FAFSA has implications for debt awareness.

Working while enrolled is another approach to funding a college education. Students who work and forgo borrowing are more likely to be of low to moderate income, minorities, undergraduates, and married students (Christou and Haliassos, 2006). Academic performance may decline for students who choose to work (Stinebrickner and Stinebrickner, 2003), and stress levels may increase. Financial stress may pose impediments to academic progress even for students who use student loans (Carew, 2012). In our study, we would expect students who are more concerned with

impending demands for repayment of student loan debt to be similarly stressed. Our study explores how both work and financial stress factor into students' debt awareness.

Although postsecondary students may expect higher future earnings upon graduation, there is little evidence to suggest that students fully understand their own personal earnings potential with a given degree (Rothstein and Rouse, 2011), and thus their ability to repay any loans. They may expect to earn the average income identified for their given their major but fail to account for their own unique situation, such as their chosen career path or their personal skills and abilities, which could affect their earning capacity and ability to repay (Avery and Turner, 2012).

Finally, our study looks at how students' levels of financial capability affect their debt awareness. Previous studies on the financial knowledge of younger populations show that college students are less financially literate relative to the general population (Lusardi et al., 2010), although it may be that general measures of financial literacy are not directly applicable to student populations (Cude et al., 2006). Other research indicates that students lacking in financial knowledge seek out financial counseling on campuses where it is available (Cumbie et al., 2011). Further, a longitudinal study of undergraduates shows that capability varies over time and with experiences (Shim and Serido, 2011).

In summary, the literature provides evidence that awareness and understanding of student loans may be linked to knowledge of college financing options (e.g., those available through filing a FAFSA or working), expectations about returns on investment in education, and general level of financial capability. This study explores how these variables factor into students' debt awareness and understanding.

Data and Methods

Our study combines self-reported survey data with administrative data from Iowa State University's student financial aid and registrar's offices. The survey data include demographic characteristics; work experience; financial education and financial experiences since childhood; financial knowledge, attitudes, and behaviors; and perceptions of financial well-being. We drew most survey items from two validated survey instruments designed to assess the financial well-being of college students (see Gutter and Copur, 2011; Shim et al., 2009). We piloted the online survey with 280 undergraduates and made minor revisions prior to deployment with the study sample. Data drawn from student administrative records and matched to each survey respondent included demographics, academic major, ACT score, grade point average, selected information from the FAFSA, and student loan behaviors tracked by the Iowa State University Office of Student Financial Aid.

We emailed the link to an online voluntary survey to a simple random sample of 6,000 traditional undergraduate, domestic students at Iowa State University in the fall of 2010. The sampling frame included all undergraduate students who were enrolled full time, between the ages of 18 and 24, and U.S. citizens. We received a total of 801 valid responses and used a

subset of 486 observations in this analysis. A comparison of the respondents' key demographic characteristics and borrowing behaviors and the sampling frame suggests that the respondents are representative of that population (see Table 1). The proportion of minority students, the classification distribution, and the proportion of in-state residents in the sample are not significantly different from the population at the university. Also, key financial characteristics are very similar, including the proportion of students who filed a FAFSA before a March 1 deadline to be given priority for institutional financial aid, the calculated expected family contribution to determine eligibility for need-based federal financial aid, and student loan behaviors. To account for the higher female response rate in the study sample, we weighted descriptive statistics and included gender in all regression models.

First, we explored a descriptive analysis of whether students knew if they had any student loans; we called this characteristic, "loan confused." Then, we investigated whether students knew *how much* they owed on student loans and called this "debt confused." These became the dependent variables in a logit regression. To capture whether students knew if they had debt and how much they owed on student loans, we compared their self-reported estimate with their loans on record with the Office of Student

Table 1. Characteristics of the Population and Sample

	Population Mean	Sample Mean	Respondents' Mean
Female*	0.46	0.45	0.60
Minority	0.10	0.10	0.08
Classification			
Senior	0.28	0.28	0.30
Junior	0.24	0.24	0.25
Sophomore	0.23	0.23	0.21
Freshman	0.25	0.25	0.24
State resident	0.74	0.73	0.75
Priority FAFSA ^a	0.78	0.78	0.81
Expected family contribution (\$) ^b	17,878	17,867	18,110
Total cumulative student loan (\$)	12,339	12,363	11,806
Student loan borrowers	0.76	0.76	0.78

* Difference between Sample Mean and Respondents' Mean is significant at $p < 0.01$.

^a FAFSA form submitted by March 1.

^b Expected family contribution is used to calculate the amount of federal student aid, considering family income, assets, and benefits based on a formula established by law.

Note: Numbers are unweighted proportions unless otherwise noted.

Financial Aid. We created ranges of amounts borrowed and developed a cross-tabulation of students' estimates and financial aid office records of borrowing. Observations on the "diagonal" were matches – students who reported they owed as much as the financial aid office numbers (Figure 1). Some "off the diagonal" students indicated they owed more than the financial aid office figures, but we surmise that this may be due to additional informal lending by family members, formal lending from sources not captured in financial aid records, or arrangements between students and parents for the student to repay education debt borrowed on the student's behalf. However, other "off the diagonal" students report that they owed less money than the financial aid office records indicated. This misperception is undesirable and it is this group we code as "debt confused."

