

Drivers of the Rising Price of a College Education

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About this Policy Brief Series

This brief examines a critical state policy issue identified through the College Affordability Research Initiative, a collaboration between the Midwestern Higher Education Compact and the National Forum on Higher Education for the Public Good at the University of Michigan.

KEY INSIGHTS

- ▶ This brief explores the forces that have affected college tuition over the postwar period. College costs, general subsidies, and changes in the national distribution of income have all affected the trajectory of college tuition over time.
- ▶ Rising college cost is driven substantially by three economy-wide forces: (1) Lagging productivity growth is endemic to personal service industries, so service prices rise faster than goods prices. This is called “cost disease;” (2) The higher education workforce is highly educated and the cost of hiring highly educated workers has risen sharply since 1981; and (3) A college’s mission and market require it to meet a rising standard of educational care. More than any potential dysfunction on campus, these three factors have led to rising real costs.
- ▶ Administrative “bloat” and amenity competitions grab headlines but do not account for much of the rising cost. Rising numbers of professional staff and improved amenities are not inherently inefficient.
- ▶ The notion that more generous federal grants and loans cause upward pressure on list-price tuition has only been demonstrated conclusively at for-profit colleges. Public universities tend to pass most or all of any increase in federal aid back to students as a lower net price.
- ▶ Public and private institutions receive different subsidies. Despite state cutbacks, most public institutions significantly rely on state appropriations, but private institutions do not. The decrease in real state appropriations per student has been one of the major reasons why tuition at public institutions has risen more rapidly than tuition at private institutions.
- ▶ At public and private colleges alike, list price tuition has risen more rapidly than the net price the average student pays. Rising list price reflects the increasing affluence of high-income families relative to median-income and low-income families. This reflects the increasing use of tuition discounts, not soaring costs.
- ▶ Among the policy options, federal/state partnership programs offer one way to diminish or reverse state disinvestment in higher education, thereby tempering tuition increases over time. They are designed to give states stronger incentives to increase direct appropriations to public universities. One approach is to give states predictable block grants based on their level of spending per full-time equivalent student. This would reward states that have a demonstrated commitment to higher education while offering a monetary incentive to those that currently spend less.

Drivers of the Rising Price of a College Education

The problem of rising college tuition is nuanced and complex. Higher education is a service industry, and the cost history of services is quite different from the cost history of the rest of the economy. Most students attend non-profit colleges and universities, and non-profits have their own peculiar economic incentives. Higher education is heavily subsidized, and this is an important factor in price-setting. Much of the public discussion of rising tuition oversimplifies these issues in favor of stories of virtue and vice within the academy. Yet the main drivers of rising college tuition are larger political and economic forces buffeting the entire economy.

BACKGROUND AND CRITICAL CONCEPTS

In most industries, prices are a markup over costs. This markup allows firms to make a profit. Competitive forces limit the size of markups, so if one sees changes in price over long periods, changes in costs are the likely cause. Higher education is different. The vast majority of postsecondary students in the United States attend mission-driven not-for-profit colleges and universities. And most non-profit institutions are subsidized. These differences prove crucial in understanding how this important sector of the US economy reacts to technological change, to political developments that have reduced the share of the bill paid by government, and to changes in the national distribution of income.

Of the 18.8 million students enrolled at Title IV degree-granting institutions in the fall of 2017, 44% studied at public four-year universities, 20% attended private non-profit colleges, and 30% went to public two-year schools. Only 5% go to for-profit institutions.¹ A key difference between for-profit firms and not-for-profit firms is the presence of subsidies in the not-for-profit sector, which can take the form of private philanthropy and state appropriations. At

public and private colleges alike, private philanthropy is an increasingly important source of revenue. People don't give to their favorite hardware store, but donations to colleges and other non-profits are common. Institutions that tap into private philanthropy effectively over the next thirty years will have a distinct advantage in the higher education market. Endowment earnings and current giving allow non-profits to subsidize their "customers." These subsidies benefit students by reducing the cost to them relative to what is spent on them, and by drawing high quality peers to the school.

In addition to gifts and endowments, public institutions receive state appropriations. Much like private giving, a public university's state appropriation is a subsidy that permits the institution to spend more per student than it charges them. Because of gifts, endowments, and appropriations, the price charged by non-profit institutions is best described as costs minus subsidies, not costs plus markup. For non-profit colleges, rising price can result from either a change in cost or a change in subsidy. Both causes have shaped the rise in list price tuition in the postwar period.

