

Graduation in an Era of Uncertainty: Student Loan Repayment Following the Great Recession

Undergraduate Research Thesis

Presented in Partial Fulfillment of the Requirements for graduation “with Research Distinction in Sociology” in the undergraduate colleges of The Ohio State University

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May 2017

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## **1. Introduction**

In recent years, the higher education system and financial aid industry have expanded to meet the trend of growing enrollments. With a focus on the Great Recession, observers and students have increasingly been of the belief that higher education credentials hold the possibility for labor market rewards. The bachelor's degree had been regarded as one's ticket to the American middle class. However, this possibility of upward mobility had been accompanied by much concern over the accumulation of student debt and the questionable payoff of a college degree. With growing uncertainty over the value of a bachelor's degree and the debt taken to finance it, many were left asking: How would college graduates be able to handle the student loans they had taken on during better times?

The crucial interplay of higher education and post-baccalaureate labor market outcomes have become increasingly important in understanding social stratification: college may equalize dispersion among demographic and economic groups, but may also further replicate disadvantages (Grotsky & Jackson, 2009 and Scott-Clayton, 2016). Where students first enrolled for postsecondary education has been suggested to be stratified along class and racial lines, an inequality that persists past graduation. The different pathways students take through college then has great implication for post-graduation outcomes. With the college-for-all system in the United States, enrollments at "open access" institutions, such as community colleges and for-profits, have swelled more so than at more traditional four year institutions. These schools have claimed to offer more career- and student-focused programs, an approach that was

especially relevant during the recessionary period (Deming et al., 2013). After graduation, certain outcomes in the labor market caused some to become distressed in repaying their student loans. Graduates placed into under and unemployment were found in situations that were expectantly difficult. The role of the recovering economy bore on the ability for graduates to repay their educational loans.

We know that much of the concern with educational debt has been for those who began college, but dropped short of finishing their degree (Dynarski, 2004 and Gladieux & Perna, 2005). But for those who graduated, what does their repayment look like? Do pathways through college also matter in repayment, meaning: is there variability in repayments by whether a graduate started at an institution other than a public or private nonprofit four-year school? Common knowledge has been that those who hold a bachelor's credential were able to find a job that paid off and allowed for them to avoid becoming distressed with their student loans. However, this belief was greatly tested during the Great Recession.

The purpose of my study arose from the need to examine the influence of where students first began college on outcomes of baccalaureate graduates following the Great Recession. Social scientists have explored the determinants of loan default and other manifestations of distress across institution type that students had last attended, regardless of whether they had completed a bachelor's degree. However, where a student first attended college and when they attended matters, especially during a time of rising dependence on debt to finance education. The necessity to look at the implications of student outcomes in the labor market may allow for me to understand what role the possession of a baccalaureate degree had in the years following the

recession. For this, in the attempt to demonstrate student loan repayment, I will begin by looking at the contexts of the financing of education, the pathways through higher education, and the recession. Then I will draw upon data from the National Center for Educational Statistics *Baccalaureate & Beyond* 2007-08 survey to study the role of first college attended in the repayment of college graduates' educational loans.

## **2. The Rise of Student Debt**

Over the past several decades, there has been a significant increase in the amount of total loan debt and number of defaults. The amount of debt among all students increased during this period, from \$91.5 billion in 2005-06, before the Great Recession, to \$119.8 billion at its end (College Board, 2016). Some have argued that this is due to rising tuition costs along with the swell of enrollments across all universities. However, the mounting 'student loan crisis' can be largely explained by growing expectations for students to finance their postsecondary education through becoming indebted. For bachelor's graduates in 2007-08, two-thirds had student loan debt, a share that is more than ten points higher reported a decade prior (Project on Student Debt, 2009).

Another thing to consider is the the role of federal grant aid. For many underprivileged students, the Pell grant made available by the Higher Education Act had provided increased access to higher education with its strong purchasing power of a college education (Goldrick-Rab et. al, 2016). Lower income students who had previously been priced out of the system had now found doors being opened to them. Not only did these students find themselves

in the door, but it has also been suggested that the availability of grants bolsters their persistence and completion (McCreight & LeMay, 1982). However, with the Pell grant becoming ever weaker in its ability to cover college costs, those at the bottom of the income distribution have been tasked to finance college through strategies such as taking on loans and beginning their education at more non-traditional colleges.

Where a student enrolls matters. As those from disadvantaged backgrounds were increasingly expected to borrow to finance their education from the declining value of government grants and increasing tuition costs, these students chose to enroll at community colleges and for-profits where the price of education was assumed to be cheaper. As a result, non-traditional institution, namely community colleges and for-profit schools, accommodated these students (Baum & Ma, 2006). These students were convinced that these institutions provided the most affordable (and only) educational option (Dwyer et al, 2012 and McKinney & Burrige, 2015). But these schools, although marketed towards lower income students, tended to have fewer financial aid resources that would allow for students to not finance college through loans. From this, for-profit schools have been reported to have the highest percentage of students with debt and the most of it (NPSAS, 2008).

