

Different degrees of debt: Student borrowing in the for-profit, nonprofit, and public sectors

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INTRODUCTION

College student loan debt has become a central focus of students and policymakers in the United States. Over the past ten years, outstanding student loan debt has more than tripled to \$1.2 trillion—\$1 trillion of it backed by the federal government (Chopra 2013; Federal Reserve Bank of New York 2013). Today, nearly 60 percent of full-time undergraduate students take out loans—an increase of 75 percent over the previous two decades—and these students borrow an average of \$20,000 (NCES 2014, Tables 331.5 and 331.6). These rising debt levels have raised concerns related to an array of public and private risks: student repayment burdens and diminished returns to college; challenges with the administration of public loan programs; and macroeconomic implications surrounding reduced consumption and public risk sharing.

Student loan debt levels have escalated during a period in which the emergence of the for-profit sector has transformed the higher education landscape. Between 2000 and 2010, enrollment in for-profit colleges more than tripled, rising from about 650,000 to close to 2.5 million and the sector's share of total enrollment rose from four percent to 11 percent (NCES 2014, Table 303.20).

Since about 2010, disproportionate levels of federal taxpayer support combined with relatively high student loan default rates, low graduation rates, and allegations of fraud, have

An understanding of how, why, and which students take on debt is crucially important in measuring higher education performance and in the design of financial aid systems that protect taxpayer interests and support student success.

generated public scorn and prompted new regulations aimed at the for-profit sector.¹ The Obama administration's 2014 "Gainful Employment" regulations for the first time restrict federal student aid to vocational programs based on the earnings-to-loan repayment rates of recent graduates (Federal Register 2014). The results of these efforts, along with state and federal investigations into the practices of individual institutions, have led to the bankruptcy, closure, and debt-relief for students at several large for-profit colleges, with the possibility of more closures to come (e.g., Lewin 2015, Fain 2015). Since its peak in 2010, for-profit enrollment declined by about 18 percent to just under 2 million students in 2012 (NCES 2014, Table 303.20).

In this brief, we explore the dynamic patterns of student borrowing across sectors of higher education since 1996. In particular, we examine the role of student demographics, financial need, work behavior, and educational costs in contributing to the trends in student borrowing. An understanding of how, why, and which students take on debt is crucially important in measuring higher education performance and in the design of financial aid systems that protect taxpayer interests and support student success.

BACKGROUND

Economic theory suggests that for-profit, nonprofit, and public postsecondary institutions generally share the same outputs—most notably, student learning—and therefore operate in the same, or at least overlapping markets.² Empirical evidence confirms that for-profit, nonprofit, and public institutions compete for students (Cellini 2009), yet different ownership models can engender different incentives—particularly with regard to federal student aid.

Exacerbating the potential conflict between student outcomes and the profit motive is the heavy reliance of for-profit institutions on public funding through federal student aid programs. For-profit colleges receive on average about 70 percent of their revenue through federal aid programs.

Although all sectors share concerns about costs and revenues, for-profit colleges, by their very nature, operate more like other privately-held businesses than their nonprofit or public sector competitors (Cellini 2009). Their for-profit status encourages them to be more nimble than public sector and (perhaps to a lesser extent) nonprofit institutions in meeting employer or student demands for skills. It also allows them to avoid some of the bureaucratic and regulatory hurdles faced by public institutions that can impede swift and innovative action (Deming, Goldin, and Katz 2012). Indeed, proponents credit for-profit colleges with "disruptive innovation" in higher education (e.g., Christensen, Horn, Caldera, and Soares 2011). These institutions have been at the fore-

front of efforts that have the potential to benefit students and expand access to higher education, such as flexible scheduling, online learning, and enhanced student services.

The profit maximizing motives of a for-profit college, however, may not necessarily be in line with the best interests of students or taxpayers. The quest for profits may mean, among other things, that these schools are less concerned about student outcomes (e.g., degree completion, employment, debt repayment) than institutions in other sectors.

¹ See, for example, Goodman (2010), the U.S. Government Accountability Office (2010), and the U.S. Senate Committee on Health, Education, Labor, and Pensions (2012).

² For clarity and ease of exposition, we refer to the private nonprofit sector simply as the "nonprofit" sector, since both for-profit and nonprofit colleges are private.

And even though there is some limited evidence that for-profit colleges place more emphasis on student advising and career counseling than public colleges (Rosenbaum, Deil-Amen, and Person 2006), colleges in the sector have also been heavily criticized for spending large sums on marketing and recruiting students, without considering whether the student is expected to succeed (U.S. Senate Committee on Health, Education, Labor, and Pensions 2012). In a market where prospective students may not have full information about their institutional choices, net costs, or potential outcomes, these conflicting incentives can be particularly harmful for students.