Next, we conducted multivariate analyses to investigate the association between respondents' characteristics and their knowledge of student debt.

Figure 1. Comparison of Self-Reported Student Loan Debt with Loan Figures from the Office of Student Financial Aid

Self-Report	Office of Student Financial Aid								Total
	\$0	\$1 - 9,999	\$10,000 - 19,999	\$20,000 - 29,999	\$30,000 - 39,999	\$40,000 - 49,999	\$50,000 - 59,999	\$60,000 or more	
\$0	103	62	0	0	0	0	0	0	165
\$1 - 9,999	2	86	41	2	1	0	0	1	133
\$10,000 - 19,999	2	24	46	29	4	0	1	0	106
\$20,000 - 29,999	1	2	10	22	6	2	0	0	43
\$30,000 - 39,999	0	2	4	7	7	2	0	1	23
\$40,000 - 49,999	0	0	2	0	1	0	2	0	5
\$50,000 - 59,999	0	1	1	1	1	3	0	0	7
\$60,000 or more	0	0	1	1	1	0	0	1	4
Total	108	177	105	62	21	7	3	3	486

Notes: Cells shaded in light grey on the diagonal are the number of observations in which students' self-report and Office of Student Financial Aid records match. Cells shaded in dark grey are observations in which students' self-report is less than Office of Student Financial Aid records, but within \$10,000. Cells shaded in black are observations in which students' self-report is off by \$10,000 or more from the figure provided by the Office of Student Financial Aid.

Independent variables included gender, race, classification (year in school), GPA, in-state resident, transfer student status, college enrolled in, financial literacy and experiences, whether the student was financially independent from parents, employment, and financial stress (see Table 2). For the financial need status variable, we combined measures of whether a student filed a FAFSA and whether the expected family contribution was greater than, equal to, or less than the expected college expenses. We created a set of dummy variables that captured 1) students who did not file a FAFSA, 2) students who filed a FAFSA, but whose expected family contributions were equal to or greater than expected expenses, and 3) students who filed a FAFSA and whose expected family contributions were less than expected expenses (i.e., they were likely to qualify for need-based financial aid programs).

Financial literacy and experience was measured by four variables: 1) whether the student reported receiving financial or consumer education in high school; 2) whether the student grew up in an environment without substantial economic constraints (parents were able to meet their monthly financial needs; parents able to pay monthly bills; whether the family was better, the same, or worse off than others); 3) whether parents taught the student any financial management skills (e.g., budgeting, saving, spending, credit cards); and 4) whether the student had any financial education in college (either at this university or at another school if a transfer student).

Employment was measured as dummy variables that captured whether the students worked, and if so, whether they worked full time or part time. This variable is taken from the student survey and includes both on-campus and off-campus employment. Furthermore, we included an indicator variable for whether the student reported working to pay for school. Financial stress measures included a self-reported measure of feeling stressed and an indicator variable if the student reported that financial stress affected their enrollment or the number of credit hours taken.

We used a logit specification for the loan-confused analysis.⁴ For the debt-confused analysis, we created a dependent variable with three levels: not debt confused (knew how much they owed), somewhat debt confused (within \$10,000 of estimating the amount owed), and more debt confused (underestimated the amount owed by more than \$10,000). Here we used an ordered logit analysis to capture these three levels. Since the coefficients of the ordered logit regressions are difficult to interpret, we calculated the probabilities that students are not, are somewhat, or are more debt confused.

Results *Loan Confused*

About 13 percent of students reported they did not borrow a student loan, when in fact they did (Table 2). The multivariate analysis reveals that females were less likely to be loan confused than males. This finding is interesting in that other studies point to lower levels of financial literacy among females (Hung et al., 2009). Seniors were less likely to be confused

Table 2. Regression Results for Whether Students Know They Borrowed Loans

	Summary Statistics			Regression Results	
	Full Sample	Loan Confused	Not Loan Confused	Logit Coefficient	Odds Ratio
Dependent Variable					
Know whether they have student loans/debt (1=student reports they don't owe anything while Financial Aid Office records indicate they do)					
	0.13 (0.33)	1.00 0.00	0.00 0.00		
Independent Variables					
Female	0.48 (0.50)	0.35 (0.48)	0.50 (0.50)	-0.96** (0.47)	0.38**
Minority	0.08 (0.27)	0.07 (0.25)	0.08 (0.28)	-0.18 (0.77)	0.83
Classification					
Freshman (base)	0.26 (0.44)	0.46 (0.50)	0.23 (0.42)	base	
Sophomore	0.18 (0.38)	0.20 (0.40)	0.18 (0.38)	-0.07 (0.55)	0.93
Junior	0.25 (0.44)	0.18 (0.39)	0.26 (0.44)	-0.36 (0.58)	0.70
Senior	0.31 (0.46)	0.17 (0.38)	0.33 (0.47)	-0.52 (0.53)	0.60
Grade point average					
3.50 or higher (base)	0.32 (0.47)	0.46 (0.50)	0.30 (0.46)	base	
3.00-3.49	0.39 (0.49)	0.40 (0.49)	0.39 (0.49)	-0.31 (0.43)	0.73
Less than 3.00	0.29 (0.46)	0.14 (0.35)	0.31 (0.46)	-0.77 (0.59)	0.46
State resident	0.78 (0.42)	0.87 (0.34)	0.76 (0.43)	0.68 (0.54)	1.96
Transfer student	0.20 (0.40)	0.13 (0.34)	0.20 (0.40)	0.25 (0.61)	1.28
Need (expected contribution is less than expected expenses)	0.62 (0.49)	0.43 (0.50)	0.64 (0.48)	-0.84** (0.43)	0.43**
College					
Agriculture and Life Sciences	0.17 (0.37)	0.22 (0.42)	0.16 (0.37)	-0.07 (0.62)	0.93
Design	0.06 (0.23)	0.03 (0.19)	0.06 (0.24)	0.06 (0.91)	1.07
Engineering (base)	0.27 (0.44)	0.35 (0.48)	0.26 (0.44)	base	
Human Sciences	0.13 (0.34)	0.11 (0.32)	0.14 (0.34)	-0.29 (0.70)	0.75