We will use the term "general subsidies" to describe the gifts, endowments, and government appropriations that permit the price the average student pays to be less than the cost of producing the education the average student receives. There are two other subsidies that affect pricing and behavior in the higher education marketplace. We will call these subsidies "grants," though they are often called scholarships. Grants are given to individual students, which differentiates them from general subsidies. Some grants come from sources outside of the college or university. Examples include federal Pell grants and National Merit Scholarships that provide money to cover tuition and other expenses associated with college attendance. Some grants come directly from the institution itself. These are tuition

¹ National Student Clearinghouse Research Center. (2017). [Current term enrollment estimates](#).

discounts. Examples include scholarships given to Division I athletes, need-based aid provided by the institution, and merit grants given by colleges to academically-gifted students who may or may not qualify for need-based aid. Like outside grants these institutional grants are used by individual students to cover expenses.

Given the presence of all of the subsidies, discussions of college price have to keep track of several pricing concepts as well as being clear about the distinction between cost and price. The following definitions will be useful in the discussion to follow.

- **Costs** are payments made by the institution to procure the resources needed to produce the items in the bundle of services a college or university provides. These payments include everything from the wages and salaries of college employees to payments that cover the heating, cooling, and upkeep of college buildings.
- **Average general subsidy** is the per-student proceeds from gifts, endowments, and government appropriations used by the institution to cover costs.
- **List-price tuition** is the price posted in the institution's catalog. It is the price paid by a student who receives no grants or scholarships from the institution.
- **Average net price to the institution** is the list-price tuition minus the per-student institutional grant. For the institution to stay economically viable, average net-price to the institution has to be greater than or equal to average costs minus average institutional subsidy.
- **Average net price to the student** is the list-price tuition minus the sum of per-student institutional grant aid and the per-student outside grant aid.²

Discussions of college pricing are complex in part because there is a triad of tuition concepts. Since it is printed in the catalog, list-price tuition receives considerable attention in the press. List price is important

for many reasons. Some students do pay full list price. Families that pay list price tend to have well-above-average income, and they vote, so changes in list price tuition have an outsized political impact, especially at public universities. Since it is the most publicized price in higher education, list price is often the anchor people use in thinking about the how much it costs to send a young person to college. Students from lower-income families usually know that they will not have to pay the full list-price tuition, but despite the information available online (in net price calculators, for instance), many families still misperceive the true cost of attendance. A long literature in psychology has established that people under-adjust in these situations. As a result, they overestimate the true cost of college. This problem is greatest among students who are the first in their family to go to college because the family has little or no experience with college pricing. This is one reason why talented students from low-income families are underrepresented at highly-selective colleges and universities despite the fact that net price at these institutions is often lower than the net price these students pay at the less selective institutions they actually attend.³

But list price is not the important tuition concept in many situations and for many decisions. College and university finances are directly affected by the average net-price to the institution. Schools that see falling net revenue generated by the average first-year student are in financial trouble. Students are much more concerned with the average net-price to them. And the average net price to the student has a considerable variance. At private non-profit institutions, fewer than 20 percent of full-time students pay the list price, and the average discount is close to 50 percent. At public universities, roughly half of the students pay list price. Some students may see a net price close to the average, but others' net price deviates from the mean, often by large amounts. Opaque pricing discourages many families from taking the decisions necessary to prepare for college. Opaque pricing also deters many of the nation's most talented

² The net cost of attendance includes room and board, books, and transportation. However, analyses of changes in the cost of college itself utilize a more restricted "tuition and fees" definition of net price.

³ This phenomenon is well explored by Avery and Hoxby (2013).

low-income students from pursuing a higher education at institutions that offer them a good match for their talents and interests.

