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For-Profit Colleges in the United States: Insights from Two Decades of Research

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Abstract

In this paper, I review the economics literature on for-profit college education in the United States, assessing what we know about institutional behavior and student outcomes after two decades of research. The many studies reviewed here reveal some consistent patterns. It is clear that for-profits compete with institutions in other sectors, yet they behave differently than their public and nonprofit counterparts. The literature is mixed on the responsiveness of the sector to labor market demands, but any responsiveness does not appear to translate to better student outcomes. The vast majority of studies on employment and earnings gains for students in for-profits find worse outcomes for for-profit students relative to similar students in other sectors. These disappointing results suggest that additional accountability measures may be warranted to protect students and taxpayers.

Introduction

For-profit higher education has existed in the United States for more than a century, but it has garnered new attention from researchers, policymakers, and the media in recent years. Controversy surrounds the sector. Some argue that for-profit institutions are engines of innovation that respond to labor market demand and serve underserved communities. Others point to poor student outcomes, abrupt college closures, allegations of false advertising, and aggressive recruiting practices to suggest that the sector needs more oversight and greater accountability.

Over the last two decades, researchers in the economics of education have contributed greatly to our understanding of the sector. As new data has become available on these colleges

and their students, we have seen tremendous growth in the number of studies seeking to answer key questions. In this paper, I review the economics literature on for-profit college education. I begin with some background on the sector, then organize the discussion around what we know about the institutional behavior (the supply-side) and the students (demand-side).

Together, the many studies reviewed here reveal a few consistent patterns. First, it is clear that for-profits, while competing with other sectors, behave differently than their public and nonprofit counterparts. For-profits rely much more heavily on federal student aid and the GI Bill than institutions in other sectors, capturing a substantial portion of these subsidies. While the literature is mixed on their responsiveness to labor market demands, it is clear that any responsiveness does not translate to better student outcomes. The vast majority of studies on employment and earnings gains find worse outcomes for for-profit students relative to similar students in other sectors. In fact, several studies document no advantage of attending above high school and suggest that gains are outweighed by debt. These disappointing results suggest that additional accountability measures may be warranted in the sector to protect students and taxpayers.

Background

For-profit postsecondary institutions are those that are operated as private for-profit businesses, where profits accrue to owners or shareholders. In contrast, nonprofit institutions must invest profits back into the institution and adhere to certain governance structures in exchange for tax exemptions. Many of the largest for-profits are operated as publicly-held

companies and are accountable to shareholders to demonstrate growth, while many more small sole proprietarships with only a small number of students.

Generating an accurate count of for-profit institutions and students has been difficult. The federal government reports that there are currently 998 degree-granting for-profit colleges and another 1,723 non-degree granting for-profit institutions (U.S. Department of Education 2019). These counts may or may not include branches of the same chain separately and—more importantly—they only count institutions participating in federal student aid programs. Cellini and Goldin (2016) show that federal counts likely understate the total number of for-profit institutions by more than double. Using their proportional adjustment, I estimate that there are about 4,380 for-profit institutions in the U.S. today. A related complication involves assessing for-profit status: in recent years, at least 19 for-profits have taken steps to convert to nonprofit status, blurring the lines between sectors, while also raising questions about the use of nonprofit status to skirt regulations (Shireman 2020).

In spite of some blurring of the lines between sectors and their differential tax status, for-profit institutions remain distinct from institutions in other sectors in several other ways. A large percentage of for-profits offer vocational programs, often leading to a certificate in a trade, rather than an associate's or bachelor's degree (e.g., the vast majority of cosmetology programs are operated by for-profit colleges). Among those that offer degrees, the most common degrees are vocational in nature—business administration, nursing, or information technology.

Another key difference is the price of an education. Tuition in a two-year for-profit college is nearly five times that of a public community college ($14,605 vs. $3,243, respectively) (U.S. Department of Education 2020, Table 330.10). In part because of this high tuition, for-profits are heavily reliant on federal student aid, with roughly 70% of their revenues derived from Pell Grants and students loans and still more coming through the GI bill (Cellini and Koedel 2017).

