

High Costs, Low Resources, and Missing Information: Explaining Student Borrowing in the For-Profit Sector

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This article examines the borrowing behavior of students enrolled in for-profit colleges, asking how and why their borrowing differs relative to students pursuing postsecondary education in other sectors. We employ statistical decompositions to understand the extent to which variation in borrowing across sectors can be attributed to observed characteristics of students and of higher education institutions. Drawing on nationally representative data on undergraduate students, we show that college costs of attendance are the primary observed driver of the large differences in borrowing between students in for-profit institutions and those in other sectors. However, a substantial portion of borrowing differences remains unexplained by these high costs, low student financial resources, and variation in college attendance patterns. Further, there is little evidence that changes in these characteristics can explain the rise in student borrowing in the for-profit sector over time. We discuss how these findings present challenges to regulation of the for-profit sector, and the extent to which policymaking can encourage prudent borrowing and college choice decisions.

Keywords: student loans; for-profit colleges; college sectors; borrowing trends

Student loan debt levels have escalated during a period in which the emergence of the for-profit sector has transformed the higher education landscape. Over the last decade, outstanding student loan debt more than tripled to \$1.2 trillion, and \$1 trillion of this total is

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backed by the federal government (Federal Reserve Bank of New York 2013). At the same time, enrollment in for-profit colleges also skyrocketed, rising from about 650,000 in 2000 to close to 2.5 million in 2010, increasing the sector's share of total enrollment from 4 percent to 11 percent (National Center for Education Statistics [NCES] 2014). Since about 2010, disproportionate levels of federal taxpayer support for these institutions in the form of federal grants and federally subsidized loans, combined with relatively high student loan default rates, low graduation rates, and allegations of fraud, have generated public scorn and prompted new regulations aimed at the for-profit sector.¹ Research has also highlighted the relatively low labor market returns at many for-profit colleges (e.g., Cellini and Chaudhary 2014; Cellini and Turner 2016; Darolia et al. 2015; Deming et al. 2016; Lang and Weinstein 2013).

Recent policies targeting the for-profit sector, such as the “gainful employment” regulations,² along with state and federal investigations into the practices of individual institutions, have led to bankruptcy and closure of several large for-profit colleges, and debt relief for their students. It is possible that more closures are coming (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). During this same period, federal loan disbursements have declined by almost the same magnitude (Baum et al. 2015).

In this article, we analyze student borrowing in for-profit colleges and compare these patterns to those found in other sectors of higher education. We use student-level records from the U.S. Department of Education's National Postsecondary Student Aid Study (NPSAS). Every four years, NPSAS combines institutional and government 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 on undergraduate students who attended college from 1996 to 2012. To highlight more detailed comparisons across sectors, we focus on data from the most recent wave (2012 school year).

We group schools into four types: (1) for-profit institutions, (2) public institutions that offer programs of two years or less,³ (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 2013–2014, 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 first independently document cross-sector variation in student borrowing. Because students often borrow to close gaps between educational costs and available financial resources, we next examine sectoral differences in a variety of measures that are directly or indirectly related to these factors. We then employ statistical decompositions to understand the extent to which variation

in borrowing between for-profit colleges and colleges in other sectors can be attributed to observed characteristics of the institutions (cost of attendance), or their students (family financial resources). Finally, we consider a number of factors outside of observed costs and resources that may influence student borrowing across sectors.

We find evidence that for-profit students' demographics, financial resources, college costs, and work behavior differ from students enrolled in other sectors in important ways, but that much of the variation in borrowing between students attending for-profit colleges and students in other sectors is not explained by these factors. These findings present challenges to regulation of the for-profit sector and to policy-making that aspires to encourage prudent borrowing and college choice decisions.

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.⁴ 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.

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. This difference may allow for-profit colleges to avoid capacity constraints that students may face at lower-cost public institutions, especially in high-demand fields and in areas where public higher education budgets are tight. In this situation, public institutions may simply not be available for students wishing to pursue certain types of training, leaving for-profit institutions as the only timely option.

For-profit colleges can also 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 et al. 2011). For-profit institutions have been at the forefront of efforts that have the potential to benefit students and expand access to higher education because of their relatively short degree programs, strong vocational focus, flexible course scheduling, online instruction, and enhanced student services (Bailey, Badway, and Gumport 2001; Breneman, Pusser, and Turner 2006; Rosenbaum, Deil-Amen, and Person 2006). These features may allow students to maintain employment and obtain credentials quicker than in other sectors, thus lowering the opportunity costs of attendance for students relative to competitors. These features also may enable some students to enter higher education who otherwise would not attend.