Exacerbating the potential conflict between student outcomes and the profit motive is the heavy reliance of for-profit institutions on public funding through federal student aid programs. For-profit colleges receive on average about 70 percent of their revenue through federal aid programs,³ and individual institutions are allowed to receive up to 90 percent, under the so-called 90-10 rule.⁴ Further, aid to military students and veterans does not count toward the 90 percent, so an even higher portion of for-profit funding may flow through the federal government. Near the sectors' peak in the 2010-2011 school year, for-profit students comprised about 11 percent of postsecondary enrollment, but received nearly one quarter of federal Pell Grant and subsidized student loan disbursements (Baum and Payea 2014). As we document in Section 3, the relatively disadvantaged socioeconomic backgrounds of students who attend for-profit colleges likely account for some of this aid utilization. However, research supports the contention that for-profit institutions may behave strategically to maximize taxpayer support (and therefore, profits) (Cellini 2010, Cellini and Goldin 2014) and until the recent Gainful Employment regulations, these colleges were unlikely to face accountability penalties for student outcomes (see Darolia 2013; and Cellini, Darolia, and Turner 2016 for analysis of the impact of these regulations).⁵

Finally, student borrowing may be of particular concern in the for-profit sector since default rates are higher in this sector than in others: around 16 percent of for-profit students default within three years of entering repayment, compared to just 12 percent and seven percent of public and nonprofit college students, respectively (U.S. Department of Education 2015).⁶ Further, Looney and Yannelis (2015) show that the increase in student loan defaults in recent years is concentrated among non-traditional students, who are disproportionately likely to attend for-profit and community colleges. With relatively higher borrowing among for-profit college students, this suggests that borrowing in this sector may be particularly risky for both students and taxpayers.

TRENDS IN STUDENT BORROWING

To examine trends in postsecondary borrowing and financing behavior of undergraduate students in the United States, we use restricted-access data on roughly 350,000 undergraduate students who attended college from 1996 to 2012. These data come from the individual records of the U.S. Department of Education's National Postsecondary Student Aid Study (NPSAS). Every four years, NPSAS combines institutional and governmental records with student surveys for a nationally-representative cohort of undergraduate students in federal aid-eligible institutions. We draw on the most recent five waves of the survey to analyze trends over time. We also use the most current wave (2011-12 school year) to highlight more detailed comparisons across sectors. We group schools into four distinct types: 1)

³ Authors' tabulations of data from the U.S. Department of Education (2016).

⁴ This figure is based on the largest source of federal funding to college students, programs under Title IV of the Higher Education Act.

⁵ Specifically, colleges could have lost eligibility for federal student aid programs if cohort default rates exceed 40 percent in one year or 25 percent-30 percent over three years (U.S. Department of Education 2016). From 2000 to 2010, just 29 colleges were subject to sanction under these regulations (Cellini, Darolia, and Turner 2016).

⁶ Based on three-year cohort default rates for the fiscal year 2012. Three-year cohort default rates for the fiscal year 2010 were 22 percent for the for-profit sector, 13 percent for the public sector, and eight percent for the nonprofit sector (U.S. Department of Education 2015).

for-profit institutions; 2) public institutions that offer programs of two years or less;⁷ 3) public institutions that offer four-year programs; and 4) private, nonprofit institutions. Both the for-profit and nonprofit groups include two-year and four-year institutions, but the composition of the institutions in each sector differs substantially. In 2013-14, almost 95 percent of private not-for-profit postsecondary institutions were four-year colleges, compared to just 53 percent of degree-granting for-profit institutions (NCES 2014, Table 317.20). We combine the two-year and four-year levels for these two sectors to avoid small sample sizes and to generate clear comparisons with previous literature that follows the same convention (e.g., Deming, Goldin, and Katz 2012).

We begin by describing borrowing behavior across sectors and over time. Overall, the patterns of for-profit student borrowing look most similar to nonprofit student borrowing. Table 1 presents the average borrowing behavior of students for the 2011-12 school year: 73 percent of for-profit students borrow money of some kind, compared to just 19 percent of public two-year students, 52 percent of public four-year students, and 63 percent of nonprofit students. As shown in Panel A, relative to students in the public sector, for-profit and nonprofit students are much more likely to supplement federal borrowing with borrowing from nonfederal sources, which tend to have less-favorable terms.

Table 1: Student borrowing

	For-Profit	Public ≤2-yr	Public 4-yr	Private Nonprofit
<i>Panel A: Rates of student borrowing</i>				
% that borrowed any loans	73%	19%	51%	63%
% that borrowed federal loans	71%	18%	49%	60%
% that borrowed nonfederal loans	13%	2%	7%	13%
<i>Panel B: Average per student borrowing (including all students)</i>				
Total loans in \$	6,179	953	4,368	7,027
Federal loans in \$	5,470	900	3,975	5,990
Subsidized federal loans in \$	2,204	451	1,623	2,193
Nonfederal loans in \$	709	52	393	1,037
<i>Panel C: Average loan amount for those who borrow each loan type</i>				
Total loans in \$	8,431	5,061	8,603	11,181
Federal loans in \$	7,673	5,036	8,136	9,928
Subsidized federal loans in \$	3,178	2,893	3,894	4,115
Nonfederal loans in \$	5,653	2,857	5,474	7,689

Notes: Survey weights used.