The institutions themselves range from small mom-and-pop institutions with just a handful of students to the largest chain and online institutions in the country. The for-profit University of Phoenix is currently the largest higher education institution in the country enrolling over 100,000 students, down from more than 250,000 in 2012 (U.S. Department of Education 2019 and 2014, respectively). Overall, today, the for-profit sector enrolls about 1.35 million students in federally-aided institutions (U.S. Department of Education, 2019). Adding institutions that do not participate in federal aid programs would bring the total to about 1.8 million.[1]

The Supply Side

The Rise and Fall of the For-Profit Sector

Economists studying the for-profit sector in recent decades began by documenting the tremendous growth of these institutions in the early 2000s. Turner (2006) provides a snapshot of the rapid growth of the for-profit sector since the 1980s, discussing the role of federal aid and raising flags about market failures in the sector. A few years later, Deming, Goldin, and Katz

[1] Author's calculations based on an increase of about one-third, as reported in Cellini and Goldin (2016).

(2012) document the history and growth of the for-profit sector. They show that over the period from 2000-2010 enrollment in for-profits more than tripled while the rest of higher education grew by just 22 percent.

Extending Deming, Goldin, and Katz's analysis to more recent years, I document changes in enrollment since 2000 in Figure 1. As is evident, total enrollment in for-profit colleges peaked in 2010, and contracted tremendously since then, undoubtedly in part due to new regulations and investigations targeting the sector beginning around the same time. These actions ultimately led to the abrupt closure of several large for-profit chains—notably, Corinthian Colleges in 2015 and ITT Tech in 2016. Many more colleges followed. In total, roughly 450,000 students have been affected by the closure of over 1,200 individual campuses since 2014 (Vasquez & Bauman 2019).

<Figure 1 about here>

Figure 2 shows how the changes in the number of students translated to shares of students over time at each level. Notably, the share of students in non-degree-granting institutions has remained remarkably high over time: today, the sector educates about two-thirds of all non-degree students. Most of the recent enrollment decline was in two-year colleges. At their peak in 2010, for-profits educated about 12 percent of all students in two-year colleges but currently serve only 7 percent.

<Figure 2 about here>

This is not the first time in history that we have seen large swings in for-profit enrollment. Whitman (2017) studies the history of for-profit colleges in the US, highlighting the

ups and downs of the sector since the 1970s with the introduction of the GI Bill that enabled the growth of for-profits in the post-Vietnam war era. Since then, nearly every president has attempted to regulate or deregulate the sector (Whitman 2017). Recent work by Looney and Yannelis (2019) provides descriptive evidence that tightening of the credit supply was associated with the closure of many institutions, while the relaxation of accountability resulted in for-profit expansion.

In addition to policy changes, the Internet profoundly changed higher education in the U.S. For-profit colleges were among the leaders in online learning. Deming, Goldin, & Katz (2012) document the disproportionate growth of online and four-year degree programs among for-profit colleges between 2000 and 2010. Revisiting this trend, Figure 3 shows the steep increase in the percentage of students in the for-profit sector pursuing their bachelor's degrees exclusively through distance education in the last decade. As of 2015 (the latest year for which we have data), 55 percent of students were attending completely online, compared to just 18 percent and 6 percent in the nonprofit and public sectors.

<Figure 3 about here>

Competition

Several studies in the economics literature have focused on the market for sub-baccalaureate education and on competition between sectors. All of them find substantial substitution between for-profits and public institutions.

In an early study in this literature, Cellini (2009) uses data from California and a regression discontinuity design, finding that increased public funding for community colleges

through bond measures resulted in a commensurate decline in the number of for-profit institutions. In fact, the enrollment shift was roughly one-for-one: for every $1 million in bond funding, roughly 900 students entered the public sector, and about 2 for-profits (estimated to be about 900 students) closed.

Goodman and Volz (forthcoming) and Cellini, Darolia, and Turner (2019) build on this work and find similar substitution between for-profits and public institutions. Assessing the impacts of the decline in state and local appropriation for public institutions, Goodman and Volz find that declines in public attendance in response to funding cuts are offset by increases in for-profit attendance, yielding an implied marginal rate of substitution (MRS) between the two sectors of about 0.75. Cellini, Darolia, and Turner find strikingly similar results when drawing on shocks to the for-profit sector, rather than the public sector, for identification of causal effects. They find that when the Department of Education sanctioned and closed more than 1,000 for-profit colleges in the 1990s, enrollment in neighboring public colleges increased, nearly completely offsetting declines in the for-profit sector. Their results show that loss of federal aid eligibility shifts students across sectors and suggests that community colleges are accessible substitutes for students who enroll in for-profit colleges. Further, Goodman and Volz and Cellini, Darolia, and Turner, both report that for-profit enrollment was associated with greater student borrowing. Cellini, Darolia, and Turner further find evidence that defaults declined when students shifted from the for-profit to the public sector. I discuss student outcomes in more detail in the next section.