CHANGES IN THE REAL COST OF A YEAR IN COLLEGE

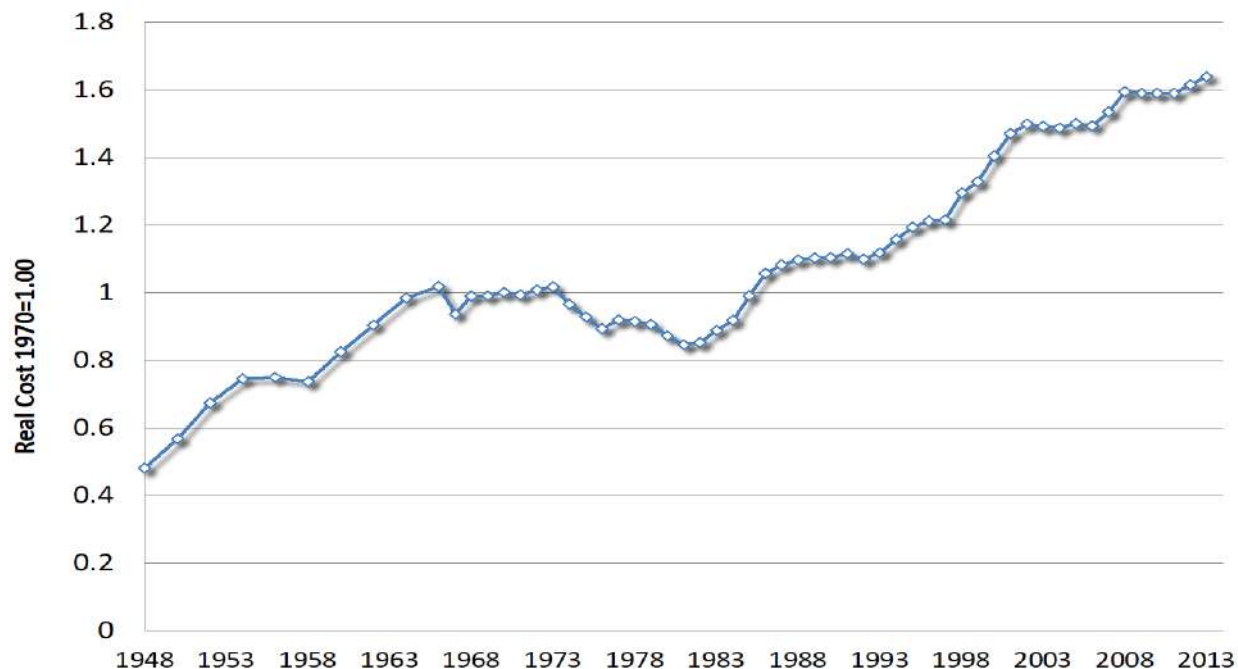
The cost of producing a year of college education has risen substantially in the postwar period. Figure 1 shows how the “real” constant dollar cost of higher education per full-time equivalent student has evolved in the United States over the past seventy years. Real cost is a fraction. The numerator of the index is a measure of average college costs in today’s dollars. The denominator is a measure of overall price levels in the economy, such as the consumer price index.

General inflation is an obvious force pushing up costs

in higher education, and in every other industry. Figure 1, however, tells us that college cost behaves differently than the overall price level most of the time. Since the real cost of a year in college has risen substantially, any story of college cost must explain why college costs have grown faster than the overall rate of inflation.

This idea highlights a major problem with some of the popular accounts of soaring tuition that focus exclusively on the numerator (college costs); they are higher education specific. In some cases, they highlight phenomena driving costs in higher education without realizing these same forces are also driving costs in the rest of the economy. Finding something that pushes up costs in higher education is only half of the job.

FIGURE 1. Index of Real Higher Education Cost, 1948-2013



Source: Matched series from the 2006 Digest of Education Statistics on “current-fund expenditures and educational and general expenditures of degree-granting institutions” between 1929-30 and 1995, and the Delta Cost Project from 1987 to 2009. Estimates have been adjusted for inflation.

Any story of rising college cost must also explain the broad history of real college cost over long stretches of time. Figure 1 shows us that the history of college cost since World War II is divided into three distinct periods. College cost per full-time student rose rapidly in real terms until the late 1960s and then entered a stable or declining phase for over a decade. In the early 1980s, real college costs then began a sustained ascent that continues to the present day. The annual rate of cost increase in the early postwar years (1948-1966) actually was much higher than the average annual increases since the early 1980s.⁴

This pattern of cost change highlights another shortcoming of many popular narratives of rising cost that posit growing dysfunction and inefficiency in the academy. We will evaluate these dysfunction arguments later. We note now that they are unidirectional – always pushing cost up. Unless universities became significantly more efficient in the 1970s, dysfunction arguments have trouble explaining an extended period of declining real cost.

DRIVERS OF COST

The task of identifying the causes of rising cost is inherently comparative and historical. Higher education shares many features with other personal service industries, and this commonality helps explain rising college cost. Personal services also differ from the average of all other industries, and this is another crucial part of the story of college cost. Archibald and Feldman (2011, 2017) point to three principal drivers of college cost. The first is cost disease. The second is the fact

that the workforce of colleges and universities is highly educated relative to other industries. Lastly, colleges and universities must meet a “standard of educational care” that has become more expensive to deliver over time.

Driver 1: Cost Disease

When real college costs are increasing, cost per student is rising faster than cost per unit of output produced in the economy in general. Cost per unit of output is determined by two things. The first is what a “firm” has to pay for the “inputs” it uses in production (things like labor, machinery, and electricity). The second is the amount of “output” those inputs can produce. This is productivity.