### **3. The Great Recession, Student Debt, and Loan Repayment**

With the rise of student debt for those attending American universities, there has been much discussion regarding what student debt burden meant for those who graduated and entered the labor force. The return of a bachelor's degree has been proven, both with income and

employment rates; however, for some bachelor's holders, they found that they had become distressed with the debts taken on to finance their education. For those who graduated during the Great Recession, there was especially a sense of uncertainty regarding how well they would be able to manage their debts.

The economic downturn that began in December 2007, later termed “the Great Recession,” was considerably the deepest recession in the postwar era, accompanied by a slow and drawn out recovery (Elsby et al., 2010). In the years building up and into this period, many Americans watched their homes devalue and experienced an upswing in unemployment and underemployment rates as the housing and labor markets turned against their favor (Hurd & Rohwedder, 2010). Students had found shelter from the soured labor market in higher education institutions, but found that graduation meant entering into loan repayment as the recession and its slow recovery were still ongoing (Looney & Yannelis, 2015). During college, these students had experienced an expansion of credit and shifting financial aid packages, which allowed for them to borrow at higher rates than seen before. These students left with higher debt loads than previous generations (Hillman, 2014), causing uncertain manageability.

As student debt levels rose, many pointed to the profound implications these had on student success and post-graduation outcomes. The Great Recession led many to question whether possessing a bachelor's degree guaranteed employment, never mind a sufficient income that would be able to cover student loan repayments. Supportive of this, an emergent divide in wages appeared between degrees which not only varied by economic class of the student, but also by institution type, showing that higher education had produced a heterogeneous return on

investment (Zhang & Thomas, 2005). One reason for this may be the result of those at the bottom of the income distribution had found that they were unlikely to be placed well in the job market upon graduation-an outcome of being sorted into non-traditional colleges, with their tendency of being non-selective and lower in education quality (Looney & Yannelis, 2015). The variability in outcomes for graduates had especially hurt those who attended a for-profit or two-year institution, whose debt burdens have been historically lower compared to those who took more traditional routes through college (Looney & Yannelis, 2015). So, not only do those from for-profits have higher debts and likelihoods of default, they were also unable to fall back on familial support when repayment becomes crippling.

Implications of these levels of debt are certain. For student borrowers, debt burden is able to be measured by the ratio of monthly loan payments against their monthly gross income (Price, 2004). Choy & Li (2006) suggest that the likelihood of default is positively associated with larger debt burdens. Further, those most burdened are found to be those from lower income families and those who attended more non-traditional institutions, such as a for-profit college (Looney & Yannelis, 2015 and Deming et al., 2012). Other research suggests that the level of debt itself is a predictor of manageability, but findings in this literature have diverging arguments, with Baum (2001) suggesting that those with lower levels of debt have the most trouble, while Brown et al. (2014) posit that higher debt levels increase likelihood of poor manageability.

Although much of the literature in student loan default has demonstrated that there was a rise in borrowing and non-repayment in recent years, the extreme disparities across institution

type that appeared may have been become harshened by the inclusion of students who dropped out of higher education before completing their degree (Looney & Yannelis, 2015 and Hillman, 2014). Evidence shows that students who attended more non-traditional schools have a greater likelihood of dropping short of attaining a degree than their peers who attended public and private nonprofit four-year schools. As this is the case, inclusion of these students in the measurements may greatly skew the reporting for debt repayment success across institutional type.

It has been shown that those who exit higher education without credentials are placed poorly in the labor market and earn incomes that are unable to cover loan repayment installments. Because of this, then, there is need to examine the likelihood of loan default among baccalaureate graduates across the institution type they had begun their higher education journey with. By using the possession of a baccalaureate degree as the starting point to examine repayment on educational loans, we may be able to better assess outcomes keeping in mind the promise of economic success that had been assumed to accompany the attainment of a baccalaureate degree.

#### **4. Hypothesis**

The expansion of credit to finance higher education has been suggested to have increased the educational opportunities for many who had previously been priced out of college (Price, 2014). With the rising amount of students who borrow to finance college, there have also been an increasing number of students who default on their loans, calling into question who is at risk.



Although it has been suggested that taking on loans helps students complete college (Dwyer et al., 2012), much risk for loan default has been associated with certain student populations, such as those who attended more non-traditional institutions and those from lower income families.