Responsiveness to Labor Market Demand

Another strand of the literature has assessed institutional responsiveness to labor demand and finds mixed results. Relative to public colleges that typically have decentralized governance systems and large campuses with high capital costs, for-profit institutions with their smaller size, corporate governance structure, and online courses may be expected to be more responsive to labor market demands. Gilpin, Saunders, and Stoddard (2015) explore this question descriptively by looking at the correlation between enrollment in associate's degree programs by occupation or field and changes in employment growth and wages in related occupations. They find that for-profit colleges expanded enrollment and degree completion in majors where employment conditions in related occupations improved. Their estimates suggest that a 1% higher employment growth rate in occupations in a given employment field in a state is correlated with a 3.2 percentage point increase in students enrolled in for-profit colleges in the state in related majors. They find the student enrollment share at community colleges to be much less responsive to employment growth and wages.

In contrast, looking at for-profit college openings, Armona, Chakrabarthi, and Lovenheim (2018) find that for-profit entry is at most very weakly related to labor market demand shifts and further, that for-profit entry—if anything—is countercyclical. Among four-year institutions, a one percentage point decrease in labor demand leads to at most, a 3% increase in the number of for-profit schools. They find much smaller effects for two-year institutions (0.6%) and results are not robust to the inclusion of state fixed effects.

Reliance on Federal Student Aid

Federal student aid programs are often considered a "lifeline" for for-profit colleges. On average, for-profits generate 70% of their revenue from Pell Grants and federal students loans

under Title IV of the Higher Education Act—with some institutions bumping up against the federally-mandated limit of 90% (Cellini and Koedel 2017). Several studies have examined the role that federal aid plays in the behavior of for-profit institutions. In descriptive work, Cellini (2010) finds that increases in the maximum Pell Grant award are strongly correlated with for-profit college openings, particular in counties where adult poverty levels are high and more students are eligible for aid.

Others studying federal student aid have focused on aid capture by for-profit institutions and the so-called "Bennett Hypothesis" suggesting that institutions raise tuition to capture aid. Turner (2013) was among the first to consider aid capture in the for-profit sector. Using both regression discontinuity and regression kink analyses based on the Pell Grant formula, she finds that colleges have a positive willingness-to-pay for Pell Grant students, directing additional institutional aid to their neediest students. However, this willingness-to-pay is offset by federal aid capture. She finds that private nonselective non-profit institutions and for-profits behave similarly, capturing about 22 percent of student's Pell Grant awards through reductions in institutional aid.

Lau (2014) finds more evidence of aid capture in the for-profit sector. He develops a model of the supply and demand for for-profit education to assess the incidence of federal aid. He estimates the parameters of the model using constrained maximum likelihood estimation and finds that on average, 57 percent of federal grant aid and 51 percent of federal loan aid is passed through to for-profit colleges.

A more direct, yet more descriptive, test of the Bennett Hypothesis in the for-profit sector is offered by Cellini and Goldin (2015). They compare institutions and programs that

receive federal student aid under Title IV to similar programs that operate outside of the federal student aid system. They find that institutions and programs receiving federal student aid have tuition that is roughly 80% higher than that of comparable programs in non-participating institutions and roughly equivalent to the average Pell Grant award, suggesting some support for the "Bennett hypothesis" of federal aid capture in the for-profit sector.

Looking at it from another angle, Eaton, Howell and Yannelis (2019) consider private equity buyouts in higher education. Assessing 88 deals resulting in 218 school-ownership changes using matching techniques, they find that these buyouts are associated with a tripling of profits, in part from tuition hikes that average $1,600. They also report an increased reliance on federal student aid in the wake of a buyout, with revenues approaching the 90 percent statutory threshold. These changes in ownership do not bring improvements in student outcomes; rather, the authors report declines student graduation rates, loan repayment rates, and earnings.