Productivity in higher education has grown very slowly relative to the average rate of productivity growth for the economy as a whole. The number of students a professor teaches per class hasn’t changed much over time.⁵ More generally, a 15-student research seminar isn’t the same if taught to 40 students, and a 35-person lecture isn’t the same if taught to 120. Measured productivity can always be increased by stuffing more students into a class, but the experience changes. As a result, true quality-constant productivity growth is difficult to achieve in education. By contrast, technological developments have allowed steel output or tons of wheat produced per labor hour to grow substantially, without harming the quality of the product. This causes what is called “cost disease.”⁶ Cost disease affects all personal service industries, not just higher education. The same low productivity growth “afflicts” hair dressing and massage as well as health care and legal services. Figure 2 shows the real price of four important personal services over a seventy-year time span between 1947 and 2008.⁷ Each industry has its own stories for

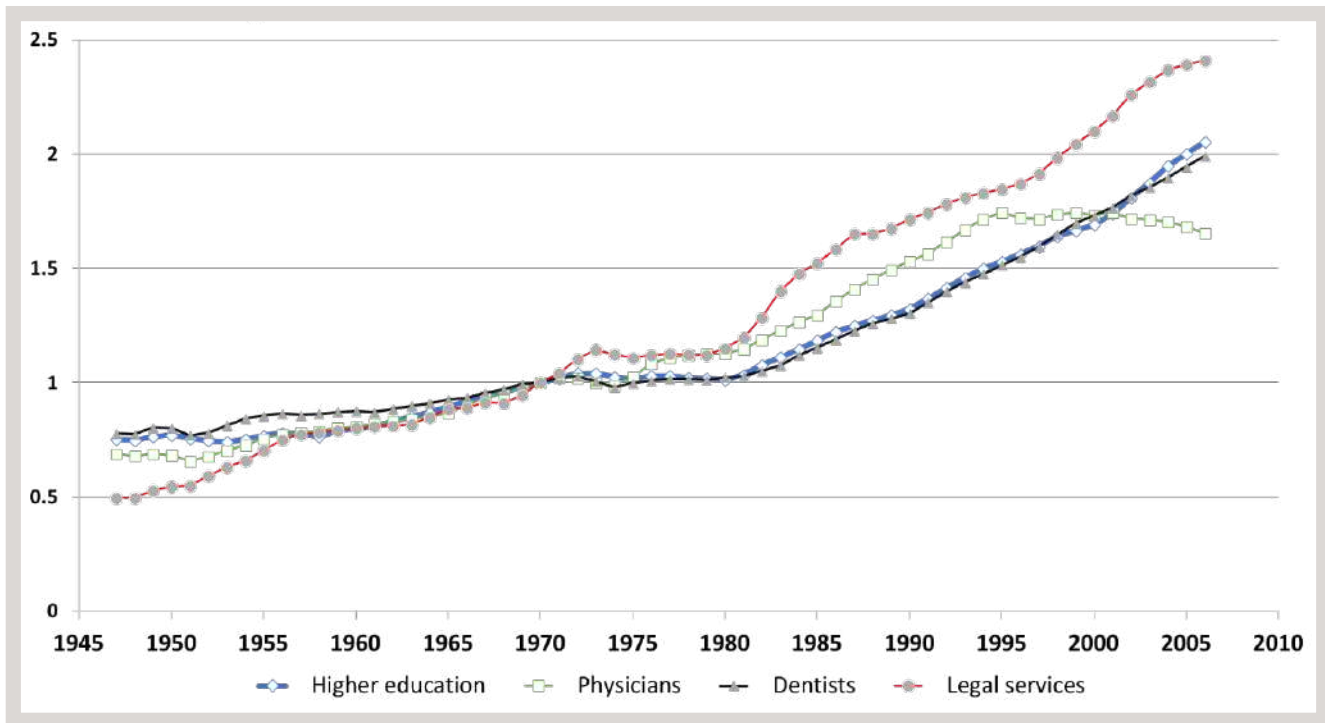
⁴ Between 1948 and 1966 real higher education cost rose by almost 4% annually. Since 1981, the annual increase has averaged less than 2.2%.

⁵ For instance, according to the National Center for Educational Statistics (1993), between 1987 and 1992 the number of students in the average postsecondary class stayed roughly constant at 30, and the numbers were also largely unchanged across the ranks of the professoriate. For that five-year period, there was no productivity growth, measured crudely as students taught per professor.

⁶ Cost disease was introduced by Baumol and Bowen (1966). The empirical evidence for the existence of cost disease is quite strong, though one can also find studies that minimize its impact in higher education. See Gordon and Hedlund (2017) for an example. Gordon and Hedlund’s primary focus, however, is on list price tuition-setting, which a minority of students actually pay. Fang and Jones (2016), by contrast, study cost changes and find strong support for cost disease in higher education.

⁷ The data is taken from figure 4.2 in Archibald and Feldman (2011). The Bureau of Economic Analysis now measures the price index for higher education differently than it did in 2010, but the basic pattern over time is the same. The BEA price index for higher education is based on list price, not average net price, so it substantially overstates the real rise in the price of a year in college for the average student.