continued on next page

Table 2–Continued. Regression Results for Whether Students Know They Borrowed Loans

	Summary Statistics			Regression Results	
	Full Sample	Loan Confused	Not Loan Confused	Logit Coefficient	Odds Ratio
Business	0.12 (0.32)	0.12 (0.32)	0.12 (0.32)	-0.14 (0.77)	0.87
Liberal Arts and Sciences	0.26 (0.44)	0.17 (0.38)	0.27 (0.45)	-0.56 (0.60)	0.57
Student feels responsible for loan payments	0.69 (0.46)	0.15 (0.36)	0.77 (0.42)	-3.67*** (0.47)	0.03***
Financial literacy and experiences					
Had financial education in high school	0.62 (0.49)	0.70 (0.46)	0.61 (0.49)	0.49 (0.41)	1.64
Did not have economic constraints growing up (financial environment)	0.39 (0.49)	0.43 (0.50)	0.38 (0.49)	-0.51 (0.45)	0.60
Parents taught financial management skills	0.62 (0.49)	0.76 (0.43)	0.60 (0.49)	0.06 (0.45)	1.06
Had financial education in college	0.23 (0.42)	0.15 (0.36)	0.24 (0.43)	-0.37 (0.52)	0.69
Student is financially independent	0.19 (0.39)	0.01 (0.11)	0.22 (0.41)	-4.62*** (1.10)	0.01***
Employment					
Not employed (base)	0.41 (0.49)	0.47 (0.50)	0.40 (0.49)	base	
Works part time	0.51 (0.50)	0.52 (0.50)	0.50 (0.50)	0.71 (0.50)	2.03
Works full time	0.09 (0.28)	0.01 (0.11)	0.10 (0.30)	0.03 (1.30)	1.03
Working to pay for cost of attendance	0.37 (0.48)	0.24 (0.43)	0.39 (0.49)	0.19 (0.54)	1.21
Financial stress					
Indicated financial stress (psychological)	0.59 (0.49)	0.49 (0.50)	0.61 (0.49)	0.53 (0.45)	1.70
Indicated financial stress affects enrollment/credit hours (behavioral)	0.39 (0.49)	0.21 (0.41)	0.42 (0.49)	-0.75 (0.49)	0.47
Constant				0.71 (0.87)	2.03
Number of observations	486	63	423	486	
Pseudo R-squared				0.46	
LR chi2(20)				174.3	

Notes: Numbers are weighted proportions unless otherwise noted; standard deviations and standard errors in parenthesis.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

about whether they owed student loans, although this difference did not hold in the multivariate analysis (Table 2). Students with financial need were less likely to be loan confused than those without need. Students who knew they were responsible for their loans were less likely to be loan confused. Students who do not know if they are responsible may be assuming that their parents will pay or they may be unaware of who is ultimately responsible for paying back their loans. Finally, students who are deemed “financially independent” by the Office of Student Financial Aid, meaning they do not have financial support from a parent or other legal guardian, were less likely to be confused about whether they owed any money.

Debt Confused

Nearly two-fifths (37.4% (28.3% + 9.1%)) of students underestimated the amount of student loan debt they owed (i.e. they were “somewhat” or “more” debt confused; Table 3). Nearly one out of 10 (9.1 percent) underestimated their debt by more than \$10,000. Classification (freshmen, sophomore, junior, senior), GPA, being a transfer student, filing a FAFSA, college of enrollment, feeling responsible for payments, and whether students’ parents taught them financial management skills were all associated with debt confusion (see Appendix for ordered logit regression coefficients).

Freshmen had a 0.64 probability (that is, a 64 percent chance) of accurately knowing how much they owed, compared with 0.58 for sophomores and 0.60 for seniors (Table 4). In part, this may be because freshmen only have one year of loans to estimate. Students with GPAs of 3.5 or higher had a 0.67 probability of knowing how much they owed, compared with 0.64 for those with GPAs of 3.0 to 3.49 and with 0.60 for those with GPAs less than 3.0. Also, students with GPAs of 3.5 or higher had the lowest probability of being in the more debt confused category (0.07 probability compared with 0.08 and 0.09, respectively).

Transfer students were less likely to be debt confused (0.82 vs. 0.66); this is as expected, because transfer students may start at a 2-year college to save money and may be more sensitized to levels of debt. It may also be that in the process of transferring, these students have the opportunity to complete a loan exit interview with the financial aid office, serving as a reminder of how much they have borrowed.