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. Colleges in the for-profit sector have been heavily criticized for spending large sums on marketing and recruiting students, without considering whether the student is expected to succeed (U.S. Congress 2012). The ongoing debate about incentive compensation, that is, financial incentives for recruiters to enroll students, is emblematic of such tension. For nearly a decade until the practice was banned in 2011, recruiters at for-profit colleges could be compensated for enrolling new students (U.S. Congress 2012). While this practice could result in higher enrollment among minority and hard-to-reach students, a lack of consideration of whether students are well suited to complete their chosen program can be costly to students. These incentives can be particularly harmful for students in a market where prospective students may not have full information about their institutional choices, net costs, or potential outcomes.

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;⁵ individual institutions are allowed to receive up to 90 percent of their revenue from this source, under the so-called 90-10 rule.⁶ In other sectors, particularly community colleges, institutions may not actually retain any of the loan as tuition revenue if students are taking them out to cover nontuition expenses. 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. In the 2010–2011 school year, for-profit students composed about 11 percent of postsecondary enrollment but received nearly one quarter of federal Pell Grant and subsidized student loan disbursements (Baum et al. 2015). As discussed below, 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.)

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 7 percent of public and nonprofit college students, respectively (U.S. Department of Education 2015). Looney and Yannelis (2015) show that the increase in student loan defaults in recent years is concentrated among nontraditional students, who are disproportionately likely to attend for-profit and community colleges. The relatively higher borrowing among for-profit college

TABLE 1
Demographic Characteristics of Undergraduates in 2011–2012, by Institutional Sector

Characteristic	For-Profit	Public ≤ 2-Year	Public 4-Year	Private Nonprofit
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 high school 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

SOURCE: Authors' tabulations of the 2011–2012 National Postsecondary Student Aid Study.
NOTE: Survey weights used.

students suggests that borrowing in this sector may be particularly risky for both students and taxpayers.

The risk of attending an institution in the for-profit sector takes on further importance because of the demographic characteristics of undergraduate students attending institutions in this sector (see Table 1). For-profit students are demographically most similar to public two-year students, but even between these two sectors, many important differences exist. For-profit institutions have the highest proportion of female and minority students, and students in this sector are almost twice as likely as students in other sectors to have served in the military. Students attending for-profit institutions come from families with the lowest levels of parental education. Only 22 percent of for-profit students in 2011–2012 have at least one parent who completed at least a bachelor's degree compared with 30 percent of students at public two-year institutions, 48 percent at public four-year institutions, and 52 percent at nonprofit institutions. Differences in parental education levels across sectors imply differences in socioeconomic status and suggest for-profit students' relative lack of knowledge about college options and financial aid.

For-profit students are, on average, older than undergraduates enrolled in other sectors, 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. The financial aid system is not well-structured to recognize unique financially independent student circumstances and is, therefore, more likely to underestimate their financial need (Advisory Committee on Student Financial Assistance 2012; Darolia, forthcoming; Kane 1997). For-profit students are also the most likely to be single parents and have the highest average number of dependents among the sectors. These patterns suggest that educational loans may be particularly important for for-profit students, as they tend to have less access to the resources of parents or spouses, higher needs for supporting children, and challenges obtaining grant aid.

Trends in Student Borrowing

Overall, patterns of borrowing among undergraduates attending for-profit institutions look most similar to undergraduates attending private nonprofit institutions. Table 2 presents the average borrowing behavior of undergraduate students for the 2011–2012 school year: 73 percent of for-profit students borrowed money of some kind. This figure is somewhat higher than borrowing rates in nonprofits (63 percent) and four-year public institutions (51 percent), but the starkest difference is relative to the public two-year sector. In public community colleges, where students are demographically and socioeconomically most similar to for-profit students, just 19 percent of students borrow.

Figure 1A displays the trend in the percentage of students who have borrowed (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, borrowing in the other sectors continued to slowly and steadily rise, while for-profit borrowing dipped, dropping from a peak of 87 percent in 2008 to just under its 2004 level of 73 percent. We display the trend in average student borrowing amounts (among all students) 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.