Gaining from the GI Bill

Outside of the federal student aid system, the GI Bill provides assistance for veterans and active-duty military to attend college. It also generates significant revenues for for-profit colleges. Under current law, revenues from the GI Bill do not count toward federal aid limits, nor do they have any accountability metrics attached, making veterans and active-duty military prime targets of for-profit recruiting.

In the first paper to examine the relationship between expanded veterans' education benefits and college pricing behavior, Baird et al. (2019) examine exogenous changes to the Post-911 GI Bill. They find that for-profit colleges are the only sector to respond to the change

with increased prices. They report an average pass-through rate of around one percent: every additional hundred dollars of increase in benefits to veterans, overall sticker-price tuition increased by around one dollar.

Accountability and Regulation in the For-Profit Sector

In light of the reliance on aid documented above, federal policymakers have grappled with the design of accountability metrics in federal student aid programs and regulations that might be particularly important for protecting students and taxpayers in the for-profit sector. Key regulations targeting the sector include "cohort default rate" regulations, Gainful Employment, and the "90/10 rule".

Cellini, Darolia, and Turner (2019) noted above, demonstrated the impact of Cohort Default Rate regulations on the sector in the 1990s. Closing poor-performing for-profits caused students to shift sectors and lower debt. Further, they report that CDRs had little impact in recent years, and most schools have come into compliance (or may hire CDR managers to avoid failing).

The 90/10 rule requires that for-profits get no more than 90 percent of their revenue through federal student aid sources. Looney and Lee (2019) simulate proposed changes to the rule that would require all institutions to comply. They find that even if public and non-profit institutions were subject to the rule, it would have very little impact on institutions in these other sectors, as a much smaller portion of their revenue flows through tuition and federal aid. Only for-profit institutions have business models that rely almost entirely on federal aid.

In 2010, the Obama administration proposed the controversial Gainful Employment (GE) regulation that would require for-profit colleges and non-degree programs in other sectors to

meet certain debt-to-earnings ratios to remain eligible for federal student aid programs. Although it was recently rescinded by the Trump administration, two studies have considered the effects of the proposed GE rule and the accompanying "informational data release" on the sector. Although the mechanisms are not clear, Fountain (2018) finds evidence of declines in for-profit enrollment in response to GE, particularly among lower-income students. Kelchen (2020) finds evidence that for-profit institutions closed poor-performing programs in the wake of the GE. Both studies suggest that GE had its intended effect of keeping students from poor-performing programs.

The Demand Side

For-Profit Students

It is well-documented that for-profit students are demographically different than students in other sectors. They are more likely to be lower-income, older, women, students of color, veterans, and single-parents (e.g., Deming, Goldin, and Katz 2012; Cellini & Darolia 2018) relative to students in other sectors. For-profit students are most similar to students in community colleges, but some differences remain. About 64% of students in for-profits are female, compared to 54% in public two-year colleges and more than half of students in for-profits (52%) are Black or Latinx compared to 44% of community college students. The average for-profit student is about two years older than their counterpart in the public sector (age 24 vs. 22) (Cellini & Darolia 2018). Given the selection problem inherent in college choice and the relative disadvantage of students in for-profit colleges, it is perhaps not surprising that simple cross-sectional comparisons of student outcomes would find worse outcomes for for-profit students relative to other sectors.

In recent years, however, the economics of education literature has made great strides in isolating the causal impact of attending a for-profit college. Large-scale student-level administrative data have made possible difference-in-difference and matching techniques that come closer than ever before to isolating the impact of a for-profit education on student debt, default, employment, earnings and other outcomes, while resume audit studies have gone further in isolating causal impacts.

Earnings and Employment

Among the twelve studies of for-profit students' labor market outcomes in the economics literature (that I am aware of), the results are remarkably consistent: for-profit college students' earnings are lower or—at best, similar to—the earnings for students in other sectors. Cellini and Koedel (2017) conduct a comprehensive review of the literature on the labor market outcomes of for-profit students.[2] Since then, several additional studies have added to our understanding of the sector. Only one study—that uses no control group—finds sizable earnings gains for for-profit students (relative to their own pre-schooling earnings), the other 11 studies find negligible gains than remain at or, in many cases, well below the gains of students in other sectors.

A central concern in the many quasi-experimental studies of for-profit earnings is the extent to which estimates can credibly control for selection. Three studies use regression analysis and matching methods on relatively small samples of students in the Beginning Postsecondary Student data (Deming, Goldin, and Katz 2012) and the National Longitudinal

[2] See Cellini and Koedel (2017), Table 1 for a more complete description of each of the studies referenced below.