Students who filed a FAFSA, regardless of their need category, were less likely to know how much they owe. This result seems counterintuitive, although it is interesting to note that students who had no financial need were less likely to know how much they owed. Students who do not file a FAFSA but who take out private loans generally request a specific amount on the loan application; thus, they should know how much they owe. Also, the act of applying for the loan and interacting with the loan officer may make students more engaged with their loan status.

Compared with engineering students, students studying in the College of Design were less likely to know how much they owed. The difference is

Table 3. Summary Statistics for Whether Students Know How Much Debt They Owe

	Full Sample	Not Debt Confused	Somewhat Debt Confused	More Debt Confused
Number of observations (unweighted)	486	332	142	12
Dependent Variable				
Proportion of students underestimating amount owed in student loans compared with financial aid records by less than \$10,000 (Somewhat) or more than \$10,000 (More)	100%	62.6%	28.3%	9.1%
Independent Variables				
Female	0.48 (0.50)	0.51 (0.50)	0.39 (0.49)	0.52 (0.51)
Minority	0.08 (0.27)	0.07 (0.25)	0.10 (0.30)	0.10 (0.30)
Classification				
Freshman (base)	0.26 (0.44)	0.27 (0.45)	0.26 (0.44)	0.21 (0.41)
Sophomore	0.18 (0.38)	0.15 (0.36)	0.23 (0.42)	0.18 (0.39)
Junior	0.25 (0.44)	0.28 (0.45)	0.18 (0.39)	0.31 (0.47)
Senior	0.31 (0.46)	0.30 (0.46)	0.34 (0.47)	0.30 (0.46)
Grade point average				
3.50 or higher (base)	0.32 (0.47)	0.33 (0.47)	0.32 (0.47)	0.23 (0.43)
3.00-3.49	0.39 (0.49)	0.37 (0.49)	0.41 (0.49)	0.44 (0.50)
Less than 3.00	0.29 (0.46)	0.30 (0.46)	0.27 (0.45)	0.33 (0.47)
State resident	0.78 (0.42)	0.76 (0.43)	0.84 (0.37)	0.65 (0.48)
Transfer student	0.20 (0.40)	0.23 (0.42)	0.15 (0.36)	0.12 (0.33)
FAFSA and financial need				
Did not file a FAFSA (base)	0.15 (0.36)	0.23 (0.42)	0.00 (0.00)	0.05 (0.21)
Filed a FAFSA but no financial need (expected family contribution greater than or equal to cost of attendance)	0.24 (0.43)	0.18 (0.39)	0.35 (0.48)	0.26 (0.44)
Filed a FAFSA and have financial need (expected family contribution is less than expected expenses)	0.61 (0.49)	0.58 (0.49)	0.66 (0.48)	0.70 (0.46)

continued on next page

Table 3—Continued. Summary Statistics for Whether Students Know How Much Debt They Owe

	Full Sample	Not Debt Confused	Somewhat Debt Confused	More Debt Confused
College				
Agriculture and Life Sciences	0.17 (0.37)	0.18 (0.38)	0.19 (0.39)	0.03 (0.18)
Design	0.06 (0.23)	0.05 (0.22)	0.04 (0.20)	0.12 (0.33)
Engineering (base)	0.27 (0.44)	0.25 (0.43)	0.35 (0.48)	0.19 (0.40)
Human Sciences	0.13 (0.34)	0.12 (0.33)	0.11 (0.31)	0.28 (0.45)
Business	0.12 (0.32)	0.12 (0.33)	0.11 (0.32)	0.09 (0.28)
Liberal Arts and Sciences	0.26 (0.44)	0.28 (0.45)	0.21 (0.41)	0.30 (0.46)
Student feels responsible for loan payments	0.69 (0.46)	0.70 (0.46)	0.61 (0.49)	0.88 (0.33)
Financial education				
Had financial education in high school	0.62 (0.49)	0.64 (0.48)	0.61 (0.49)	0.54 (0.50)
Did not have economic constraints growing up (financial environment)	0.39 (0.49)	0.40 (0.49)	0.41 (0.49)	0.25 (0.44)
Parents taught financial management skills	0.62 (0.49)	0.64 (0.48)	0.63 (0.48)	0.48 (0.51)
Had financial education in college	0.23 (0.42)	0.23 (0.42)	0.23 (0.42)	0.22 (0.42)
Student is financially independent	0.19 (0.39)	0.27 (0.45)	0.05 (0.22)	0.06 (0.25)
Employment				
Not employed (base)	0.41 (0.49)	0.41 (0.49)	0.38 (0.49)	0.49 (0.51)
Works part time	0.50 (0.50)	0.48 (0.50)	0.59 (0.49)	0.41 (0.50)
Works full time	0.09 (0.28)	0.11 (0.31)	0.03 (0.18)	0.10 (0.31)
Working to pay for cost of attendance	0.37 (0.48)	0.39 (0.49)	0.36 (0.48)	0.25 (0.44)
Financial stress				
Indicated financial stress (psychological)	0.59 (0.49)	0.59 (0.49)	0.56 (0.50)	0.76 (0.43)
Indicated financial stress affects enrollment/credit hours (behavioral)	0.39 (0.49)	0.42 (0.50)	0.32 (0.47)	0.41 (0.50)

Notes: Numbers are weighted proportions unless otherwise noted; standard deviations are in parentheses.