Part of this decline was likely due to changes in the loans available to borrowers. There are two broad categories of student loans available to students and their families: federal and nonfederal loans. Federal loan programs typically have more favorable terms than nonfederal loans. Federal loans are not underwritten as long as borrowers attend an eligible institution, have interest rates that are not based on individual default risk, and can have additional benefits, such as the ability to forbear payments during times of hardship or graduate school enrollment. Most federal loan programs have annual and aggregate limits that vary by

TABLE 2
Borrowing Behavior of Undergraduates in 2011–2012, by Institutional Sector

Borrowing Behavior	For-Profit	Public ≤ 2-Year	Public 4-Year	Private Nonprofit
Panel A: Rates of student borrowing				
% borrowed any loans	73%	19%	51%	63%
% borrowed federal loans	71%	18%	49%	60%
% borrowed nonfederal loans	13%	2%	7%	13%
% borrowed both federal and nonfederal loans	11%	1%	5%	11%
% borrowed federal, but not nonfederal loans	61%	17%	44%	49%
% borrowed nonfederal, but not federal loans	2%	1%	2%	3%
Panel B: Average per student borrowing (including all students)				
Total loans	6,179	953	4,368	7,027
Federal loans	5,470	900	3,975	5,990
Subsidized federal loans	2,204	451	1,623	2,193
Nonfederal loans	709	52	393	1,037
Panel C: Average loan amount for those who borrowed each loan type				
Total loans	8,431	5,061	8,603	11,181
Federal loans	7,673	5,036	8,136	9,928
Subsidized federal loans	3,178	2,893	3,894	4,115
Nonfederal loans	5,653	2,857	5,474	7,689

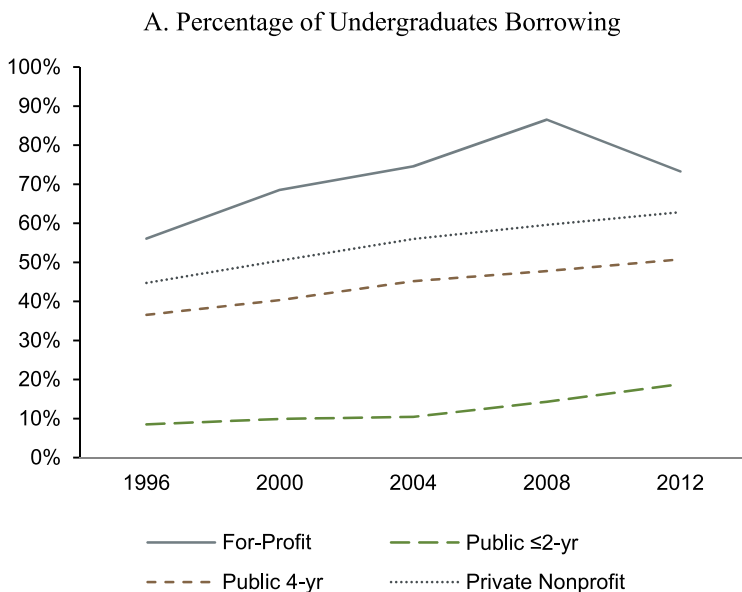
SOURCE: Authors' tabulations of the 2011–2012 National Postsecondary Student Aid Study.

NOTE: Survey weights used.

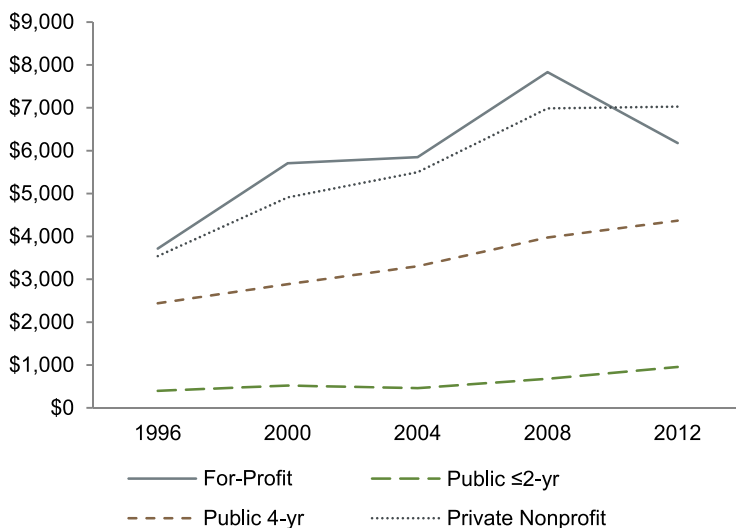
year in school, financial dependency status, and financial need and loan limits may change over time. For example, annual loan limits increased under the federal Direct Loan program in both 2007 and 2012, potentially leading to increases in student borrowing. On the other hand, over the same period, restrictions on private lenders in the wake of the Great Recession reduced access to private loans.