Survey of Youth 1997 (Denice 2015), and the Educational Longitudinal Survey (Liu and Belfield 2014A). All three find that for-profit students have lower post-college earnings than students in public and non-profit institutions. Using some of these same data sources, but applying difference-in-difference designs (including individual fixed effects), Chaudhary and Cellini (2014) with the NLSY97 and Lang and Weinstein (2013) with the BPS both find that the difference between sectors shrinks, with few significant differences in the earnings gains for two-year college students in the for-profit and public sectors.

The early studies of returns noted above were somewhat limited by their small sample sizes—none had more than a few hundred for-profit students in the sample. More recently, the availability of large-scale administrative data has allowed for more precise estimates of the returns to a for-profit education using quasi-experimental methods.

Nationwide earnings data from the Internal Revenue Services has been particularly promising in assessing student outcomes in the for-profit sector. Hoxby (2015) matches IRS data with College Board administrative data to assess the "value-added" of all sectors of higher education using a paired comparison technique. She finds that for-profit institutions have lower earnings gains than non-profit and public institutions. Cellini and Turner (2019) also draw on IRS data to assess the earnings gains of more than 700,000 for-profit certificate students. Using individual fixed effects and a matched control group of public sector students, they find much lower earnings gains for for-profit students ($2,100 less per year) and a lower likelihood of employment (by 1.5 percentage points). They also find that the earnings gains for for-profit students are no better than the gains for high school graduates with no college education. Armona, Chakrabarthi, and Lovenheim (2018) access data from the New York Federal Reserve

Consumer Credit Panel/Equifax and apply an instrumental variables approach based on labor demand shocks and the concentration of colleges. They find no significant differences in earnings between for-profit and public sector students, but lower employment for four-year for-profit students.

Two studies have used state-level unemployment insurance data. In the only study to report positive labor market effects for for-profit students, Jepsen, Mueser, and Jeon (2016), study two-year for-profit students in Missouri. Unlike the other studies in this literature, they lack a control group of public sector or high school graduates and implement a single-difference design, making it difficult to assess causal effects or differential effects relative to other sectors or high school only. Nonetheless, they report positive earnings gains to attendance. Using UI data to look at transfer students in two states, Liu and Belfield (2019) find wage penalties for students transferring into for-profit institutions, relative to those transferring to public or nonprofit institutions and find that some groups of students would be better off dropping out of a community college rather than transferring to a for-profit.

Two independently-conducted resume audit studies generate more credible causal estimates than the observational studies described above but examine a different outcome (Darolia et al. 2015 and Deming et al. 2016). In both studies, the authors sent out fictitious resumes to employers in multiple labor markets, randomly assigning for-profit, public college, and high school credentials to the resumes, and tracked employer callbacks as the outcomes of interest.

Darolia et al. find that employer responses were no different for for-profits relative to public institutions, but they were also no different for resumes reporting no college at all. Deming et al. break down the types of degrees further, finding particularly negative perceptions and lower call-backs for resumes listing online business certificates. In general, the findings of audit studies are similar to findings from the observational studies—relative to students in the public sector, the outcomes for for-profit students range from similar to worse, and the credentials from a for-profit generate no more interest from employers than a high school diploma.

Debt and Default

Policymakers and student advocates are critically concerned about student debt and default—and for a good reason. As noted earlier, tuition at for-profit colleges is nearly five times that of a public institution and for-profits disproportionately serve disadvantaged students who typically borrow more. Added to this, evidence of aid capture and fraud in federal aid have raised concerns about the sector and the enormous debt that students accrue. In for-profit colleges, 74% of first-time, full-time students take out student loans, compared to just 21% at community colleges and 47% in four-year publics. Among those who borrow, for-profit students also take on more debt—about $8,000 per year vs. $4,700 in community colleges and $7,000 in four-year publics (U.S. Department of Education 2019, Table 331.20).