As institutions that provide opportunity towards upward mobility and give claim to the American middle class, colleges and universities have attracted an increasing number of students during a time when doors were opening and credit expanded. For students and graduates across institution type, and especially for those from economic disadvantaged families, the Great Recession was synonymous with uncertainty. Those graduating during this time had taken on loans with the impression that the payoff was certain. However, the recession created a moment when the payoff of a bachelor's degree had been reconsidered. Graduation meant that the ability to reach the middle class felt more like an empty promise (Houle, 2014).

Where a graduate began their postsecondary career matters; I expect there to be differences in loan repayment of graduates across the types of institution first attended. Studies of educational loans show that debt becomes burdensome for those who attended more nontraditional institutions, such as for-profits and community colleges. A possible sorting mechanism exists that places students into certain institutions and this placement has been suggested to be stratified along social and economic characteristics. Because outcomes also vary across institution type, those who attended more traditional four year schools have been shown to have better labor market placements and ability to manage debt than those who attended a nontraditional school (Hillman, 2014). Unsurprisingly, having strong occupational outcomes and aversion of becoming unemployed allows for a graduate to better manage their student loans.

Because of this, the type of institution first attended matters when it comes to how graduates are able to handle their burdens of debt.

## **5. Data and Methods**

Data for this study comes from the nationally representative *Baccalaureate & Beyond Longitudinal Study* conducted by the United States Department of Education's National Center for Education Statistics (*Baccalaureate & Beyond 07/08*). The *Baccalaureate & Beyond* study is used to describe the enrollment and employment behavior of the 2007-08 cohort of college graduates<sup>1</sup> ( $n \approx 17,160$ ). Administrative and survey data were collected for the 2007-08 academic reportings, followed by graduates responding to surveys one and four years after graduation. This survey is ideal for my study, given its particular focus on undergraduate debt and repayment behavior of student borrowers following graduation.

While the full survey sample includes those that did not take out a loan to finance their education, I want to look at those who did. Accordingly, my constructed sample for analysis includes approximately 13,500 borrowing students who graduated from 1,960 institutions that were eligible for Title IV funding. I examine the first institution type respondents had attended, a variable that includes public and private not-for-profit four-year institutions as well as community colleges and for-profit institutions. Because of this measure, respondents from more non-traditional institutions had to transfer to four-year schools in order to complete their bachelor's degree. For repayment statuses, the National Center for Education Statistics includes a

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<sup>1</sup> This differs from other studies, where cohorts may be of those who began repayment in the same year or those who took out their first educational loan in the same year (Looney & Yannelis, 2015).

summary for all loans taken to finance undergraduate education, including those from federal and private sources. For respondents that did borrow, they could indicate if they were deferring on their loan payments, were currently in repayment<sup>2</sup>, had already paid off or had their loans forgiven, or had defaulted<sup>3</sup> on their student loans.

For repayment, I aim to compare those who had their loans end up in default against those who were able to successfully repay. Since handling educational debt successfully has been associated with the debt-to-income burdens straddled by graduates, I look towards yearly income and cumulative amount borrowed to express burdens. Common rule of thumb for students who borrow to finance their education is to not get into debt that exceeds 8% of their monthly income post-graduation. With this notion, I had included the measurement of the debt burden ratio Choy & Li (2006) presented, which is a rationalization of the monthly gross income of the student following graduation and the monthly payments for undergraduate loans.

### *Methodology*

I examine differences in ability to handle educational debt for 2007-08 graduates using logistic regression, reported as odds ratio. The odds ratio is a measurement that explains the association between the exposure of a variable and the outcome. The odds ratio allows for statistical inferences regarding repayment while controlling for other variables.

The dependent variable for my analysis is the indication of debt repayment distress

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<sup>2</sup> For those who are currently in repayment, all methods are captured, such as income-based repayment and graduated.

<sup>3</sup> The NCES follows the definition of default as being a loan that is 270 days past due.

following graduation. Distress is measured on whether a graduate had defaulted on their loans as of 2012. Although the dichotomization of the dependent variable may lose statistical efficiency, it is important in understanding the behavior of repayment and student loan default. Because educational debt may be a burden to some more so than others, looking graduates by the institution type they first attended may give insight to the certain disparities in that may exist with debt repayment.

Factors associated with debt load and a student's ability to pay in the literature yield variables that can be understood at the student and institutional level. Therefore, the variables included in my study that may contribute to amassing debt are: type of institution that the graduate first attended, cumulative amount of undergraduate debt, student background, college experiences, and post-graduation experiences.

### *Key Variables*

To measure the institution first attended, I modified the *Baccalaureate & Beyond* study's categorization of schools, looking at the variable of institution type as: public four-year, private not-for-profit four-year, community colleges, and for-profit schools<sup>4</sup>. This follows the logic that most students traditionally start their college career at a public or private not-for-profit four-year institution (Looney & Yannelis, 2015). This common understanding had pointed me towards assessing those who enroll in these "traditional" institution types against those who enroll in other "non-traditional" institutions, such as community colleges and for-profit institutions.