From 2008 to 2012, average private loan borrowing declined precipitously in all sectors, with the steepest decline among for-profit students; 2012 average private student loans were about a quarter of the 2008 level.⁷ Because of the already heavy utilization of federal loan programs by for-profit students, average federal loan amounts did not increase much in the for-profit sector from 2008 to 2012, so the retraction in private borrowing may have contributed to the overall decline in total borrowing in the sector. Conversely, average federal loan amounts increased considerably in other sectors, more than offsetting declines in private student loan lending.

FIGURE 1
Trends in Undergraduate Student Borrowing, by Sector



B. Average Annual Amount Borrowed Among Undergraduates Who Borrowed



SOURCE: Authors' tabulations of data from the National Postsecondary Student Aid Study.
NOTE: All dollars in constant 2012 dollars. Survey weights used.

Table 2 reports differences in federal and nonfederal borrowing across sectors in 2012. Panel A of Table 2 shows that for-profit and nonprofit students are much more likely than public two-year and four-year students to supplement federal borrowing with borrowing from nonfederal sources. For-profit students also have relatively high average annual total loan amounts, as shown in panels B and C of Table 2. At for-profit institutions debt load averages more than \$6,000 per year across all students (whether or not they borrow) and \$8,400 among borrowers. These figures are slightly lower than those of the nonprofit sector (\$7,000 and \$11,200, respectively). In stark contrast, the average per student borrowing across all public community college students is just \$950 annually, but among the very small percentage of students in this sector who borrow, the average loan amount is \$5,000.

Concurrent Trends

In this section, we examine various explanations for the substantial differences in student borrowing between the for-profit and other sectors. Because students typically borrow to close a gap between educational costs and available resources, we focus on factors that are directly or indirectly related to costs and resources.

Costs of education

Perhaps the most obvious and most frequently cited explanation for the disproportionate borrowing of for-profit students is the relatively high tuition and net cost of attendance. Panel A of Table 3 displays several measures of college costs.⁸ For-profit institutions have much higher average tuition and fees (\$10,200) 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. Nonprofit tuition and fees are more than double the for-profit per-student average. 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 between 1996 and 2008, with a slight decline in the rate of increase between 2008 and 2012.

Grants are perhaps the most important source of nondebt financing, and are particularly attractive since they lower the net cost of education to the student and do not need to be repaid. Grants can come from a number of different sources, including the federal government, state governments, individual institutions, and private employers and foundations. Some of these may be targeted to groups such as veterans.

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

TABLE 3
Average Costs and Enrollment Patterns for Undergraduates in 2011–2012, by
Institutional Sector

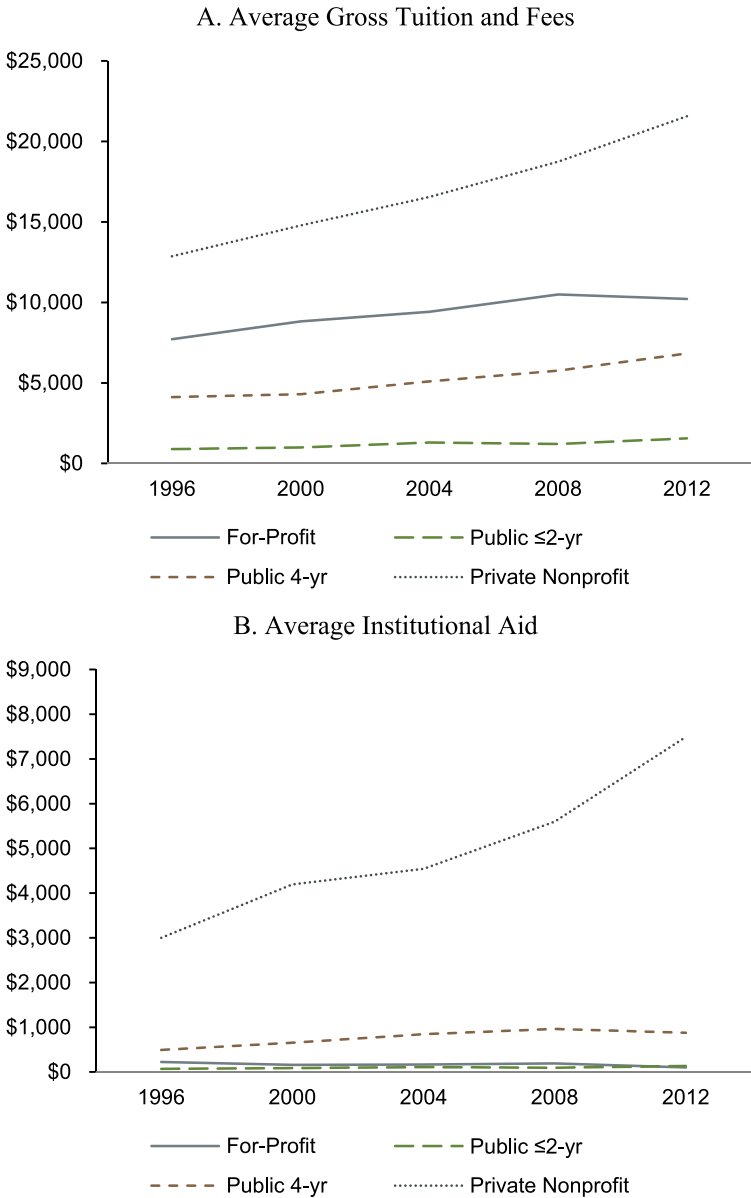
	For-Profit	Public ≤ 2-Year	Public 4-Year	Private Nonprofit
Panel A. Tuition and fees, and estimated cost of attendance (COA)				
Gross tuition and fees	10,215	1,556	6,832	21,561
COA	20,159	8,747	17,896	33,934
Tuition and fees minus grants	7,551	805	4,155	11,563
COA minus grants	17,345	7,099	14,296	22,805
Panel B. Grant aid				
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 and employer)	371	186	547	1,549
Panel C. Academics and enrollment patterns				
Enrolled in a certificate program	28%	8%	1%	2%
Enrolled in an associate's degree program	31%	82%	9%	5%
Enrolled in a 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%