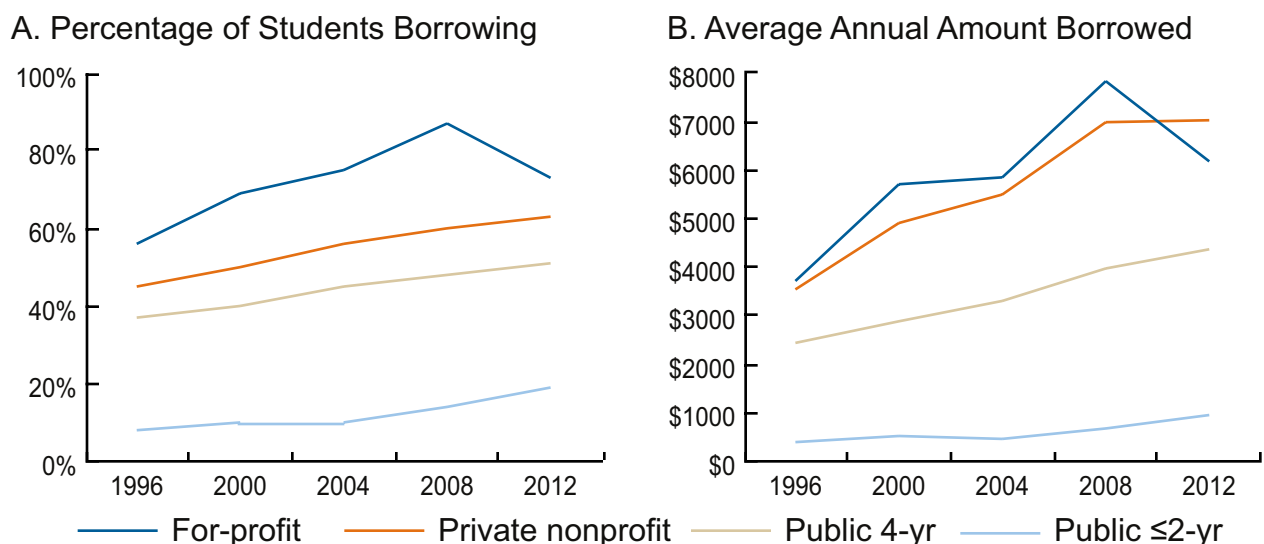
Source: Authors' tabulations of the 2011-2012 National Postsecondary Student Aid Study.

Figure 1A displays the trend in the percentage of students who borrow (from any source) from 1996 to 2012. While the relative position of schools in this trend stays constant, and all schools experience an overall positive upward trend in the percentage of students borrowing, the for-profit sector experienced a steeper initial climb followed by a sharp decline in recent years. Between 1996 and 2008, the for-profit sector experienced a 30 percentage point increase in the proportion of students borrowing. In contrast, over this same period, increases for the other three sectors were all below 15 percentage points. Between 2008 and 2012, however, borrowing in the other sectors

7 We use the terms “public two-year colleges” and “community colleges” interchangeably.

continued its slow and steady rise, while for-profit borrowing dipped—dropping from its peak of 87 percent back to just under its 2004 level of 73 percent.⁸

Figure 1: Trends in undergraduate student borrowing, by sector



Notes: All dollars in constant 2012 dollars. Survey weights used.
Source: Authors' tabulation of data from the National Postsecondary Student Aid Study

In addition to having the highest proportion of students borrowing, Table 1 also reveals that for-profit students have relatively high average annual total loan amounts, as shown in Panels B and C. The for-profit sample has an average debt load of over \$6,000 per year across all students (whether they borrow or not), a figure just slightly lower than nonprofit students. In stark contrast, public community college students borrow just \$950 annually, on average. Across all sectors, the vast majority of student borrowing flows through federal student loan programs, and about half of the federal total is made up of low-cost subsidized loans.

We display the trend of average student borrowing amounts in Figure 1B. Similar to the previous patterns, loan amounts have increased in all sectors, with a sharp decline in recent years only in the for-profit sector: 2012 is the first year in which nonprofit students' borrowing overtakes the for-profit sector.

The numbers in Figure 1B are annual borrowing figures, such that total debt would depend on the accrual over the time the student is in college. Therefore students in four-year programs will generally accrue more cumulative debt than students in two-year programs (we return to this point below). Another important consideration is that average per-student borrowing in Panel B of Table 1 and Figure 1B display averages that are taken across all students rather than just borrowers. Averages conditional on borrowing are listed in Panel C of Table 1. Averages for for-profit student borrowers increase to about \$8,400 since almost all students borrow, but the figures become much higher for other sectors due to their lower proportions of borrowers.

⁸ For more discussion of borrowing in 2007-08 and prior years, please see Cellini and Darolia (2015).

WHAT EXPLAINS STUDENT BORROWING?

Several factors could explain the observed differences across sectors. We discuss these factors in detail below.

ACADEMICS AND DEMOGRAPHICS

Dissimilarities in student demographics and the credentials that students seek, as displayed in Table 2, may be important drivers of borrowing behavior. Just under one-third of for-profit students are enrolled in certificate programs and a similar proportion are enrolled in associate's degree programs. About 40 percent are enrolled in bachelor's level programs (column 1), a much higher proportion than in previous years (in 2007-2008, the proportion of students enrolled in a bachelor's degree programs in for-profits was 27 percent).⁹ About 90 percent of students pursue bachelor's degrees in four-year public and nonprofits. Students at the public four-year and nonprofit colleges are most likely to attend college full-time and full-year, but for-profit colleges enroll the highest proportion of full-time part-year students (40 percent).