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<sup>4</sup> Refer to appendix for variable construction

Cumulative amount of undergraduate debt includes all loan sources, federal and private, that were used to finance undergraduate education. This study only includes graduates who borrowed to pay for their college.

Student background was measured with the family income reported in 2006 and the racial/ethnic background of the student. To measure family income, I use the quartiles as recommended by the NCES. These quartiles are then replicated for the 2009 and 2012 personal income reporting to consistently model the economic classes these graduates had left. I treat the income reported for 2006 as family income because this reporting may include the income of a dependent student's parents or the income of an independent student. My definition of respondent class is derived from this reporting as origins are better able to represent one's standing than their personal income following graduation. Race and ethnicity is then categorized by self-reporting of the respondents.

College experiences may bear influence on how much a student is expected to borrow for their education as well as their preparation for post-graduation employment. I include the time from first enrollment to degree completion, undergraduate GPA, whether the respondent had received the Pell grant, and employment experiences while enrolled.

In looking at post-graduation experience, the placement of these students in the labor market is to be captured with personal annual income for 2009 and 2012. Income in the years following graduation, which coincided with the recovery period following the recession, is important to look at. Many of these students had experienced a time when unemployment and underemployment had affected nearly everyone and had marked everyday conversation. With a

bachelor's degree, this reporting gives clue to their ability to secure employment during this recovery period.

### *Limitations*

Despite what this analysis is able to contribute to the discussion regarding student loan default, it is limited in the following ways. First, loan distress can make itself apparent through deferment and forbearance on loans, however, the *Baccalaureate & Beyond* survey had differentiated the questioning for repayment statuses between 2009 and 2012<sup>5</sup>. Thus, in looking at default as the outcome for loan repayment distress, I follow Hillman's (2014) model by examining students who were able to avoid defaulting on their student loans against those who were able to make payments on time.

Second, the type of institution a student had first attended is not necessarily the key determinant of their success following college. Although this has been suggested, past demonstrations have highlighted a possible sorting mechanism of students into beginning at different institution types.

Third, all institutions included in the *Baccalaureate & Beyond* survey were Title IV eligible, allowing for me to study the ways that federal funding had impacted students who had attended the many different kinds of colleges and universities in the United States<sup>6</sup> that are able to grant associate's degrees or higher. This distinction indicates that these graduates entered the

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<sup>5</sup> In asking about the repayment status of their student loans, respondents could indicate if they were in deferral or forbearance in 2009. In 2012, respondents were only provided with the choice to indicate deferral (NCES, 2015).

<sup>6</sup> Of those who borrowed student loans, 45% borrowed strictly from federal sources, 48.4% from both federal and nonfederal sources, and 6.4% from strictly nonfederal sources.

labor market with credentials from schools that were expected to maintain their eligibility to receive federal funding. Since some for-profit and other less-than-four year institutions are Title IV ineligible (Deming et al., 2012), exclusion of these other institutions<sup>7</sup> and their students possibly understates the behavior of all graduates from this period and therefore, the instance of certain reporting in this study may be slightly skewed.

Fourth, although much of what has become the debt crisis is driven by those who went to college but did not earn a degree, there is reason to believe that this crisis had touched those who did graduate. Because this study looks at those who graduated with a baccalaureate credential, the differences in repayment success across institutions may not be as polarizing as they would be with the inclusion of those who dropped out.

Fifth, institutional characteristics that have estimated effects, positively and significantly, include selectivity, quality, and cost of attendance. Constrained by the scope of this analysis, I will be limited to measures that are less sensitive. Zhang (2003) posits that the effects of quality vary on the interpretations of “quality.” The same logic would apply to selectivity, as evaluation of selectivity can be done through admission rates, standardized test scores, GPAs, or other measurements. Costs of attendance were left out of my study, a decision derived from the complex multitude of circumstances that affect how educational costs vary among social groups and across institutions. Despite all of these limitations, the *Baccalaureate & Beyond* sample offers a nationally representative sample of how graduates have been able to handle loan

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<sup>7</sup> In many states, the number of for-profit Title IV ineligible schools outnumber institutions that are eligible. These schools are estimated to educate approximately 670,000 students. (Cellini & Goldin, 2012)

repayment following the Great Recession. Further, I believe that I am able to explain the repayment behaviors of graduates during the recovery period following the Great Recession.

## **6. Findings**

Student loan default as it relates to institution type a graduate first attended can be summarized by four key findings. First, there emerged differences in the prevalence of debt distress across institution type that graduates started their undergraduate education at. Second, those from underprivileged backgrounds had a harder time at managing their debt. Third, debt burden is higher for those who started at a for-profit college. Fourth, across institution type, there was evidence of difference in odds for repayment distress, without controlling for post-graduation outcomes.