SOURCE: Authors' tabulations of the 2011–2012 National Postsecondary Student Aid Study.
NOTE: Survey weights used.

largest amount of grant aid, at \$11,000 annually. These differences are reflected in the measures of net tuition and fees and COA in panel A. Breaking down the sources of grant aid reveals that for-profit students average higher amounts of federal grants than students in all other sectors but lower amounts of other types of grant aid. 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. Average military grant aid increased dramatically for for-profit students between 2008 and 2012 (Cellini and Darolia 2015).

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 in 2011–2012. The same figure is dramatically higher at \$7,320 for students in the private nonprofit sector. Figure 2B shows the large increase in institutional aid in the nonprofit sector over time, and little movement in institutional aid in the

FIGURE 2
Trends in College Costs and Need for Undergraduates, by Institutional Sector



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

for-profit sector (or others). The effect of institutional and other grant aid on the costs to students is shown in the third row of panel A in Table 3, where education prices net of grant aid in the for-profit sector remain relatively high. Further, the gap between the net price of for-profit and public colleges has been increasing over time, while the gap between gross prices of for-profit and nonprofit education closes substantially when grant aid is taken into account.

These figures demonstrate that increasing sticker prices in the private nonprofit sector have been accompanied by 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. But in regard to for-profit students, the upward trend in prices is not met by a similarly rapidly increasing trend in institutional aid. This pattern leaves a gap in resources that is filled by student loans.

Dissimilarities in the credentials that students seek may be important drivers of borrowing behavior, both due to differences in the time students spend in school and differences in expected returns to credentials (Oreopoulos and Petronijevic 2013). As displayed in panel C of Table 3, just under one-third of for-profit students are enrolled in certificate programs, and a similar proportion is enrolled in associate’s degree programs. Forty percent are enrolled in bachelor’s programs, a much higher proportion than in previous years (up from 27 percent in 2008; Cellini and Darolia 2015). In contrast, about 90 percent of students pursue bachelor’s degrees in four-year public and nonprofit institutions. Students at the public four-year and nonprofit colleges are most likely to attend college full time and full year; for-profit colleges enroll the highest proportion of full-time, part-year students (40 percent).