Table 2: Academics and demographics

	For-Profit	Public ≤2-yr	Public 4-yr	Private Nonprofit
<i>Panel A. Academics</i>				
Enrolled in a certificate program	28%	8%	1%	2%
Enrolled in an Associate's degree program	31%	82%	9%	5%
Enrolled in an Bachelor's degree program	40%	4%	89%	91%
Coursework only (No program enrollment)	1%	6%	1%	2%
Full-time, full year	32%	22%	54%	62%
Full-time, partial year	40%	15%	14%	16%
Part-time, full year	11%	27%	17%	10%
Part-time, partial year	17%	36%	15%	12%
<i>Panel B. Demographics</i>				
Female	64%	56%	55%	57%
Minority race/ethnicity	52%	44%	38%	35%
Age at the start of postsecondary education	24.0	21.9	19.7	20.2
Years delayed entry into postsecondary education	3.4	2.3	0.9	0.9
First generation immigrant	7%	10%	8%	6%
Current or past military service	9%	5%	3%	4%
Parent(s) completed HS or higher	84%	87%	93%	94%
Parent(s) completed Bachelor's degree or higher	22%	30%	48%	52%
Financially independent	80%	59%	36%	34%
Single parent	33%	18%	7%	9%
Number of dependents	1.0	0.6	0.3	0.3

Notes: Survey weights used.

Source: Authors' tabulations of the 2011-2012 National Postsecondary Student Aid Study.

⁹ Cellini and Darolia (2015).

Students also vary across sectors demographically, as displayed in Panel B of Table 2. Although for-profit students' borrowing patterns are similar to nonprofit students', their demographics are a stark contrast. For-profit students are demographically most similar to public two-year students, but even between these two sectors, many important differences remain. For-profits have the highest proportion of female and minority students, and students are almost twice as likely to have served in the military. They come from families with the lowest levels of parental education; only 22 percent of for-profit students in the sample have a parent who completed at least a bachelor's degree. In addition to the implied socioeconomic differences associated with education levels across sectors, the differentials in parents' college-going likely also reflect for-profit students' relative lack of knowledge about college options and financial aid.

Furthermore, for-profit students are, on average, the oldest students in the sample, with the highest age at the start of postsecondary education (24.0), and the longest number of years between secondary and postsecondary studies (3.4). Reflective of their older average age, most for-profit students are financially independent, and therefore are eligible to receive relatively low Pell Grant and need-based financial aid awards (Darolia 2015). They are also the most likely to be single parents, and have the highest average number of dependents among the sectors. Therefore, educational credit may be particularly important for these students who may have less access to the resources of parents or spouses, have higher needs for supporting children, and face challenges obtaining grant aid.

COSTS OF EDUCATION

Perhaps the most obvious and most frequently cited explanation for disproportionate borrowing of for-profit students relative to other sectors is simply the high tuition and overall price of a for-profit education. Table 3 displays several measures of the costs students incurred when attending colleges of different sectors.¹⁰ Nonprofits have average yearly gross tuition and fees totaling over \$21,000—more than \$11,000 higher than for-profits—while for-profit institutions have much higher average tuition and fees than either of the public sectors. Compared to students at public two-year colleges, average gross tuition and fees of for-profit students is nearly seven times higher. Comparing estimated cost of attendance (COA), which includes estimates of costs for books and supplies, transportation, and other living expenses, reveals similar relative sector positions. The trend of gross tuition and fees in Figure 2A shows the highest and most rapid growth at nonprofits. Echoing the patterns in student borrowing, for-profits again saw a fairly steep increase in tuition in the early years, with a slight decline between 2008 and 2012.

Grants of any type are perhaps the most important source of non-debt financing, and are particularly attractive since they lower the net cost of education to the student and typically do not need to be repaid. As shown in Panel B of Table 3, for-profit students have the second-lowest level of total grant aid, at \$2,835 per year. Nonprofit students receive by far the largest amount of grant aid, at \$11,000 annually. Breaking down the sources of grant aid reveals that for-profit students have higher average levels of federal grants than all other sectors but lower levels of other types of grant aid.

While institutions in the nonprofit sector appear to be trying to make tuition increases less painful for their students (or at least for some of their neediest students) through the provision of institutional aid, there is no evidence that for-profits have made the same effort.

¹⁰ All figures in this section are based on average costs per student (rather than full-time equivalent). Therefore, costs include differentials due to differences in enrollment patterns (full time/part time, full year/partial year) across sectors.

Table 3: Costs of education (in dollars)

	For-Profit	Public ≤2-yr	Public 4-yr	Private Nonprofit
<i>Panel A. Tuition and fees, Estimated Cost of Attendance (COA)</i>				
Gross tuition & fees	10,215	1,556	6,832	21,561
Tuition & fees minus grants	7,551	805	4,155	11,563
Cost of attendance	20,159	8,747	17,896	33,934
Cost of attendance minus grants	17,345	7,099	14,296	22,805
<i>Panel B. Grant aid</i>				
Total grants	2,835	1,659	3,589	11,006
Total federal grants	2,274	1,166	1,492	1,465
State grants	115	174	695	671
Institution grants	75	133	856	7,320
Veteran and Department of Defense aid	762	175	225	433
Outside grants (private & employer)	371	186	547	1,549

Notes: Survey weights used.

Source: Authors' tabulations of the 2011-2012 National Postsecondary Student Aid Study.