### *Descriptive Results*

Average debt and rates of loan repayment statuses by institution type and respondent class are reported in Table 1. For the *Baccalaureate & Beyond* study, 71.6% had borrowed at some point during their education to cover costs and it is these student borrowers that are my sample. The average amount borrowed to finance education was \$24,0482.40, but for those who defaulted, their loans amounted to \$31,413.70. Similarly, the average salary for all graduates in 2012 was \$44,975.40; for those that had defaulted, their average salary was \$36,648.60 (Table 2).

Those who first attended for-profit institutions were more likely to borrow, and borrow



more, to finance their undergraduate education. In the sample, only 10.3% of these for-profit students were able to avoid borrowing for college. For these for-profit student borrowers, their average debt was \$35,416.90, a much higher level of debt than the \$25,048.20 that was expected among all students during the period. When looking at burden of debt, we can reasonably assume that this burden among all borrowing graduates comes from one of two sources: the cumulative amount borrowed to finance college education or their income post-graduation. Going along with higher levels of debt, for-profit students also shouldered higher debt burdens than their peers who began elsewhere (Table 2). However, there were not any significant differences in 2012 salary across institution type (Table 2). So, for those who first enrolled at a for-profit institution, their relative success in the labor market was not able to lighten the load of their educational debt. Not surprisingly, from this, those who experienced repayment distress had higher debt burdens than those who were in some type of repayment status (Table 2).

By 2012, educational debt had become distressful for 3.4% of all graduates who borrowed to finance college (Table 1). For student borrowers who began at a for-profit institution, 8.1% had defaulted on student loans, while students who first enrolled at a public or private not-for-profit four-year school or community college had a similar default rate to the sample mean (Table 1).

Although students who attended community colleges and for-profit institutions during this period tended to come from similar family backgrounds, those who first enrolled at a community college were able to have similar experiences with debt as students who first enrolled at public and private not-for-profit institutions (Tables 1 and 2).

Despairingly, by 2012, nearly 9% of all students who began their education at a for-profit institution had defaulted on any educational loan, considerably more than for borrowers who enrolled at a community college, public four-year, or private not-for-profit four-year institution (Table 1). Given that the default rate for all student borrowers who graduated college in the 2007-08 academic year was 3.6%, this is significant. Furthermore, there are certainly indicators that those who graduated in 2008 faced financial distress, with 13.9% of borrowers reporting in 2012 that they had deferred payments on their loans. Deferment is a strategy that allows for students to delay repayment on the principal and interest of their student loan.

The cumulative amount of debt incurred depends on a multitude of reasons including family financial resources a student had been able to draw upon, amount of aid received for college, tuition price, and time to degree. The larger cumulative debts of students who first attended for-profit institutions may be a function of higher tuition prices, extended time for degree completion, and the higher likelihood to have come from an economically disadvantaged family than their peers.

An aspect of the college experience is the length of time to graduation, a variable that takes away from potential earnings of the student and may force some to fund the added time with debt. Although a bachelor's degree is expected to be completed within four years, six year degree completion is a popular measurement of successful earning of a bachelor's degree by many sources. Across all institutions, the average length to degree completion was 79.1 months, with only 4 in 10 students being able to complete their degree within four years and 9 in 10 within six years. This completion marker was more likely to be achieved by those who had first

enrolled at more traditional public and private not-for-profit four-year institutions (80% and 85.6% respectively, Table 3). For those who attended community colleges and for-profits, nearly half of these students were able to complete their degree within this time frame (50.1% and 45.3%, respectively).

### *Multivariate Models*

The results suggest that the institution first attended had a significant influence on the amount borrowed to finance attendance, showing that the debt incurred does vary by institution type. The results also suggest that the perspective that higher education serves as an equalizing mechanism among graduates may wrongly assume that higher education equalizes the likelihood for repayment success regardless of institution type first enrolled.

For my analysis, I examined the variables that influence the amount borrowed to finance education and the experiences graduates have after college. Without controlling for cumulative debt, student characteristics, college experiences, or post-graduation experiences, student borrowers who first enrolled at a for-profit institution had around 0.66 lesser times the odds of defaulting on their student loans than their peers who had begun elsewhere (Table 4). In model 2, I had controlled for cumulative debt. The odds of for-profit students to default decreased by nearly 0.10 compared across other institutions (Table 4). The addition of student characteristics decreased the odds some more, although not as drastic (Table 4). This shows that much of the difference in likelihood to become distressed with educational loans is not largely accounted for by student characteristics such as race, ethnicity, or family economic class.