Table 4. Predicted Probabilities for Whether Students Know How Much Debt They Owe

	Not Debt Confused	Somewhat Debt Confused	More Debt Confused
Total share of respondents (weighted)	0.63	0.28	0.09
Male	0.65	0.28	0.07
Female	0.72	0.23	0.05
Minority	0.73	0.22	0.05
Non-minority	0.69	0.25	0.06
Classification			
Freshman (base)	0.64	0.28	0.07
Sophomore	0.58	0.32	0.09
Junior	0.65	0.28	0.07
Senior	0.60	0.31	0.09
Grade point average			
3.50 or higher (base)	0.67	0.26	0.07
3.00-3.49	0.64	0.29	0.08
Less than 3.00	0.60	0.31	0.09
State resident	0.70	0.24	0.06
Non-resident	0.67	0.26	0.07
Transfer student	0.82	0.15	0.03
Non-transfer student	0.66	0.27	0.07
FAFSA and financial need			
Did not file a FAFSA (base)	0.53	0.36	0.11
Filed a FAFSA but no financial need (expected family contribution is equal to or greater than expected expenses)	0.10	0.34	0.55
Filed a FAFSA and have financial need (expected family contribution is less than expected expenses)	0.36	0.44	0.21
College			
Agriculture and Life Sciences	0.74	0.21	0.05
Design	0.53	0.36	0.12
Engineering (base)	0.77	0.19	0.04
Human Sciences	0.59	0.32	0.09
Business	0.72	0.23	0.05
Liberal Arts and Sciences	0.68	0.25	0.06

continued on next page

Table 4—Continued. Predicted Probabilities for Whether Students Know How Much Debt They Owe

	Not Debt Confused	Somewhat Debt Confused	More Debt Confused
Felt personal responsibility for loans	0.74	0.21	0.05
Did not feel personal responsibility for loans	0.58	0.33	0.10
Financial education			
Had financial education in high school	0.71	0.23	0.06
No financial education in high school	0.66	0.27	0.07
Did not have economic constraints growing up (financial environment)	0.68	0.25	0.06
Had economic constraints growing up	0.70	0.24	0.06
Parents taught financial management skills	0.73	0.22	0.05
Parent did not teach financial management skills	0.63	0.29	0.08
Had financial education in college	0.71	0.24	0.06
Did not have financial education in college	0.69	0.25	0.06
Student is financially independent (FAFSA)	0.67	0.26	0.07
Student is financially dependent (FAFSA)	0.70	0.24	0.06
Employment			
Not employed (base)	0.65	0.28	0.07
Works part time	0.66	0.27	0.07
Works full time	0.76	0.20	0.04
Works to pay for cost of attendance	0.74	0.21	0.05
Does not work to pay cost of attendance	0.66	0.27	0.07
Financial stress (psychological)			
Indicated financial stress	0.67	0.27	0.07
Did not indicate financial stress	0.73	0.22	0.05
Financial stress (behavioral)			
Indicated financial stress affects enrollment/credit hours	0.73	0.22	0.05
Did not indicate financial stress affects enrollment/credit hours	0.67	0.26	0.07

Notes: Statistically significant regression variables in bold.

notable in the debt-confused category: students in the College of Design had a 0.12 probability of being in the debt-confused category, compared with 0.04 for those in Engineering.

Students who felt they were personally responsible for their loans had a higher probability of not being debt confused, 0.74 compared with 0.58 for those who did not feel responsible for their loans. Also, students whose parents taught them some money management skills were more likely to know how much they owed (0.73 compared with 0.63 for those whose parents did not teach any money management skills); moreover these students were less likely to be in the more debt confused category (0.05 vs. 0.08).

Discussion

In this paper, we sought answers to two questions: Do students know whether they have student loans? Do they know how much in total they owe on any outstanding student loans? Our conceptual model for this study posited that students' awareness and understanding of their student loan situation are based on their knowledge of and use of options for financing their college education and their overall level of financial experience, controlling for a set of personal and demographic characteristics. Nearly one out of eight (13 percent) university students reports having no student loans despite having loans on record. We found that females, those defined as having financial need, those who feel responsible for loan payments, those who are defined as financially independent, and those indicating financial stress affects their enrollment are more likely to know whether they have student debt obligations (that is, they are less likely to be "loan confused"). In comparison, in-state residents are more likely to be loan confused.

There is some evidence to suggest that the more financially constrained students are, the more likely they know they have debt. For example, students whose expected family contribution was less than the cost of attendance (see FAFSA and financial need, Table 3) were less likely to be loan confused than those without financial need. Perhaps students on the financial margin for college attendance are more sensitive to debt burdens than other students, because they would otherwise not be able to afford the cost of college. Similar explanations may also apply to the finding that financially independent students were less likely to be loan confused.

Nearly two-fifths (37 percent) of students cannot accurately estimate the amounts they owe. Of more concern, nearly 1 in 10 (9 percent) underestimated their loans by more than \$10,000. Feeling responsible for loan payments and learning money management at home were strongly associated with knowing how much is owed. Additionally, classification, GPA, transfer status, filing a FAFSA, and college of enrollment were factors important in explaining the differences in understanding how much was owed.