The ability of students to repay loans is based both on their earnings after college and on the cost of college. Repayment also plays a role in federal student aid eligibility as institutions must ensure that graduates' default rates stay below certain thresholds. Currently,

the official cohort default rates (CDR) are based on the percentage of students who default within three year of entering repayment: for-profits the CDR is 15.2% compared to 9.6% in publics and 6.6% in nonprofits.[3] Overall, FPC students account for a disproportionate 35% percent of all defaults (Darolia 2015), and in 2019, 13 of the 15 institutions subject to sanctions based on high student defaults were for-profit colleges.[4]

Several descriptive studies have assessed differences in default by sector. After conditioning on rich observable information about institutions, both Belfield (2013) and Deming, Goldin, and Katz (2012) find that gaps in default rates remain. More recently, Looney and Yannelis (2015) find evidence that the increase in student loan defaults between 2000 and 2011 was associated with an increase in borrowers attending for-profits. Scott-Clayton (2018) calculates defaults over a 12-year timeframe—much longer than previous measures—and finds that for-profit students are at a particularly high risk of default. Most striking, she finds that more than two-thirds of Black dropouts who ever attended a for-profit college defaulted within 12 years.

Of course, defaults are closely related to the amount students borrow and, all else equal, students in for-profits borrow more than similar students in public institutions. Darolia and Cellini (2017) decompose the factors driving differences across student borrowing by sector and find that cost is by far the largest driver, with differences in student demographics and resources playing a negligible role.

[3] DoEd (2020) Cohort Default Rate data FY2016 available at https://www2.ed.gov/offices/OSFAP/defaultmanagement/cdr.html.
[4] https://www.ed.gov/news/press-releases/national-federal-student-loan-cohort-default-rate-continues-decline.

Unlike student borrowing in other sectors, where the earnings gains are typically high enough to repay debt, this may not be the case in the for-profit sector. In their review of the literature on student borrowing, Avery and Turner (2013) note the exceptionalism of the for-profit sector, finding that the for-profit sector is the only sector where students may be borrowing too much for college. This theory has support in other work. Putting together debt and earnings gains using IRS data, Cellini and Turner (2019) calculate that the average for-profit certificate student would be better off not attending: debt payments outweigh earnings gains by about $1,200 over the lifetime.

Conclusions and Future Research

In the economics of education, the exceptionalism of the for-profit sector has become clear. Although for-profits compete with nonprofit and public institutions for students, studies routinely find differences in the behavior of institutions and the outcomes of students relative to other sectors. For-profit colleges have followed different patterns of expansion and contraction, show a much heavier reliance on federal student aid and the GI Bill, and show evidence of aid capture that is not apparent in other sectors. The evidence is mixed on whether for-profits respond differently than other sectors to labor market demands, but what is clear is that any such responsiveness does not translate to improved outcomes for students. Rather, the literature routinely finds worse outcome on earnings, employment, debt, and default relative to other sectors, even when carefully controlling for student demographics.

Setting aside the allegations of false advertising, fraud in federal student aid, or unanticipated closures by any individual colleges, the high costs of attendance coupled with

poor student outcomes sector-wide, suggest that policymakers should consider additional regulations and accountability measures to target the sector. Further, research has clearly shown positive impacts of policies designed to hold low-performing institutions accountable: rather than forego higher education, students should switch to better-performing institutions in the face of school closures.

Future research on for-profit colleges should delve further into students' college choices and the recruitment practices of the colleges themselves. We know little about why and how students choose a for-profit institution. It could be that prospective students cannot access accurate information about student outcomes, debt, or sanctions imposed on the school—or they may know little about other college options. Future research should also continue to push further in assessing the causal impact of for-profit education on a broad range of student outcomes, and especially on student loan defaults. With new larger data sources, it should also be possible to push further in exploring heterogeneity within the sector. Investigations into differences by institution- and student-level characteristics will undoubtedly generate new insights into the behaviors and outcomes described here. As the landscape of higher education continues to evolve, scholars and policymakers should continue to pay close attention to the dynamic and dramatic for-profit sector.