**FIGURE 2. A Real Price Index for Four Personal Services
1947-2008**



Source: Bureau of Economic Analysis, see Figure 4.2 in Archibald and Feldman (2011).

particular ups and downs, but collectively the pattern is rising real prices over long stretches of time. This is not a coincidence.

In most personal services, the quality of the service is directly related to the time spent with the service provider. If the physical therapist, lawyer, or dentist becomes more productive by servicing more clients in an hour, clients will notice a fall in the quality of the service. If a college eliminates small interactive classes in favor of large lectures, each faculty member's measured labor productivity would rise. Its "clients," however, likely would perceive a lower quality experience. If quality is important to customers, personal service providers will not seek

productivity increases that lower quality. In the absence of technological improvements that allow a university to shed labor without compromising quality, productivity growth in higher education will lag productivity growth in the rest of the economy.⁸

Since all industries have to hire workers from the same national labor pool and buy their electricity and paper clips from the same suppliers, industries that experience rapid productivity growth are likely to see costs grow more slowly than industries whose productivity is stagnant. Faster productivity growth in the economy slows the growth of cost per unit in general compared to cost per student in higher education and other personal services. This is cost disease.

⁸ Online education is often touted as the way out of higher education's low productivity trap. This is a complex issue well beyond the scope of this brief. See Archibald and Feldman (2017, chapter 8) for a fuller discussion.

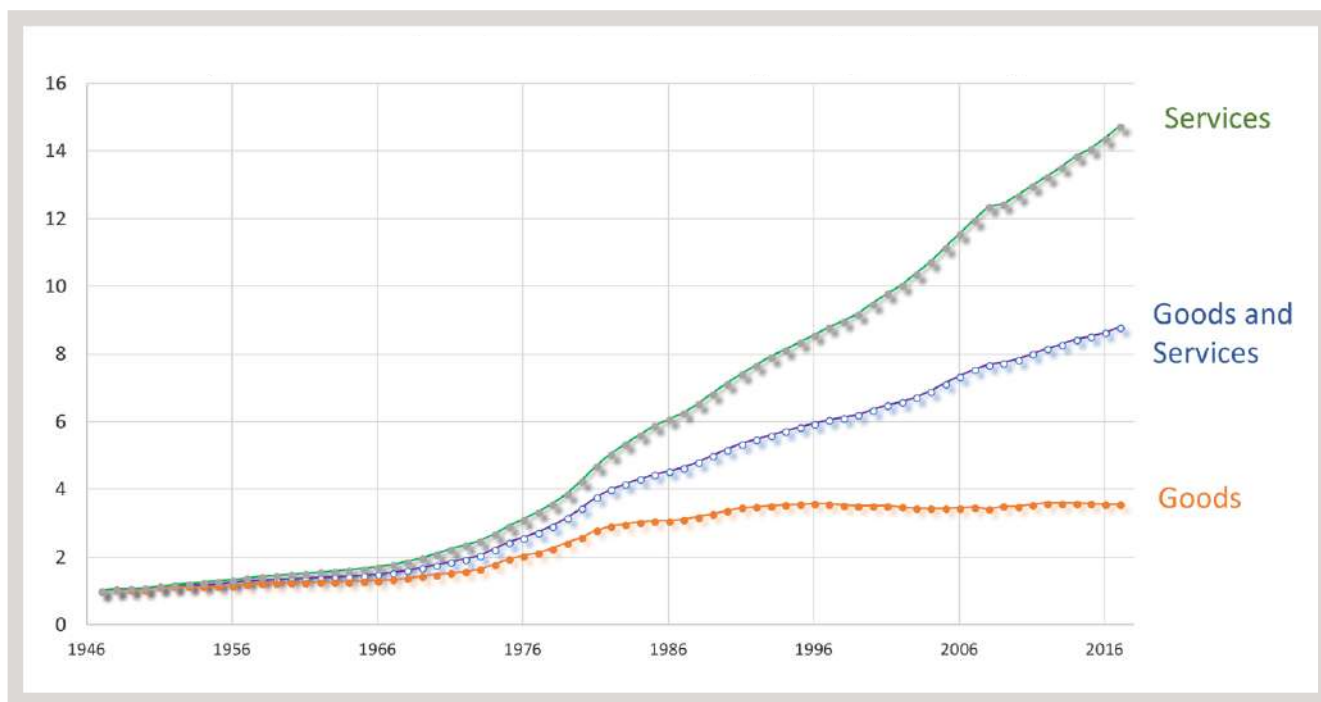
Despite its fearsome name, cost disease doesn't imply a sick economy. It is caused by productivity growth that raises living standards. In a world of cost disease, the **relative** price of services tends to grow, as does the percentage of the average family's income spent on services. But productivity growth in manufacturing and in other sectors means the size of the basket of goods and services the average family can buy grows as well. Cost disease does not make higher education less affordable. Changes in the distribution of income and decreases in state subsidies are the driving engine of the contemporary affordability crisis.