Given that seniors are closer to student loan repayment than freshmen, it is interesting to note that seniors were more likely to be "somewhat confused" and "more" confused about their debt than freshman. It may be

that freshmen only have to recall one year of borrowing whereas seniors need to account for multiple years of borrowing. The debt figures utilized in this study do not include accrued interest on unsubsidized federal and private student loans, which could further increase the loan confusion experienced by senior students. When interest is capitalized before repayment begins, as is typical with private loans, students may lack the financial skills necessary to properly account for all of their debt.

Limitations

These data come from current traditional undergraduate students at one university at a single point in time; they are not nationally representative nor do they represent other cohorts of students. Instead, the data present a case study of how recent students relate to their student loans. Because these are current students, the data do not address issues of student loan delinquency or defaults, which are important issues to borrowers and to policy makers. Also, because these are current students, the data do not address problems related to dropping out before completion and how understanding and knowledge about student loans may be related to degree completion.

Implications for Intervention

These findings speak to the need to mitigate against college students' lack of financial experiences. One option is to make on-going financial counseling available to students and to provide some type of exit counseling so that students can adjust their expectations for both current and future lifestyles. Our findings suggest that annual reviews of student loan indebtedness should focus not only on a student's current year aid package, but also emphasize cumulative debt.

Schools are limited in their ability to track private loans. Schools may know the amount of private debt a student acquires in a particular term, but cannot track the debt after the initial disbursement. So if a student receives a private loan disbursement in August then decides to return a portion of the loan in November, the school would not be aware of the reduction in principal. Additionally, a school would not be aware of the original or current balances on any private education loan a student borrowed while attending another institution. Federal student loans are reported to the National Student Loan Data System (NSLDS), and students can get information on all their federal loans with a single call or through a single website. One policy option would be to require private lenders to also report loans to the NSLDS or require all loans to be reported to credit agencies. This would allow students to get information on all their loans in one location.

The NSLDS is not without problems, however. There can be a multiple-month lag in posting federal student loans to the database and even longer lag in correcting NSLDS records. While the NSLDS may be very helpful to most students once they are out of school and are beginning to pay back their loans, it may be less helpful to currently enrolled students and financial aid officers who are trying to track student loans in real time.

Another policy option would be to work with the Department of Education and federal loan servicers to increase the accuracy and timeliness of posting federal student loans to the NSLDS.

In addition to knowing how much they owe, students need to understand what their outstanding loan balance means in terms of monthly payments. Knowing that you owe \$30,000 at five percent interest is one thing; realizing that this means a monthly payment of about \$320 for the next 10 years is another. The Consumer Financial Protection Bureau and the Department of Education developed a prototype financial aid notice that includes an estimated monthly payment for all loans that might be expected for a four-year bachelor's degree (Date, 2011). The prototype, known as the Financial Aid Shopping Sheet, was first implemented in fall 2013 and has been adopted by more than 500 institutions (Duncan, 2012) including Iowa State University. Nearly 2,000 colleges have committed to utilizing the Shopping Sheet for fall 2014 (Dann-Messier, 2013). Policies that could help students frame and benchmark their student loan debt may help students and their families make better decisions about student loans.

Implications at Iowa State University

The student aid office at Iowa State University, supported by the findings of this study, has taken several steps to assist its students with tracking and understanding their loan obligations. Students now have the ability to monitor their individual student loan indebtedness as well as potential monthly payments through a web-based tool developed for the institution's student information system. The tool provides total indebtedness for all federal education loans borrowed by the student and private education debt borrowed while attending this institution. It provides students an estimated monthly payment based on standard and extended repayment plans. Additionally, beginning with the fall 2013 term, the Iowa State University student aid office moved away from a passive acceptance of Federal Direct Stafford Loans and Federal Perkins Loans and now requires students to accept or decline their loan offers each term. This change provides students with an additional opportunity to review their indebtedness and make informed borrowing decisions.

Loan counseling and financial education opportunities have increased at Iowa State University to assist students in making wise borrowing decisions and to help reduce debt, default, and delinquency. Increased demand on the Financial Counseling Clinic and a new collaboration between the government of the student body and the Office of Student Financial Aid has led to the creation of the Student Loan Education Office. This office provides one-on-one in-person student loan entrance and exit counseling as an alternative to the federal online counseling tools. First-time private loan borrowers are required to complete additional one-on-one counseling with a Student Loan Education advisor. The one-on-one counseling allows for more individualized discussion with students regarding their loan options, borrowing plans and repayment options in the context of a student's college goals, financial situation, and their expected starting salary after graduation. The advisor helps students develop budgets that guide borrowing decisions, explains the consequences of over-borrowing and

discusses the implications borrowing can have now and in student's future. Continuing the work of the Financial Counseling Clinic, the Student Loan Education Office conducts outreach to classes, residence halls, and student groups covering a variety of topics including student loans, budgeting, money management, and credit. The Department of Human Development and Family Studies has also expanded its in-person and online course offerings that provide students with a foundation in personal finance and expose students to a variety of personal finance issues.