Reflective of the disproportionate military service in the sector, average veteran's and Department of Defense aid is higher in the for-profit sector than in others.¹¹

The largest difference in aid across sectors in Table 3 is funding that comes from the college itself. For-profit students receive little institutional aid, with an average of just \$75. The same figure is drastically higher at \$7,320 for students in the private nonprofit sector. We plot the trend of institutional aid in Figure 2B. Here we see a large increase in institutional aid in the nonprofit sector and little movement in institutional aid in the for-profit sector (or others). The effect of this aid on the costs to students is shown in the second row of Table 3 and in Figure 2C, where education prices net of grant aid in the for-profit sector remain relatively high and the gap between the net price of for-profit and public colleges has been increasing over time. Most striking is that the gap between gross prices of for-profit and nonprofit education closes substantially when taking into account grant aid.

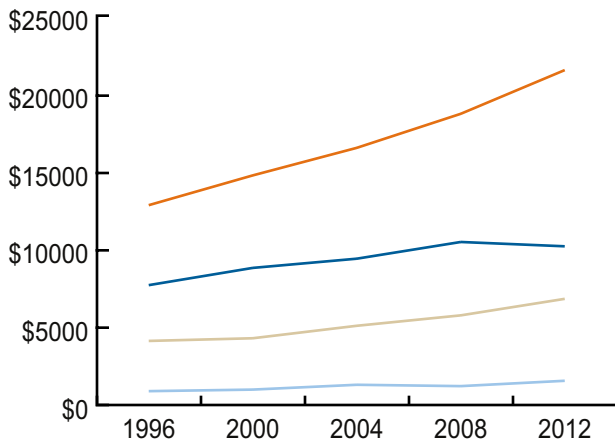
For-profit students have the lowest average annual household income, at just \$28,530...Even public two-year students seem to be much better off than their for-profit counterparts, with incomes averaging \$41,718.

These figures demonstrate that increasing sticker prices in the private nonprofit sector have been accompanied with an increasing (though not necessarily completely offsetting) amount of institutional aid. This pattern is consistent with a "high cost, high subsidy" strategy of college pricing among private nonprofits (Turner 2005), and to some extent mitigates the rise in student borrowing for this group of institutions. Presenting difficulty for for-profit students, however, is that the upward trend in this sector's prices is not met by a similarly rapidly increasing trend in aid. While institutions in the nonprofit sector appear to be trying to make tuition increases less

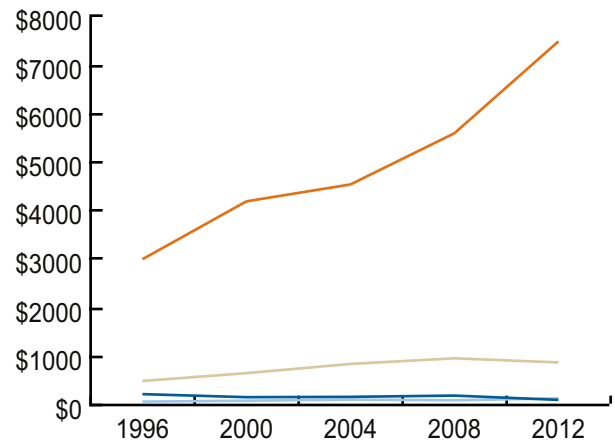
¹¹ Average military grant aid increased dramatically for for-profit students between 2008 and 2012 (see Cellini and Darolia 2015).

Figure 2: Trends in college costs and need, by sector

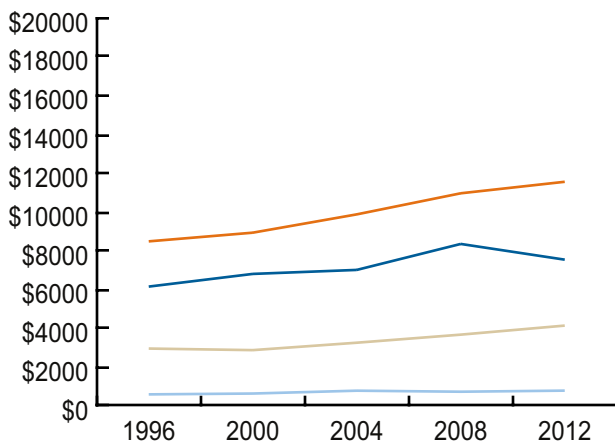
A. Average gross tuition and fees



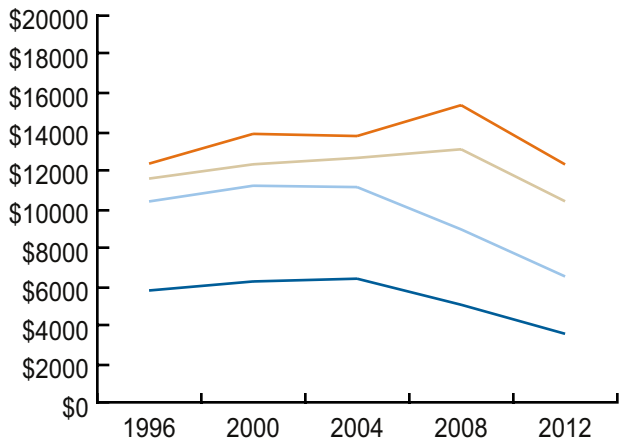
B. Average institutional aid



C. Average tuition, net of grants



D. Average expected family contribution



— For-profit — Private nonprofit — Public 4-yr — Public ≤2-yr

Notes: All dollars in constant 2012 dollars. Survey weights used.

Source: Authors' tabulation of data from the National Postsecondary Student Aid Study

painful for their students (or at least for some of their neediest students) through the provision of institutional aid, there is no evidence that for-profits have made the same effort. This leaves a gap in resources that has been filled by student loans that are paid for by students and taxpayers.