Financial resources

We next examine students’ available resources and unmet financial need that might explain the patterns of attendance and borrowing that we observe. Consistent with the demographic patterns described earlier, we observe relatively few personal financial resources for students in the for-profit sector, as displayed in panel A of Table 4. For-profit students are most similar, but in many ways still less affluent, than public two-year students, who face much lower costs. For-profit students have the lowest average annual household income, at just \$28,530, and are closest, on average, to the poverty line. Public two-year students seem to be better off financially 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 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 Table 4, panel A. Part of this stark differential is because for-profit college students are more likely to be financially independent (and therefore EFC calculations do not include parents’ financial resources).⁹

TABLE 4
Financial Resources of Undergraduates in 2011–2012, by Institutional Sector

	For-Profit	Public ≤ 2-Year	Public 4-Year	Private Nonprofit
Panel A. Financial resources				
Adjusted gross income	28,530	41,718	61,811	70,552
Percent of the poverty line	162%	229%	305%	337%
Expected family contribution (EFC)	3,595	6,549	10,420	12,318
Panel B. Financial need				
Cost of attendance (COA) – EFC	17,263	5,597	10,831	23,686
COA – EFC – grants	14,499	4,042	7,578	13,485

SOURCE: Authors' tabulations of the 2011–2012 National Postsecondary Student Aid Study.
NOTE: Survey weights used.

In panel B of Table 4 we list two measures of financial need among students. The first is COA minus EFC, yielding a measure of student need before financial aid. Here, we see that nonprofit students have the highest need of about \$23,600, followed by for-profit students (\$17,300) and students in the public four-year and two-year sectors (\$10,800 and \$5,600 respectively). The last row in Panel B displays a measure of unmet financial need, calculated as COA less calculated EFC and all grants. Here, the relatively large institutional grants offered in the nonprofit sector result in unmet need that is comparable, and even slightly less, than the for-profit sector. Students may cover unmet financial need with student loans or additional work, a point we return to below.

Decomposition of Borrowing Differences

In this section, we attempt to understand how much of the cross-sector variation in borrowing is explained by the observed factors explored above. 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). Advantages of this decomposition approach are the ease of interpretation and the ability to estimate the relative contribution of each observed factor, but a limitation is that we only examine mean differences among groups. Formally, consider the following linear estimation of loan amount, L , estimated separately for students from each college sector:

$$L = X\gamma + u$$

Here, X is a vector of observed characteristics (subsuming the intercept) with parameter vector γ , and u is the error term.

We report results from a two-fold pooled model decomposition with a group indicator to classify the differential between students from the for-profit and other sectors into two general components: explained and unexplained (Jann 2008). Explained variation can be thought of as differences that are due to group composition—that is, the amount of the borrowing differential we attribute to characteristics that can be observed and measured by variables in the analyses. The unexplained variation can be thought of as remaining differences that are driven by factors that are unobserved or unmeasurable, for example, student access to information. We discuss student information and other possible sources of unexplained variation further below.

We compare each sector to the for-profit sector in a two-way comparison. For example, an analysis of the for-profit (F) and public two-year sector (P) can be represented by:

$$E[L_F - L_P] = \{E[X_F] - E[X_P]\} \gamma^\circ + \{E[X_F](\gamma_F - \gamma^\circ) + E[X_P](\gamma^\circ - \gamma_P)\}$$

This decomposes the loan amount difference (L) between the two sectors into the difference in average observed factors between the groups (X), the difference between the group-specific coefficients (γ), and the interaction of differences in observed factors and coefficients.

We decompose both total annual loan amounts and borrowing rates using pooled data from the 2008 and 2012 survey waves for a larger sample size and so that we can examine differences over time. We include variables in the X -vector explored earlier that reflect educational costs and available resources. Specifically, we include measures of COA and grants,¹⁰ as well as academic characteristics that affect costs (e.g., degree sought and full- or part-time attendance). We use EFC to measure financial resources. We include measures of geography since these can mechanically affect educational costs. Finally, we indicate the year to account for economic and policy differences over time.¹¹

We display results of the decomposition of borrowing rates in panel A of Table 5. The total difference in borrowing rates between for-profit and public two-year colleges is 62.8 percent. Our decomposition indicates that observed 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 is by far the largest predictor of this explained variation. Differences in resources among for-profit and public two-year students explain virtually none of the borrowing differential. Differences in academic characteristics, although small (just 3 percentage points) have a negative sign, suggesting that public two-year students would be even less likely to borrow if their credentials and attendance patterns were more similar to those of for-profit students. More than 60 percent (or 39.1 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.

When comparing for-profit to public four-year and nonprofit sectors, relatively less of the differential is explained by observed factors than in the public two-year

sector. Costs continue to be the largest predictor of the variation, but we observe that the lack of for-profit students' financial resources plays a more important role in explaining borrowing differentials between students in the public four-year and non-profit sectors compared to the public two-year sector. We decompose the difference in total annual loan amounts in panel B of Table 5. Inferences are similar: costs continue to be the main driver of explained differences between the for-profit sector and other sectors, while other observed factors have relatively less explanatory power.