From this, I accounted for college experiences in model 4, which had increased the odds of default for graduates who first enrolled at a for-profit institution when compared to those who began at a community college—a reversal of the trend from the previous models (Table 4). In this model, those who first enroll at a community college had 0.56 lesser times the odds of default than those who began at a for-profit (Table 4). Odds of distress between public and private not-for-profit four-year institutions became insignificant. This insignificance suggests that these college experiences of receiving a Pell grant, time to degree, undergraduate GPA, and employment while enrolled all, to some degree, contribute to the differences between likelihood for distress between students who began at a public or private nonprofit college and those who started at a for-profit school.

In the last model, I had controlled for post-graduation experiences. These included incomes received in 2009 and 2012 as well as experience with unemployment. The addition of these experiences had rendered differences in loan repayment distress across institutions insignificant, suggesting that these experiences do explain the difference in loan repayment for students who began college during this period.

## **7. Summary and Discussion**

The emergence of loan distress differences among college graduates in 2007-08 is consistent with what had been suggested by previous studies that had looked at repayment among those who exited college with or without a degree. Across institution type, those who began their education at a for-profit school had greater times the odds of becoming distressed

with their student loans than their peers who began elsewhere, including community colleges. Although lower income students have been suggested to be more likely to first enroll at a more non-traditional institution, those who began at a community college were able to handle their student debts similar to those who began at a traditional four year institution. However, although cumulative amount of debt was consistent across class, it was not across institution type, with those at the bottom of the income distribution and those who began at for-profits having a harder time with their debts.

This study provides evidence that loan repayment is not equal across institution type a graduate had begun college at. In order to reduce student loan distress moving forward, there is a need to better understand the mechanisms that have created what has been termed “the student loan crisis.” This would require looking further into who first enrolls at certain institutions and why they do so. However, for this to happen, there is the overwhelming need to have accessible and consistent data that accurately measures the contributing factors to distress that arise from student characteristics, educational experiences, institution variability, and employment outcomes. It would also be beneficial to look at the types of loans most affect those who default, and if there is a divide in manageability between federal and private loans across institution type. A deeper look at for-profit institutions may also provide valuable insight to student sorting, education, graduation, and job placement in comparison to other institutions.

**Table 1: Descriptive Statistics**

|  | <i>Mean Debt</i> | <i>Std. Dev.</i> | <i>Defaulted Mean</i> | <i>Defaulted Std. Dev.</i> |
|--|------------------|------------------|-----------------------|----------------------------|
| <i>Total</i>                             | 25048.20         | 286.350          | 3.4                   | 0.30                       |
| <b><i>Institution Type</i></b>           |                  |                  |                       |                            |
| <i>Public Four-Year</i>                  | 21884.40         | 357.390          | 3.3                   | 0.39                       |
| <i>Private not-for-profit Four-Year</i>  | 28859.60         | 616.690          | 2.9                   | 0.51                       |
| <i>Community College</i>                 | 25441.70         | 541.460          | 3.6                   | 0.69                       |
| <i>For-Profit</i>                        | 35416.90         | 1588.64          | 8.1                   | 2.43                       |
| <b><i>Cumulative Amount Borrowed</i></b> |                  |                  |                       |                            |
| <i>\$1-12000</i>                         |                  |                  | 2.2                   | 0.46                       |
| <i>\$12000-20519</i>                     |                  |                  | 3.3                   | 0.65                       |
| <i>\$20520-32371</i>                     |                  |                  | 3.1                   | 0.65                       |
| <i>\$32372 or more</i>                   |                  |                  | 6.0                   | 0.78                       |
| <b><i>Family Income</i></b>              |                  |                  |                       |                            |
| <i>\$1-27,799</i>                        | 25428.50         | 534.960          | 4.9                   | 0.60                       |
| <i>\$27,800-62,099</i>                   | 25602.30         | 533.230          | 3.5                   | 0.65                       |
| <i>\$62,100-105,899</i>                  | 25449.70         | 579.950          | 3.0                   | 0.55                       |
| <i>\$105900 or more</i>                  | 23166.50         | 798.970          | 1.3                   | 0.35                       |
| <b><i>Repayment</i></b>                  |                  |                  |                       |                            |
| <i>Repayment Distress</i>                | 31413.70         | 1709.56          |                       |                            |
| <i>Repayment Statuses</i>                | 24991.10         | 289.020          |                       |                            |