FINANCIAL RESOURCES AND EMPLOYMENT

We next examine student financial need, available resources, and work behavior that might explain the patterns of attendance and borrowing that we observe. Consistent with the demographic patterns described earlier, we observe relatively fewer personal financial resources for students in the for-profit sector, as displayed in Panel A of Table 4. In isolation, the lack of financial resources available to for-profit students may be sufficient to explain why borrowing is so high in the sector, but it does not appear to explain the steep increase in borrowing in the last decade.

Based on need and resources, for-profit students are most similar, but in many ways still less affluent, than public two-year students who pay much lower costs. For-profit students have the lowest average annual household income,

Table 4: Financial resources and employment

	For-Profit	Public ≤2-yr	Public 4-yr	Private Nonprofit
<i>Panel A. Financial resources</i>				
Expected family contribution (EFC) in \$	3,595	6,549	10,420	12,318
Adjusted gross income in \$	28,530	41,718	61,811	70,552
Percent of the poverty line	162%	229%	305%	337%
<i>Panel B. Employment</i>				
Works while enrolled	61%	68%	66%	64%
Works full-time while enrolled	36%	32%	20%	18%
Earnings from work while enrolled (if work) in \$	16,430	11,982	9,289	9,959
Hours worked per week while enrolled (if work)	34	31	26	23
Works off campus while enrolled	57%	65%	54%	42%

Notes: Survey weights used.

Source: Authors' tabulations of the 2011-2012 and 2007-2008 National Postsecondary Student Aid Study.

at just \$28,530, and are closest, on average, to the poverty line. Even public two-year students seem to be much better off than their for-profit counterparts, with incomes averaging \$41,718.

The Expected Family Contribution (EFC) is the result of a federal calculation that represents the amount the government expects students and their families to personally pay for their education. Reflective of their relative lack of resources, for-profit students' average EFC is about half that of public two-year students and less than a third of that of nonprofit students, as shown in the top row of Table 4. Part of this stark differential is because for-profit college students are more likely to be financial independent (and therefore are not expected to receive financial support from parents), especially when compared to students who attend public four-year or nonprofit schools.

We present the trend of EFC in Figure 2D. The trend in for-profit students' EFC suggests that the pattern of student borrowing documented above is unlikely to be driven by changes in students' measurable financial resources. As borrowing climbed in the 1996-2008 period, EFC was virtually stagnant for for-profit students. In later years EFC dropped—perhaps due to the Great Recession and a changing mix of entering students—but this increase in student need was not met with an increase in borrowing post-2008. It is possible that high levels of borrowing reflect preferences of for-profit students for debt instead of working while in school. Panel B of Table 4 provides average working behavior of students in the sample across the sectors.

The proportions of students who work are similar across sectors and even slightly lower among for-profit students. Differences become more apparent when examining the hours that students work. For-profit students are the most likely to work full-time and log the most hours per week (34).¹² For-profit and public two-year students are also most likely to have jobs off campus, which may increase commuting times and reduce campus integration. Considering the relatively high work rates for for-profit students in conjunction with high borrowing rates, for-profit students may face unique challenges associated with both working and borrowing.

¹² Trends of hours worked by students and work participation rates stay relatively flat over the time period examined among all sectors.

EXPLAINING BORROWING DIFFERENCES ACROSS SECTORS

In this section, we attempt to understand how much of the cross-sector variation in borrowing is explained by the observable factors explored above, with a focus on the public two-year and for-profit sectors. We statistically decompose the variation in borrowing rates and annual loan amounts between public community college and for-profit students using an Oaxaca-Blinder (O-B) decomposition (Blinder 1973; Oaxaca 1973).¹³ In general terms, we break down the variation between groups into two components: explained and unexplained (Jann 2008). Explained variation can be thought of as differences that are due to group composition, i.e., the amount of the borrowing differential we attribute to differences in student and institutional characteristics that can be observed and measured by the variables in the data. The unexplained variation can be thought of as remaining differences that are driven by factors that are unobservable or unmeasurable in our data, for example, student access to information. We discuss student information and other possible source of unexplained variation further below.

We decompose both borrowing rates and total annual loan amounts using pooled data from the 2007-2008 and 2011-2012 survey waves. We include the variables explored earlier, grouping them into the following categories: costs, student financial resources, academics, demographics, geography, and academic year. A detailed description of the groups and the results of the decomposition are available in the appendix (see Appendix Tables A1 and A2). We find that the total difference in borrowing rates between for-profit and public two-year colleges is 62.8 percent. Our decomposition indicates that observable factors explain about 24 percentage points of the borrowing rate differential (or 38 percent of the difference). As expected from our descriptive analysis, the relatively high for-profit cost (mostly tuition) is by far the largest predictor of this explained variation, accounting for nearly all of the difference in borrowing rates. This finding implies that for-profit student borrowing would be lower if costs were more similar to those in public community colleges. Surprisingly, differences in resources (as measured by EFC) among for-profit and public two-year students explain none of the borrowing differential. However, differences in academic characteristics, although very small (just three percentage points), go the opposite direction, suggesting that public two-year students would be less likely to borrow if they had similar credentials (e.g., more short-term certificates) and attendance patterns (e.g., full- vs. part-time) as for-profit students. Over 60 percent (or 38.7 percentage points) of the variation in borrowing between the for-profit and public two-year sectors remains unexplained by characteristics observed in these data—a point we return to below.