Figure 3 shows the significant impact that cost disease has had on service prices over long stretches of time. Goods prices have risen more slowly than the overall inflation rate,

while service prices have soared. In other words, the **relative** price of goods has gone down compared to services.

The cost disease argument is compatible with relatively constant real cost in higher education for most of the 1970s. The driver of cost disease is productivity growth in the overall economy. If overall productivity growth slows down, the pressure on service prices from cost disease will be reduced. There was a noticeable slowdown in overall productivity growth in the 1970s. This productivity growth slowdown during this period is consistent with slower growth in real costs in higher education.⁹

FIGURE 3. Price Indexes for Goods and Services, 1947-2017



Source: Bureau of Economic Analysis Price Indexes for GDP by major Type of Product. Table: 1.2.4.

⁹ Figure 4.7 on page 74 of Archibald and Feldman (2017) shows total factor productivity in the US economy from 1950 through 2011. Total factor productivity is largely unchanged through the 1970s when college cost and the price of many personal services stopped rising. It resumes growing in the early 1980s when the real cost of higher education begins a sustained rise.

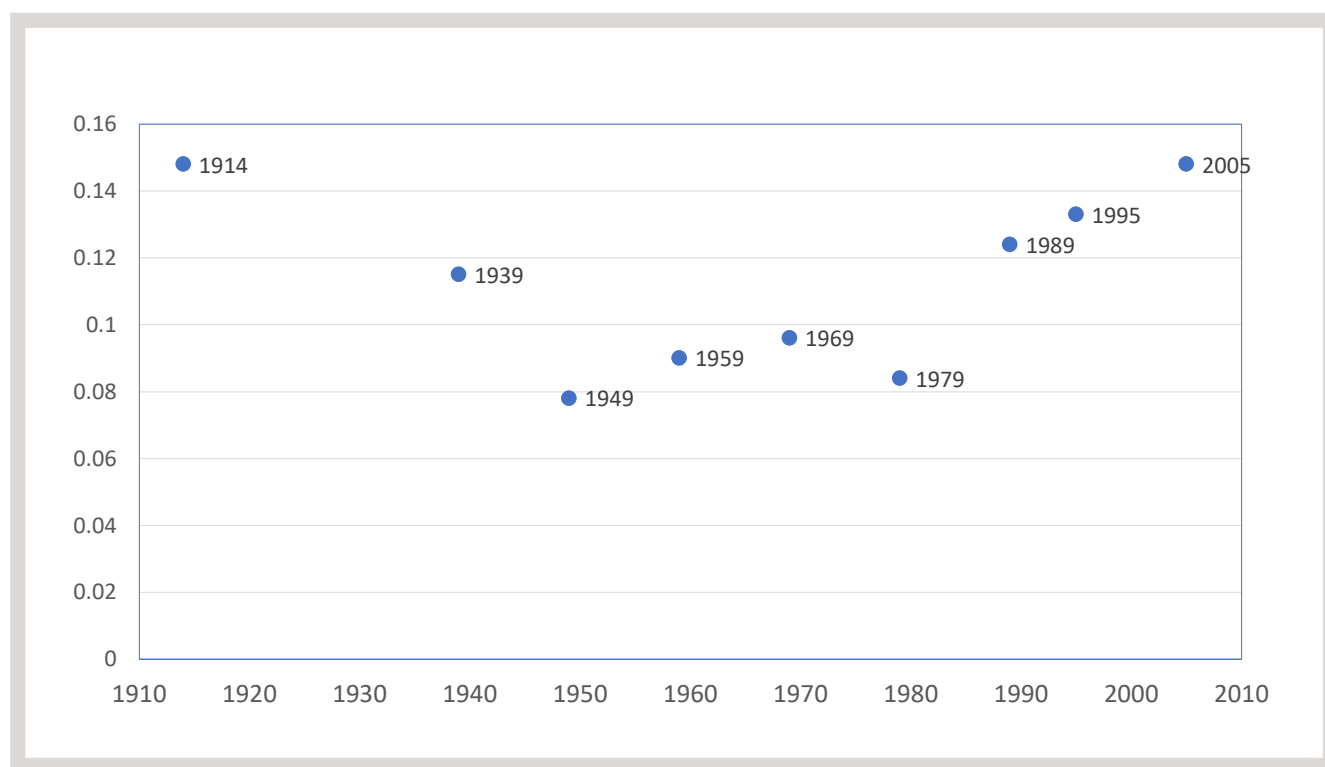
Driver 2: Highly Educated Workers

Although all industries compete for talent in the broad national labor market, industries differ in the amount of highly educated and less skilled workers that they need. Colleges and universities use a labor force rich in highly-educated employees. In any ranking of industries, the education sector employs a greater fraction of college-educated workers than almost any other. Over two thirds of the employee base in higher education is highly educated. This is over three times higher than the percentage of highly