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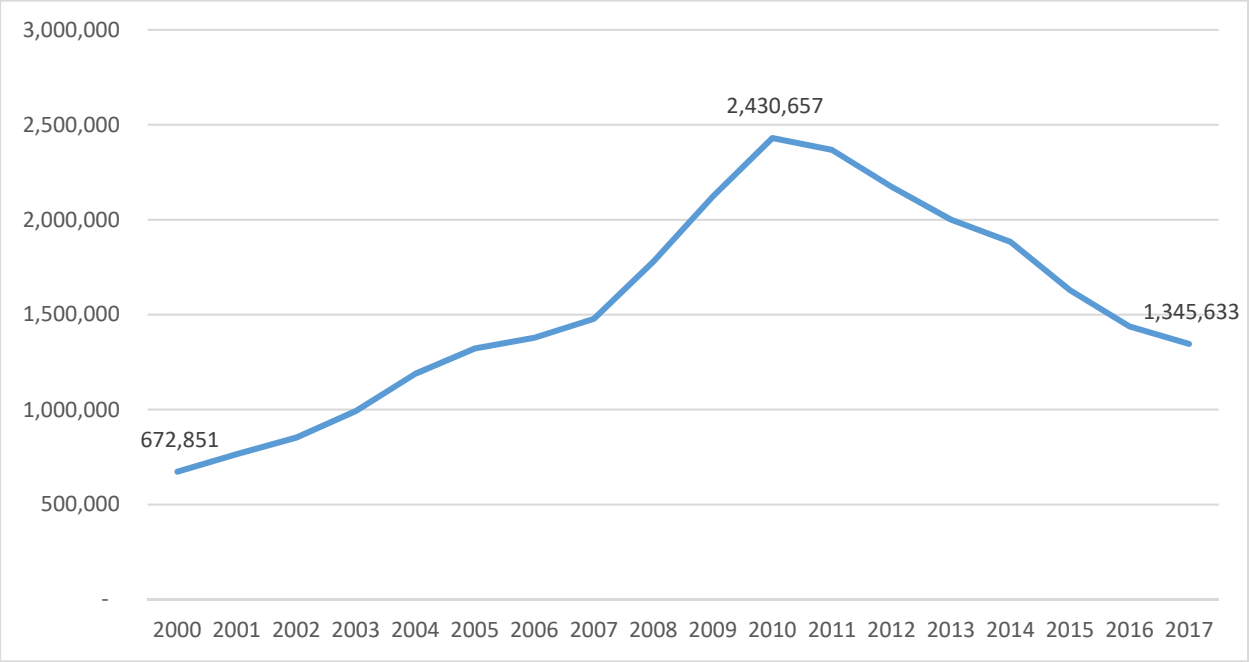
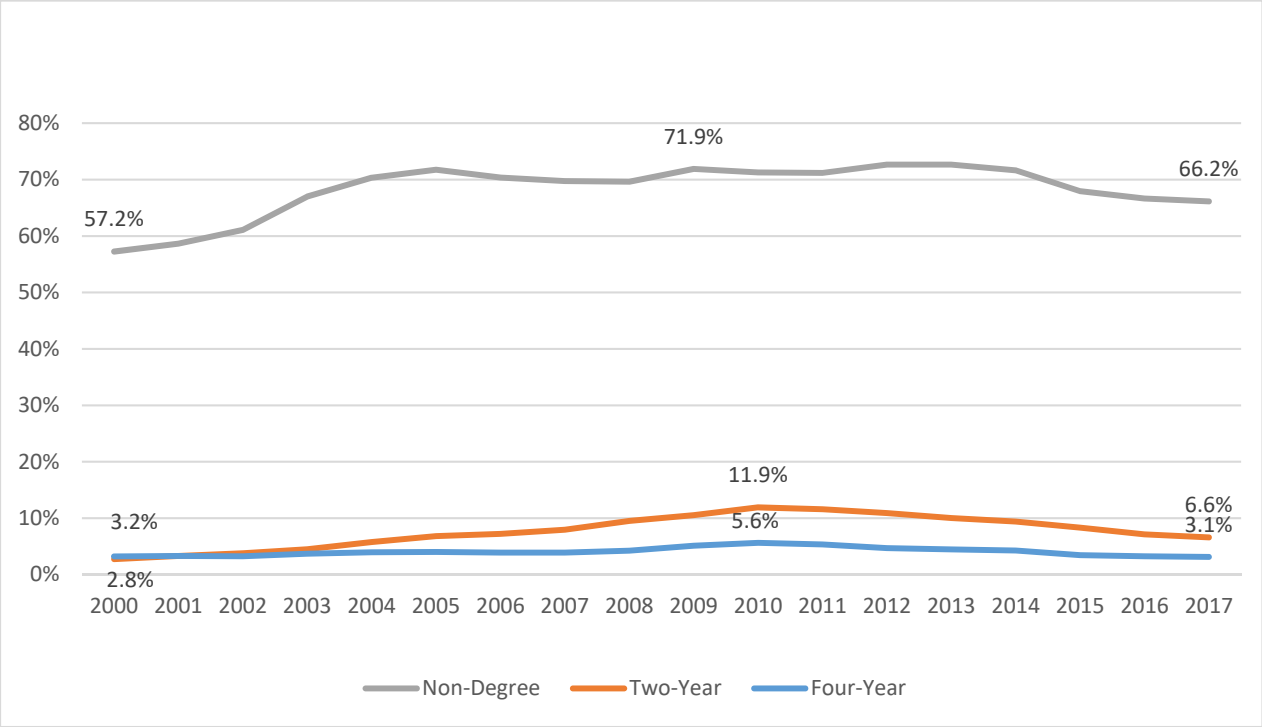
Figure 1. Total Fall Enrollment in For-Profit Institutions Over Time