Next, we decompose the difference in total annual loan amounts across sectors. We find that our variables can explain half (about \$3,000) of the \$6,000 difference in loan amounts between the for-profit and public two-year sector. Costs continue to explain the vast majority of variation between the for-profit sector and community colleges, with every other factor remaining small and in the opposite direction. These results suggest that observable demographics, academics, location, and even student resources contribute much less to differences in borrowing between sectors when compared to the net costs of attendance.

UNEXPLAINED BORROWING

In this section we discuss potential factors that could explain the differential in borrowing between for-profit colleges and public community colleges that is not explained by observed factors, including costs, credentials, and financial resources. We would not expect to be able to account for all of the variation in borrowing through our decomposition

¹³ We also decompose the variation in borrowing between for-profit students and both public four-year and nonprofit sectors, but we omit them for brevity.

exercise as many factors remain unobservable, and the extent to which a researcher can draw inferences from the unexplained portion of the differences among college sectors depends on how comprehensively one can model the economic process that determines borrowing. Nonetheless, we conceptually explore some of the unobserved factors that may contribute to borrowing variation, relate these factors to areas of public concern, and highlight opportunities for further research.

First, one might wonder if for-profit college students have unmet financial need that is unaccounted for by our measures of income and EFC. It could be that students in this sector have fewer assets and savings than their counterparts in community colleges and these may not be reflected in EFC.¹⁴ This may be especially likely because for-profit students are more likely to be financially independent, and the information used in financial aid formulas may not accurately reflect these students' ability to pay (Darolia 2015; Kane 1997; ACSFA 2003). Relatedly, they may have limited access to other types of credit or stable sources of funds from which to finance their education and consumption, making them more reliant on student loans.

Second, it could also be that, all else equal, for-profit students are willing to take on more debt than community college students if they expect higher benefits, net of costs in the for-profit sector. For example, while we capture direct costs

Along with public two-year students, for-profit students also appear to be receiving less advice about aid from family and friends and conduct less internet research than students in the public four-year and nonprofit sectors.

(e.g., tuition and fees) of college in our analysis, we do not account for indirect costs (e.g., foregone earnings, child care, transportation). Some students may view the indirect and opportunity costs at for-profit colleges to be lower because of the availability of relatively short degree programs, flexible course scheduling, or enhanced student services. Students with high discount rates (i.e., impatient students) will place high value on reducing current costs, even if this leads to larger expenses in the future. Alternatively, for-profit students could expect higher earnings gains from their education. This expectation, however, it is not borne out in recent research. Most

studies in this area indicate similar or weaker labor market outcomes for for-profit students relative to community college students (e.g., Cellini and Turner 2016; Cellini and Chaudhary 2014; Cellini and Turner 2016; Darolia et al. 2015; Deming et al. 2016; Deming, Goldin, and Katz 2012; Lang and Weinstein 2013).

In light of these studies, the important question of student information arises. It may be that many for-profit college students do not make fully informed decisions. Specifically, they—more than students in other sectors—may lack access to information about their educational options, college finance, or their expected labor market outcomes. Informational deficiencies are likely to be particularly prevalent for students who come from communities without a tradition of college-going that they can draw on to help navigate attendance and borrowing decisions (Dynarski and Scott-Clayton 2006, Hoxby and Avery 2013, Hoxby and Turner 2014, 2015). Moreover, students are likely to make computational errors when comparing current and future costs and benefits (Frederick, Loewenstein, and O'Donoghue 2002) and therefore some students could be sacrificing overall higher long-term benefits for short-term conveniences. Finally, for-profit students could be overly optimistic or simply believe—even with knowledge about the distribution of expected earnings—that their own outcomes will be above average. These informational and

¹⁴ For example, home equity and retirement accounts are not included in calculating EFC (U.S. Department of Education 2016c).

computational explanations suggest the importance of public efforts to improve the provision and clarity of information made available to students about aid and college options.

To shed light on student information and decision-making across sectors, in Table 5, we provide a summary of survey responses about students' aid application process.¹⁵ For-profit students were most likely to apply for aid, and importantly, much more likely to talk with college financial aid staff (71 percent vs. about 45-51 percent in other sectors). And along with public two-year students, for-profit students also appear to be receiving less advice about aid from family and friends and conduct less internet research than students in the public four-year and nonprofit sectors.

Table 5: Aid application

	For-Profit	Public ≤2-yr	Public 4-yr	Private Nonprofit
Applied for any aid	95%	71%	82%	90%
Applied for federal aid	88%	61%	72%	76%
Talked with staff about financial aid	71%	42%	45%	51%
Discussed financing decisions with family/friends	52%	54%	71%	70%
Researched financial aid on the internet	35%	34%	45%	45%
Compared lender options	30%	14%	25%	30%

Notes: Survey weights used.

Source: Authors' tabulations of the 2011-2012 (answers about aid application) and 2007-2008 (answers about financial aid discussions and research) National Postsecondary Student Aid Study.