educated employees in the “motor vehicles” sector.¹⁰

This difference plays a role in the history of college cost because wages of highly-educated workers have behaved quite differently than the wages of workers with a high school degree or less. As Goldin and Katz (2008) have shown, the rate of return to an additional year of college mirrors the time path of college cost. The rate of return to an added year of schooling rises starting in the mid-1940s, falls during the 1970s, and rises very rapidly in the 1980s (see Figure 4). The cost pressure resulting from the mix of

FIGURE 4. Returns to a Year of Schooling for Young Men (College versus High School)



Source: Adapted from Goldin and Katz (2008), p. 84.

¹⁰ See Archibald and Feldman (2011), p. 51, table 4.2.

workers hired by colleges and universities helps explain the two periods when real college costs are rising as well as the extended pause during the 1970's when real college costs ceased to rise.

Driver 3: Standard of Care

The third and final part of the explanation for the time path of real college costs involves how colleges and universities interact with new technology and methods. A typical profit-driven industry will adopt a new method of operating if the change lowers cost or increases revenues. Colleges and universities react to new technologies differently. As new ideas, techniques, and machinery diffuse through the economy, colleges and universities are often quick adopters even if this raises cost. This is easiest to see in STEM fields, since laboratories are stocked with new devices carrying high price tags. But the effect is felt throughout the university. New digital resources also affect the way the humanities are taught. Part of the mission of a university is to prepare students for the current and future working world, and that world is saturated in new technology. Universities are often the producers of new ideas and techniques since another part of their mission is to extend the boundaries of human knowledge.

In an important sense, higher education shares with medicine the idea of “standard of care.” New approaches, if they are better, displace older ways even if the older ways are less expensive. In part, this reflects the mission-driven incentives of the non-profit university. But it also reflects the expectations of students and families who pay the bill. Any institution that fails to keep current may be committing educational “malpractice.” Standard of Care also extends to other services a modern college offers. Schools must provide services to students with identified learning disabilities, for instance. And the standards for psychological counseling and career planning are higher for current students than for their parents’ generation.

In summary, three broad forces contribute to cost increases in higher education (and in a set of related services) that exceed the overall inflation rate in the US economy. The first is cost disease that affects most personal services. The second is the rapid rise over the past forty years in the costs of hiring a highly-educated workforce. And lastly, meeting a standard of care in an era of rapid technological change has added to cost.

OTHER DRIVERS OF PRICE

As noted earlier, for a non-profit firm to survive over the long run the average net tuition the institution takes in must meet or exceed its average cost less the average general subsidy the institution can tap. To explain changes in net-tuition revenue to the university or list-price tuition printed in the catalogue we have to understand what has happened to subsidies as well as what has happened to costs.

State Appropriations

Subsidies are one area in which the difference between private non-profit institutions and public institutions is crucial. Public institutions receive state appropriations while private non-profit institutions do not. The fall in state appropriations has been a major force increasing net tuition and list-price tuition at public institutions.

Figure 5 gives the nationwide averages for state appropriation per FTE student and net tuition revenue per FTE student since 1990 in constant 2017 dollars. In real dollars, state support per full-time student has fallen by 14.3% since 1990, and the decrease is a more precipitous 19.9% since 2001. In an era of declining subsidy, public colleges and universities must increase revenues from other sources to make up for lost public support, as well as to cover any cost push forces like cost disease or standard of care that was discussed above. The data on net tuition in Figure 5 show clearly that public universities increasingly rely on net tuition dollars. Net tuition contributes a greater fraction of total institutional revenue than in the past.