Discussion

Students attending for-profit colleges tend to come from relatively poor backgrounds with fewer financial resources than students in other sectors. Our analysis shows, however, that these facts have little to do with borrowing habits: students' financial resources and differences in their attendance patterns and academic credentials explain only a small portion of the difference in borrowing between for-profit higher education and borrowing in other higher education sectors. The primary observed driver of borrowing for students in for-profit colleges is the cost of the college itself.

What inferences can we draw from the unexplained portion of our decomposition analysis? It depends on the extent to which we can accurately and comprehensively model the economic process that determines borrowing. In this section, we explore some of the unobserved factors that may contribute to borrowing variation, and highlight opportunities for further research.

Students may choose to work instead of borrow to cover unmet financial need. One explanation for the relatively high levels of borrowing in the for-profit sector could be explained by a preference for debt instead of working while in school, but we find evidence that for-profit students both work and take on debt. In Table 6, we display average working behavior of undergraduate students in 2011–2012 across the sectors. Relative to other sectors, a slightly lower proportion (61 percent) of for-profit students work while enrolled, but a higher proportion work full time (36 percent). Among students who work, for-profit students log the most average hours per week, almost 50 percent more than nonprofit students and three more hours per week than public two-year students. They also report more earnings while enrolled than any other sector. For-profit and public two-year students are also more likely to have jobs off campus than students in other sectors, which may be related to lower persistence (e.g., Pascarella and Terenzini 2005; Perna 2010). More generally, while empirical studies have yielded mixed findings about the effect of working on academic success, heavy employment responsibilities have the potential to inhibit academic success (Darolia 2014; Scott-Clayton 2011; Stinebrickner and Stinebrickner 2003). Thus, the relatively high employment rates of for-profit students in conjunction with high borrowing rates suggest that for-profit students do not simply prefer working to borrowing and instead face unique challenges given their relatively high levels of both working and borrowing.

TABLE 5
 Decomposition of Borrowing Variation between For-Profit College Students
 and Other Sectors

	Public \leq 2-Year		Public 4-Year		Private Nonprofit	
Panel A. Borrowing rate (%)						
Difference from for-profit	62.8	(0.3)	29.4	(0.4)	17.4	(0.7)
Explained total	23.7	(0.7)	9.7	(0.5)	-1.3	(0.7)
Cost	27.7	(0.7)	6.8	(0.2)	-6.9	(0.5)
Resources	0.1	(0.1)	4.1	(0.2)	4.9	(0.3)
Academic	-3.2	(0.3)	0.4	(0.3)	0.1	(0.4)
Location	-0.4	(0.2)	-1.1	(0.2)	1.2	(0.2)
Year	-0.4	(0.0)	-0.5	(0.0)	-0.7	(0.1)
Unexplained	39.1	(0.8)	19.7	(0.7)	18.8	(1.1)
Panel B. Borrowing amount (\$)						
Difference from for-profit	6,113	(34)	2,680	(54)	-172	(116)
Explained total	2,987	(72)	1,059	(70)	-1,874	(105)
Cost	3,439	(69)	1,429	(32)	-1,562	(87)
Resources	-46	(7)	193	(21)	266	(49)
Academic	-208	(26)	-369	(41)	-615	(64)
Location	-155	(26)	-131	(31)	139	(35)
Year	-43	(3)	-63	(5)	-103	(9)
Unexplained	3,125	(68)	1,621	(91)	1,702	(142)

SOURCE: 2008 and 2012 National Postsecondary Student Aid Study.

NOTE: Survey weights used. Standard errors are included in parentheses. Costs = cubic functions of COA and grants and all pairwise interactions of COA functions and grants. Resources = cubic function of EFC. Academic = 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). Location = state of residence, college state different than residence state, international student. Year = indicator for 2008.

Another potential unobserved driver of borrowing differences may be that for-profit college students have fewer assets, savings, or other resources that remain unaccounted for in the calculation of financial need using EFC. For example, home equity and retirement accounts are not included in calculating EFC, but can be drawn down or borrowed against to fund college. If for-profit students have less access to these resources, they will be more reliant on student loans. Further, because for-profit students are more likely to be financially independent, the information used in financial aid formulas may not accurately reflect these students' ability to pay (Darolia, forthcoming).