Targeted Financial Education

Although only one measure of financial literacy was significant in this analysis, there may still be a role for targeted financial education to college and prospective college students, which was not evaluated as part of this study. If students better understand the opportunity costs of an education, and the time value of money, interest, credit, and budgeting before borrowing, they may become more frugal consumers and make better spending choices throughout college. Similarly, a more informed consumer may forgo additional borrowing, and live with less while in school.

The Impact of Academic Choices on Indebtedness

Finally, helping students and their families select the right institution may be as important as selecting the right financial aid package and set of student loans. Given the complexity of the choices facing students and their parents, the joint decisions of the choice of major and course of study, university, and college-financing clearly require more study.

Nexus: Putting Research Into Practice

- Annual updates of cumulative debt: These findings speak to the need to mitigate against college students' lack of financial experiences. Institutions should make ongoing financial counseling available to students and provide comprehensive exit counseling so that students can adjust their expectations for both current and future lifestyles. Annual reviews of student loan indebtedness should focus not only on a student's current year aid package, but also emphasize cumulative debt.
- Targeting additional educational resources: Females, those defined as having financial need, those who feel responsible for loan payments, those who are defined as financially independent, and those indicating financial stress affects their enrollment are more likely to know about their student debt obligations (that is, they are less likely to be "loan confused"). While these may be the results of targeted education toward these groups, it raises the importance of reaching all students who are borrowing. If only limited resources are available, targeting male, moderate-income, and dependent borrowers may have larger benefits in terms of correcting misunderstanding of debt levels.

Endnotes

¹ The analysis and conclusions set forth in this presentation represent the work of the authors and do not indicate concurrence of the Federal Reserve Board, the Federal Reserve Banks, or their staff. Mention or display of a trademark, proprietary product, or firm in the presentation by the authors does not constitute an endorsement or criticism by the Federal Reserve System and does not imply approval to the exclusion of other suitable products or firms.

² From 2008 to 2011, unemployment rates for recent college graduates were more than 11 percent, peaking at 17.6 percent in 2009 (http://www.bls.gov/opub/ted/2013/ted_20130405.htm).

³ Loan funds were distributed in cash when the student both lived off-campus and the accepted funds to pay room and board.

⁴ We also explored a probit specification for this model, but found the logit functional form to be a better fit with the data.

References

- Avery, C., & Turner, S. (2012). Student loans: Do college students borrow too much—or not enough? *Journal of Economic Perspectives*, 26(1), 165-192.
- Baum, S., & Payea, K. (2013). Trends in student aid 2013. New York: College Board. Retrieved from http://trends.collegeboard.org/student_aid/
- Bettinger, E.P., Long, B. T., Oreopoulos, P., & Sanbonmatsu, L. (2009). The role of simplification and information in college decisions: results from the H&R Block FAFSA experiment. NBER Working Paper No. 15361. Cambridge, MA: National Bureau of Economic Retrieved from <http://www.nber.org/papers/w15361>
- Cadena, B. C., & Keys, B. J. (2013). Can self-control explain avoiding free money? Evidence from interest-free loans. *Review of Economics and Statistics*, 95(4), 1117-1129. Retrieved from http://spot.colorado.edu/~cadenab/Research_files/cadena_keys_restat_accepted.pdf
- Carew, D. (2012). The payback stress indicator: A new way to measure the pain of student debt. Washington D.C.: Progressive Policy Institute. Retrieved from http://progressivepolicy.org/wp-content/uploads/2012/01/1.2011-Carew_The-Payback-Stress-Index_A-New-Way-to-Measure-the-Pain-of-Student-Debt.pdf
- Chatterjee, S., & Ionescu, F. (2010). Insuring student loans against the risk of college failure. Philadelphia: Federal Reserve Bank of Philadelphia Working Paper No. 10-31). Retrieved from <http://www.philadelphiafed.org/research-and-data/publications/working-papers/2010/wp10-31.pdf>
- Christou, C., & Haliassos, M. (2006). How do students finance human capital accumulation? The choice between borrowing and work. *Journal of Policy Modeling*, 28(1), 39-51.
- Cude, B., Lawrence, F., Lyons, A., Metzger, K., LeJune, E., Marks, L., & Machtmes, K. (2006). College students and financial literacy: What they know and what we need to learn. Proceedings of the Eastern Family Economics and Resource Management Association. Retrieved from http://www.cgsnet.org/ckfinder/userfiles/files/College_Students_and_Financial_Literacy.pdf
- Cumbie, J., Cupples, S., Henegar, J., Schindler, K., Archuleta, K., Britt, S., & Grable, J. (2011, April). Student financial counseling: An analysis of a clinical and non-clinical sample. Proceedings of the American Counsel on Consumer Interests 2011 Annual Conference. Retrieved from http://www.consumerinterests.org/assets/docs/CIA/CIA2011/2011_cumbiecuppleshenegarschindlerarchuletabrittgrable.pdf
- Dann-Messier, B. (2013, December 13). 2014-2015 Financial aid shopping sheet [DLC ID:GEN-13-26]. Message posted to www.Ifap.ed.gov