Notes: Fall enrollment in degree-granting and non-degree institutions that participate in Title IV programs.

Source: Author's tabulations of data from U.S. Department of Education (2019), Tables 303.25 and 303.20.

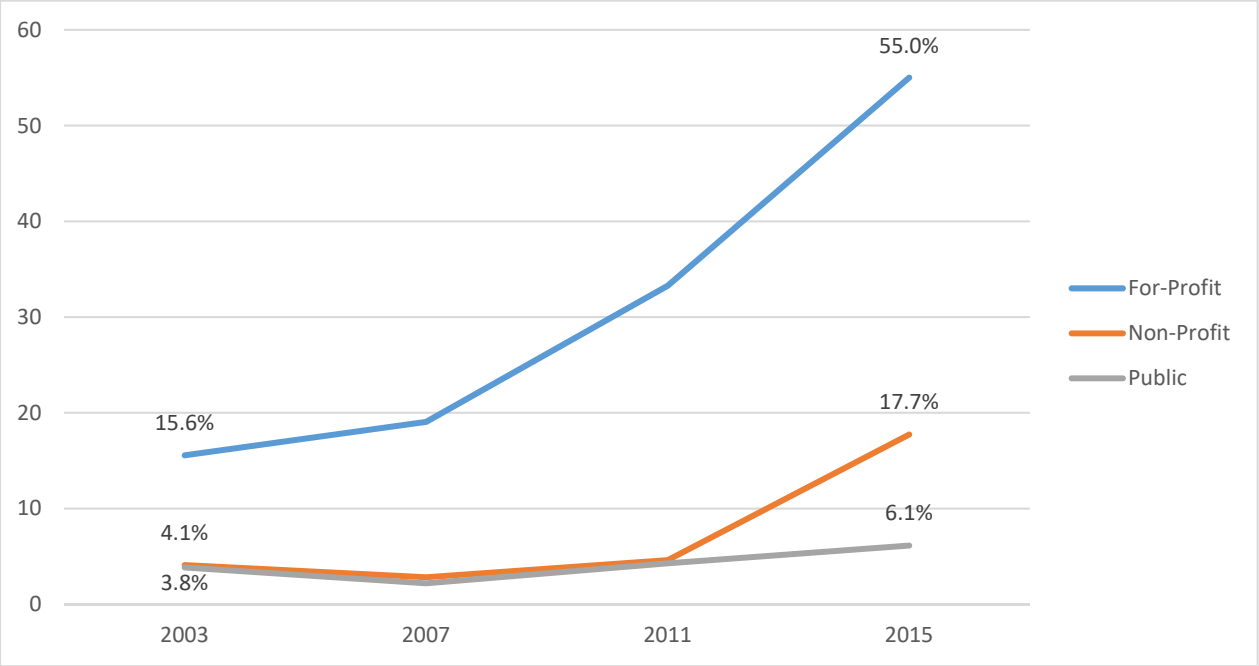
Figure 2. Share of Enrollment in For-Profit Institutions, by Level



Notes: Fall enrollment in degree-granting and non-degree institutions that participate in Title IV programs.

Source: Author's tabulations of data from U.S. Department of Education (2019), Tables 303.25 and 303.20.

Figure 3. Share of Four-Year College Students Enrolled Exclusively Online, by Sector



Notes: Degree-granting institutions only. Students pursuing their four-year program entirely through distance education.

Source: Author's tabulation of data from U.S. Department of Education (2019), Table 311.22.