**Table 2: Descriptive Statistics**

|   | <i>Family Income 2006</i> |         | <i>Annual Salary for 2009</i> |         | <i>Annual Salary for 2012</i> |         | <i>Debt Burden</i> |      |
|---|---------------------------|---------|-------------------------------|---------|-------------------------------|---------|--------------------|------|
|   | M                         | SD      | M                             | SD      | M                             | SD      | M                  | SD   |
| <i>Total</i>                            | 75095.2                   | 908.68  | 34554.5                       | 323.14  | 44975.4                       | 396.99  | 66.6               | 0.56 |
| <b><i>Institution Type</i></b>          |                           |         |                               |         |                               |         |                    |      |
| <i>Public Four-Year</i>                 | 76223.0                   | 1278.43 | 34307.6                       | 490.15  | 44606.6                       | 642.27  | 64.7               | 0.85 |
| <i>Private not-for-profit Four-Year</i> | 92402.3                   | 1799.53 | 32888.4                       | 617.39  | 44272.0                       | 676.46  | 68.1               | 0.94 |
| <i>Community College</i>                | 53523.5                   | 1532.73 | 36513.6                       | 634.69  | 46256.8                       | 1106.06 | 67.1               | 1.06 |
| <i>For-Profit</i>                       | 49346.4                   | 4286.96 | 39145.3                       | 2132.81 | 46500.9                       | 2302.69 | 77.9               | 3.03 |
| <b><i>Family Income</i></b>             |                           |         |                               |         |                               |         |                    |      |
| <i>\$1-27,799</i>                       | 13479.3                   | 238.66  | 31863.1                       | 441.24  | 40842.8                       | 632.09  |                    |      |
| <i>\$27,800-62,099</i>                  | 44004.8                   | 275.75  | 34150.7                       | 521.62  | 43845.3                       | 938.40  |                    |      |
| <i>\$62,100-105,899</i>                 | 83859.9                   | 335.18  | 36265.5                       | 720.43  | 45202.3                       | 931.80  |                    |      |
| <i>\$105,900 or more</i>                | 161736.6                  | 2076.21 | 36003.9                       | 771.31  | 50027.3                       | 911.53  |                    |      |
| <b><i>Repayment</i></b>                 |                           |         |                               |         |                               |         |                    |      |
| <i>Repayment Distress</i>               | 47187.1                   | 3435.77 | 29489.7                       | 1564.56 | 36648.6                       | 1764.57 | 79.3               | 1.94 |
| <i>Repayment Statuses</i>               | 69415.6                   | 959.610 | 33353.8                       | 339.56  | 43299.9                       | 422.33  | 66.1               | 0.57 |

**Table 3: Months to Degree Completion**

|   | <i>1-48 months</i> |           | <i>49-72months</i> |           | <i>More than 73 months</i> |           |
|---|--------------------|-----------|--------------------|-----------|----------------------------|-----------|
|   | <i>M</i>           | <i>SD</i> | <i>M</i>           | <i>SD</i> | <i>M</i>                   | <i>SD</i> |
| <b>Total</b>                            | 40.9               | 0.68      | 32.9               | 0.66      | 26.1                       | 0.68      |
| <b><i>Institution Type</i></b>          |                    |           |                    |           |                            |           |
| <i>Public Four-Year</i>                 | 40.2               | 0.97      | 39.9               | 0.98      | 20.0                       | 0.82      |
| <i>Private Not-for-profit Four-Year</i> | 65.4               | 1.39      | 20.2               | 1.48      | 14.3                       | 0.93      |
| <i>Community College</i>                | 14.9               | 0.93      | 35.4               | 1.26      | 49.7                       | 1.43      |
| <i>For Profit</i>                       | 21.7               | 4.54      | 23.5               | 3.31      | 54.7                       | 4.65      |
| <b><i>Income Reported in 2006</i></b>   |                    |           |                    |           |                            |           |
| <i>\$1-27,799</i>                       | 20.3               | 0.97      | 35.7               | 1.31      | 44.0                       | 1.40      |
| <i>\$27,800-62,099</i>                  | 33.5               | 1.21      | 32.6               | 1.20      | 33.8                       | 1.42      |
| <i>\$62,100-105,899</i>                 | 50.5               | 1.31      | 31.2               | 1.28      | 18.3                       | 1.14      |
| <i>\$105,900 or more</i>                | 62.6               | 1.29      | 30.8               | 1.30      | 6.50                       | 0.67      |