Additionally, all else equal, for-profit students may be willing to take on more debt than community college students if they expect higher benefits and/or lower costs in the for-profit sector. Although we capture direct costs (e.g., tuition and fees) of college in our analysis, we do not account for indirect costs (e.g., foregone

TABLE 6
Employment Characteristics of Undergraduates in 2011–2012, by Institutional Sector

	For-Profit	Public ≤ 2-Year	Public 4-Year	Private Nonprofit
Works while enrolled	61%	68%	66%	64%
Works full time while enrolled	36%	32%	20%	18%
Earnings from work while enrolled (if work)	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 (if work)	57%	65%	54%	42%

SOURCE: Authors' tabulations of the 2011–2012 National Postsecondary Student Aid Study.
NOTE: Survey weights used. Work includes all types of employment, including work-study.

earnings, child care, transportation), which may be lower in for-profit institutions. Students with high discount rates (i.e., impatient students) will place a 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, is not borne out in recent research. Most studies indicate similar or weaker labor market outcomes for for-profit students relative to community college students (e.g., Cellini and Chaudhary 2014; Cellini and Turner 2016; Darolia et al. 2015; Deming et al. 2016; Lang and Weinstein 2013).

In light of these studies, the important question of students' use of information about college (and college borrowing) arises. Many for-profit college students may not make fully informed decisions. Specifically, they—more than students in other sectors—may lack access to information about educational options, college finance, or 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 2015). Student lending is a particularly complicated financial topic, and descriptive inquiries suggest that many students do not understand the terms of their loans or the implications of their borrowing decisions (e.g., Akers and Chingos 2014; Cadena and Keys 2013). Finally, students at for-profit colleges may be overly optimistic or simply believe—even with knowledge about the distribution of expected earnings—that their own outcomes will be above average.

To shed light on student information and decision-making across sectors, we provide a summary of survey responses about undergraduate students' aid application process in 2007–2008 and 2011–2012.¹² Table 7 shows that 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. 42–51 percent in other sectors).

TABLE 7
Aid Application Behaviors among Undergraduates in 2007–2008 and 2011–2012,
by Institutional Sector

	For-Profit	Public ≤ 2-Year	Public 4-Year	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%

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.

NOTE: Survey weights used.

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

These statistics are not surprising in light of the demographic and socioeconomic profiles documented above. Financial aid staff at for-profit colleges may help to recruit marginal students with few financial resources who can benefit from federal aid. However, these findings also raise 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. Since 2010, government investigations have uncovered numerous instances of impropriety and misrepresentation on the part of financial aid officers at various for-profit institutions.¹³ These allegations are particularly troubling because they imply that borrowing decisions are not made by the students themselves, but are instead driven by institutional practice. Further work is needed to understand 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 in the last several years 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 3 percent decline at public institutions and a 3 percent increase at nonprofit colleges over the same time period (NCES 2014). If a lack of student information is contributing to the disproportionately high borrowing and high enrollment in the for-profit sector, initiatives that increase

available information about college options and financial aid that is presented clearly and by a trusted source, as well as new tools and policies, like the College Scorecard and the disclosure requirements of Gainful Employment, hold promise for improving student decision-making. Information alone, however, may not be sufficient for students in communities without a tradition of college-going to make prudent college choice and borrowing decisions (Darolia 2016). Policy-makers and researchers should therefore continue to evaluate and explore scalable interventions that couple information provision with personalized student support to help prospective college students navigate the complexities of institutional choice and student loan debt.

Notes

1. See, for example, Government Accountability Office (2010) and the U.S. Congress (2012).
2. “Gainful Employment” (GE) regulations were finalized in 2014. They require graduates of for-profit institutions and nondegree programs in other sectors to meet certain debt-payment to earnings ratios to maintain eligibility for federal student aid programs (*Federal Register* 2014).
3. We use the terms “public two-year colleges” and “community colleges” interchangeably.
4. 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.
5. Authors’ tabulations of data from the U.S. Department of Education (2016).
6. This figure is based on the largest source of federal funding to college students, programs under Title IV of the Higher Education Act.
7. Authors’ tabulations of the 2007–2008 and 2011–2012 National Postsecondary Student Aid Study.
8. 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 across sectors.
9. Analyses of trends in EFC over time indicate that changes in student need are unlikely to explain trends in borrowing.
10. See the notes to Table 5 for a complete list of included variables.
11. In a robustness check available on request, we decompose differences across sectors including a vector of demographic characteristics. Conclusions from these models are similar.
12. The survey responses are from the 2008 wave of the NPSAS, as these survey items were not included in the 2012 wave.
13. See, for example, Government Accountability Office (2010) and alleged misrepresentations by Corinthian Colleges (Lorin 2015).

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