These statistics are not surprising given the lack of financial resources of many students in the sector and the relatively lower probability that they had parents who received college degrees. It is certainly possible that the financial aid staff at for-profit colleges help recruit marginal students with few financial resources and little access to other sources of credit, who can benefit from federal aid. However, it also raises questions about whether profit-seeking incentives may influence the behavior of aid officers at for-profit institutions, leading students—especially students on the margin of college attendance—to borrow more than they can reasonably be expected to repay. For example, the Government Accountability Office (GAO 2010) documented conversations of for-profit staff misrepresenting starting salaries of graduates and claiming that debt did not have to be repaid. Further, the U.S. Department of Education sanctioned Corinthian Colleges for misrepresenting job-placement rates (Lorin 2015) and found enough evidence of fraud at 91 of the school's campuses to merit loan forgiveness for thousands of former students (Stratford 2016). These anecdotes raise concerns about the advice that students receive from aid counselors, but it is not yet clear how widespread these practices are.

If informational deficiencies are at least partly to blame for the high and unexplained student borrowing in the for-profit sector, the increased public scrutiny and investigations of the for-profit sector—beginning around 2010—may have raised student awareness or changed the behavior of institutions. These changes may be reflected in the declining borrowing in the sector that we observe between 2008 and 2012. Enrollment in for-profits also dropped sharply after 2010, decreasing 18 percent by 2013, relative to a three percent decline at public institutions and a three percent increase at nonprofit colleges over the same time period (NCES 2014, Table 303.20). If a lack of student information is contributing to the disproportionately high borrowing and high enrollment in the for-profit sector, new tools and policies, like the College Scorecard and the disclosure requirements of Gainful Employment, hold promise

¹⁵ The survey responses are from the 2007-2008 wave of the NPSAS, as they were not included in the 2011-2012 wave.

The increased public scrutiny and investigations of the for-profit sector—beginning around 2010—may have raised student awareness or changed the behavior of institutions.

for improving student decision-making. These initiatives are likely not sufficient for all students to make prudent complex college choice and financial aid decisions, however, and therefore more work is needed to understand how to deliver such information, who accesses the data, and whether more intensive supports are needed for some students.

CONCLUSION

Drawing on nationally-representative data from 1996-2012, we assess the role of college costs, student academic programs and demographics, financial resources, and work behavior in explaining patterns of student borrowing across sectors and over time. We document that the relatively high borrowing and costs of attendance for for-profit college students are most similar to those of private nonprofit students. While both sectors experienced increases in tuition and fees, the nonprofit sector mitigated their tuition hikes with increases in institutional grant aid, curtailing the need for additional borrowing by their students. In the for-profit sector, however, we observe no such increase in institutional aid. As a result, the temporal patterns of student borrowing in the for-profit sector closely follow trends in tuition over the period we observe. The discrepancy in institutional aid practices in the for-profit and nonprofit sectors may be partly explained by the structure of the organization: since the profits of for-profit institutions are distributed to shareholders, there is incentive to increase revenue by enrolling large numbers of students, but not to provide institutional aid to students or otherwise reinvest those profits back into the institution, as is required of nonprofit institutions.

Our analysis also demonstrates that, despite the high cost of a for-profit college, students in this sector come from relatively poor backgrounds and have fewer financial resources than students in other sectors. In fact, their demographics, attendance patterns, work behavior, and the credentials they seek are most similar to public two-year college students who pay less on average for an education that likely has higher returns.

Finally, we highlight several possible mechanisms that may drive student choices in the for-profit sector that are unobserved in our statistical decomposition that could explain differences in borrowing. Among them, we suggest that financially independent students in for-profit colleges may have unmeasured need or less access to other types of non-loan aid. Thus, we should seriously consider whether current financial aid formulas reflect these students' ability to afford a college education. Other explanations are suggestive of misinformation and that for-profit students may be borrowing more than they can reasonably expect to repay. Initiatives that increase available information about college options and financial aid, especially when presented clearly and by a trusted source, seem likely to yield positive outcomes. Information alone, however, may not provide sufficient support for students who come from communities without a tradition of college-going. Policymakers and researchers should therefore continue to evaluate and explore scalable interventions that couple information provision with personalized student support.

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APPENDIX

Table A.1: Covariates

Cost	Cubic functions of COA and grants, and all pairwise interactions of the cubic functions of COA and grants
Financial resources	Cubic function of EFC
Academics	Type of credential sought (degree, certificate, coursework), year in school, attendance pattern (full-time, full-year; full-time, partial-year; part-time, full-year; part-time, partial-year)
Demographics	Gender, race, ethnicity, first generation immigrant, financially independent, single parent, number of dependents, married
Geographic	State of residence, college state different than residence state, international student
Academic Year	2007-2008, 2011-2012

Table A.2: Decomposition of borrowing variation between for-profit and public ≤ 2 -year college students

	Borrowing Rate (%)		Borrowing Amount (\$)	
Difference from for-profit	62.8	(0.3)	6,113	(34)
Explained Total	24.1	(0.6)	2,985	(72)
Cost	27.6	(0.7)	3,467	(70)
Resources	0.0	(0.1)	-36	(7)
Academic	-3.2	(0.3)	-217	(26)
Demographics	0.4	(0.1)	-36	(9)
Location	-0.4	(0.2)	-148	(26)
Year	-0.4	(0.0)	-43	(3)
Unexplained	38.7	(0.8)	3,128	(69)

Notes: Survey weights used.

Source: Authors' calculations of the 2007-2008 and 2011-2012 National Postsecondary Student Aid Study. Standard errors are included in parentheses.

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