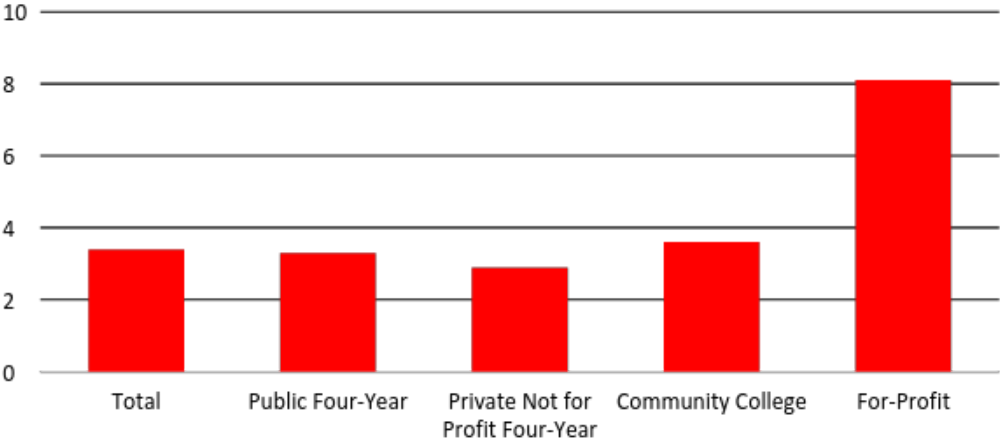
**Table 4: Logistic Regression**

|   | <i>Model 1</i>    |                | <i>Model 2</i>    |                | <i>Model 3</i>    |                | <i>Model 4</i>    |                | <i>Model 5</i>    |                |
|---|-------------------|----------------|-------------------|----------------|-------------------|----------------|-------------------|----------------|-------------------|----------------|
|   | <i>Odds Ratio</i> | <i>p-value</i> | <i>Odds Ratio</i> | <i>p-value</i> | <i>Odds Ratio</i> | <i>p-value</i> | <i>Odds Ratio</i> | <i>p-value</i> | <i>Odds Ratio</i> | <i>p-value</i> |
| <i>Public Four-Year</i>                         | 0.325             | 0.000          | 0.514             | 0.046          | 0.542             | 0.072          | 0.509             | 0.053          | 0.788             | 0.690          |
| <i>Private Not-For-Profit Four-Year</i>         | 0.331             | 0.001          | 0.391             | 0.009          | 0.491             | 0.053          | 0.515             | 0.076          | 0.733             | 0.614          |
| <i>Community College</i>                        | 0.386             | 0.001          | 0.485             | 0.023          | 0.511             | 0.046          | 0.443             | 0.021          | 0.710             | 0.572          |
| <i>Cumulative Loan Amount for Undergraduate</i> |                   |                | 1.000             | 0.000          | 1.000             | 0.000          | 1.000             | 0.001          | 1.000             | 0.001          |
| <i>Family Income</i>                            |                   |                |                   |                | 1.000             | 0.005          | 1.000             | 0.114          | 1.000             | 0.609          |
| <i>Black or African American</i>                |                   |                |                   |                | 2.843             | 0.000          | 2.092             | 0.002          | 2.147             | 0.008          |
| <i>Hispanic or Latino</i>                       |                   |                |                   |                | 2.070             | 0.011          | 1.928             | 0.029          | 1.573             | 0.212          |
| <i>Asian and Pacific Islander</i>               |                   |                |                   |                | 0.993             | 0.993          | 1.047             | 0.952          | 0.246             | 0.417          |
| <i>Other and More than one race</i>             |                   |                |                   |                | 2.724             | 0.048          | 2.648             | 0.051          | 2.426             | 0.233          |
| <i>Employed While Enrolled</i>                  |                   |                |                   |                |                   |                | 1.298             | 0.267          | 1.268             | 0.482          |
| <i>Time to Degree</i>                           |                   |                |                   |                |                   |                | 1.004             | 0.000          | 1.005             | 0.000          |
| <i>Undergraduate GPA</i>                        |                   |                |                   |                |                   |                | 0.994             | 0.005          | 0.993             | 0.006          |
| <i>Pell Grant Recipient</i>                     |                   |                |                   |                |                   |                | 1.172             | 0.538          | 1.360             | 0.294          |
| <i>Annual Salary for 2009</i>                   |                   |                |                   |                |                   |                |                   |                | 1.000             | 0.313          |
| <i>Annual Salary for 2012</i>                   |                   |                |                   |                |                   |                |                   |                | 1.000             | 0.121          |
| <i>Time Unemployed</i>                          |                   |                |                   |                |                   |                |                   |                | 1.026             | 0.053          |

**Table 5: Months Unemployed Since Bachelor's Degree**

| <i>Months Unemployed since Bachelor's Award Date as of 2012</i> |          |           |
|---|----------|-----------|
|   | <i>M</i> | <i>SD</i> |
| <i>Total</i>  | 3.2      | 0.11      |
| <b><i>Institution Type</i></b>                                  |          |           |
| <i>Public Four Year</i>   | 3.0      | 0.13      |
| <i>Private Four Year</i>  | 3.2      | 0.17      |
| <i>Community College</i>  | 3.2      | 0.26      |
| <i>For Profit</i>   | 5.4      | 1.26      |
| <b><i>Repayment</i></b>   |          |           |
| <i>Repayment Distress</i>                                       | 5.5      | 0.12      |
| <i>Repayment Statuses</i>                                       | 3.3      | 0.17      |

**Table 6: Repayment Distress by Institution Type First Enrolled**



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