- Date, R. (2011). Know before you owe: Student loans. Washington, D.C.: Consumer Financial Protection Bureau. Retrieved from www.consumerfinance.gov/speech/know-before-you-owe-student-loans/
- Duncan, A. (2012, November 15). More than 500 colleges to adopt financial aid shopping sheet. [Web log comment]. Retrieved from <http://www.ed.gov/blog/2012/11/more-than-500-colleges-agree-to-adopt-financial-aid-shopping-sheet/>
- Dynarski, S., & Wiederspan, M. (2012). Student aid simplification: Looking back and looking ahead. NBER Working Paper No. 17834. Cambridge, MA: National Bureau of Economic Research Retrieved from <http://www.nber.org/papers/w17834>
- Gutter, M. S., & Copur, Z. (2011). Financial behaviors and financial well-being of college students: Evidence from a national survey. *Journal of Family and Economic Issues*, 32(4), 699-714.
- Hung, A. A., Parker, A. M., & Yoong, J. K. (2009). Defining and measuring financial literacy. RAND Working Paper No. WR-708. Santa Monica, CA: RAND Corp. Retrieved from http://www.rand.org/pubs/working_papers/WR708
- Loonin, D., & McLaughlin, J. (2012). The student loan default trap: Why borrowers default and what can be done. Boston, MA: National Consumer Law Center. Retrieved from <http://www.studentloanborrowerassistance.org/uploads/File/student-loan-default-trap-report.pdf>
- Lusardi, A., Mitchell, O. S., & Curto, V. (2010). Financial literacy among the young. *Journal of Consumer Affairs*, 44(2), 358-380.
- New York Federal Reserve Bank. (2014). Quarterly report on household debt and credit. February, 2014. Retrieved from http://www.newyorkfed.org/householdcredit/2013-Q4/HHDC_2013Q4.pdf
- Project on Student Debt. (2013). Student debt and the class of 2012. Retrieved from <http://projectonstudentdebt.org/files/pub/classof2012.pdf>
- Rothstein, J., & Rouse, C. E. (2011). Constrained after college: Student loans and early-career occupational choices. *Journal of Public Economics*, 95(1-2), 149-163.
- Shim, S., & Serido, J. (2011). Young adults financial capability: Arizona pathways to life success for university students, Wave 2. Retrieved from <http://tcainstitute.org/APLUS-Wave-2-Report.pdf>
- Shim, S., Barber, B. L., Card, N., Xiao, J. J., & Serido, J. (2009). Pathways to life success: A conceptual model of financial well-being for young adults. *Journal of Applied Developmental Psychology*, 30(6), 708-723.

Stinebrickner, R., & Stinebrickner, T. R. (2003). Working during school and academic performance. *Journal of Labor Economics*, 21(2), 473-491.

U.S. Department of Education. (2013). Comparison of FY 2011 2-year official cohort default rates to prior two official calculations. Retrieved from <http://www2.ed.gov/offices/OSFAP/defaultmanagement/cdrschooltype2yr.pdf>

Appendix. Ordered Logit Regression Results for Whether Students Know How Much Debt They Owe

	Ordered Logit Coefficient
Female	-0.32 (0.23)
Minority	-0.215 (0.35)
Classification (senior is base)	
Sophomore	0.58* (0.30)
Junior	0.26 (0.30)
Senior	0.62** (0.29)
Grade point average (3.50 or higher is base)	
GPA 3.00 to 3.49	0.43* (0.24)
GPA less than 3.0	0.56** (0.28)
State resident	-0.13 (0.25)
Transfer student	-0.86*** (0.29)
FAFSA and financial need (did not file a FAFSA is base)	
Filed a FAFSA but no financial need (expected family contribution is equal to or greater than cost of attendance)	3.88*** (0.82)
Filed a FAFSA and have financial need (expected family contribution is less than expected expenses)	3.68*** (0.81)
College (Engineering is base)	
Agriculture and Life Sciences	-0.31 (0.33)
Design	0.75* (0.46)
Human Sciences	0.54 (0.34)
Business	-0.13 (0.38)
Liberal Arts and Sciences	0.06 (0.30)
Student feels responsible for loan payments	-0.73*** (0.25)

continued on next page

Appendix–Continued. Ordered Logit Regression Results for Whether Students Know How Much Debt They Owe

	Ordered Logit Coefficient
Financial education	
Had financial education in high school	-0.24 (0.20)
Did not have economic constraints growing up (financial environment)	0.072 (0.22)
Parents taught financial management skills	-0.43** (0.21)
Had financial education in college	-0.08 (0.23)
Student is financially independent (FAFSA)	0.14 (0.49)
Employment (not employed is base)	
Works part-time	0.36 (0.26)
Works full-time	-0.37 (0.46)
Works to pay for cost of attendance	-0.38 (0.26)
Financial stress	
Indicated financial stress (psychological)	0.33 (0.24)
Indicated financial stress affects enrollment/credit hours (behavioral)	-0.29 (0.24)
cut1 (ordered logit)	
Constant	3.47*** (0.88)
cut2 (ordered logit)	
Constant	5.39*** (0.89)
Observations	525
Pseudo R-squared	0.12
LR chi2(20)	107.1

Notes: Dependent variable: Do they know how much they owe?
(Equals 0 if the student knew their debt or overestimated; 1 if the student was off by \$10,000; 2 if the student was off by more than \$10,000.) Standard errors in parentheses.
*p<0.1, **p<0.05, ***p<0.01.