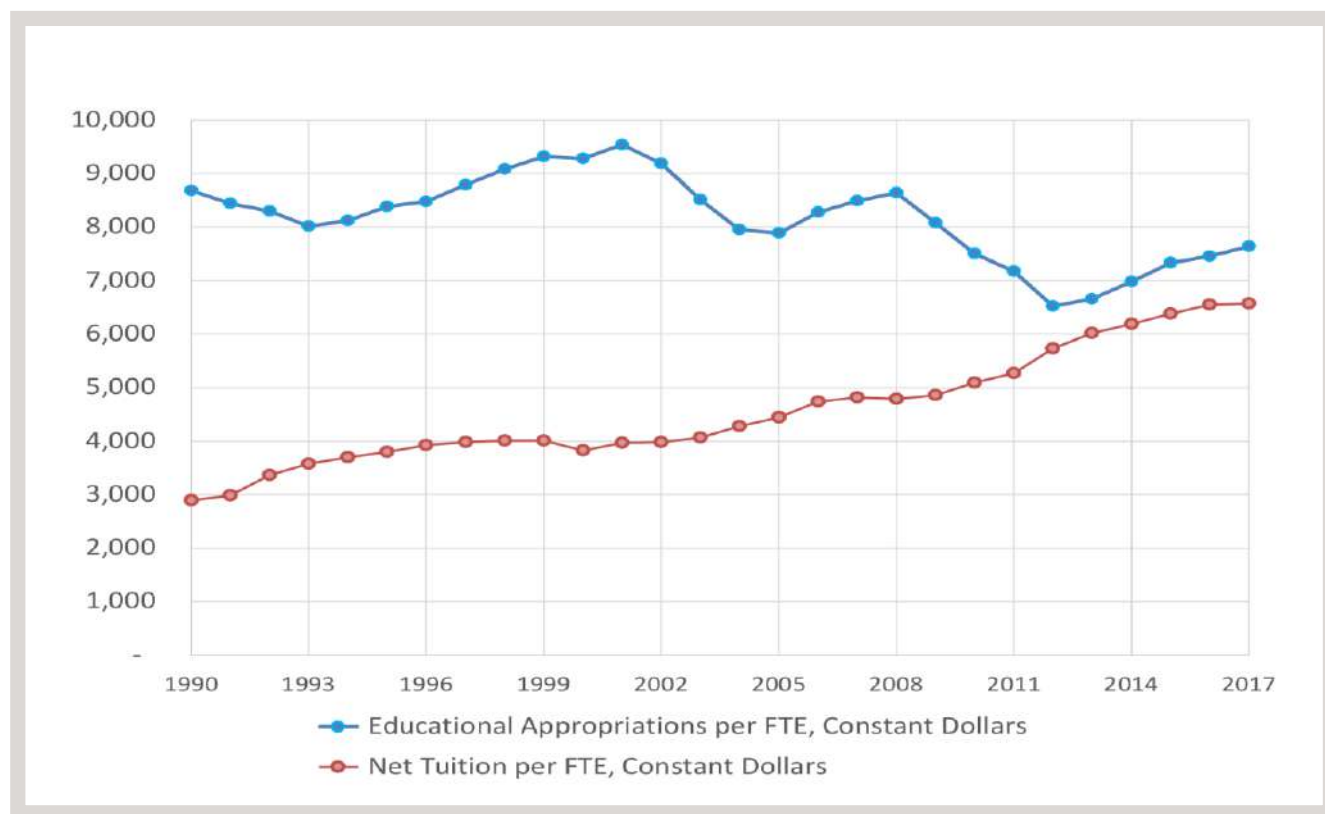
Private Fundraising

State-supported institutions have also tried, with varying success, to tap other sources of revenue. Most public universities have expanded private fundraising activities. The most selective flagship institutions have been more successful, and this is differentiating them from less selective institutions that serve a greater number of lower income and first-generation college students. As the data in Figure 5 show, these efforts have not succeeded nationwide in holding down the rise in net tuition revenue.

Non-Resident Student Enrollment

Many public and private universities have attempted to ramp up enrollment of out-of-state students and

FIGURE 5. State Appropriations and Net Tuition, 1990-2017



Source: State Higher Education Executive Officers (SHEEO).

international students who bring in substantially more revenue per student. Some have succeeded. Over the last decade Purdue University has added 5,300 high-paying out-of-state and international students while losing 4,300 lower-paying in-state students. State resident students see a price of just under \$10,000 in tuition and fees while non-resident students pay roughly triple that amount. This shift in the composition of the students who attend has generated significant new tuition revenues per student. One can do many things with new revenue, and Purdue has chosen to hold list price tuition constant for the past seven years. Most public universities, however, have not been able to tap into non-tuition revenue in great amounts, nor have they been able to shift the composition of their enrollment so effectively toward higher-paying families.

Tuition Discounting

Changes in average cost and average general subsidy explain the average **net** tuition a college or university needs to take in. Other factors also affect list-price tuition for both public and private institutions. America's 3,000 public and private non-profit higher education institutions are astonishingly diverse. A wide variety of mission-related or revenue-driven reasons affect how they recruit students and fashion the incoming class. To entice highly-desirable students to attend, colleges and universities award grants and scholarships. Some of these are need-based grants that make a college education affordable for students from low-income families. Others are merit-based grants going to students with particular talents such as a good jump shot, outstanding musical ability, or very high SAT scores. Institutional grants are essentially tuition discounts or tuition waivers.

Tuition discount rates at both private and public non-profits have increased over time. This means the difference between the list price and net price that the average student actually pays has grown. We highlight two important reasons for this change in pricing behavior. First, the income distribution in the United States has become more unequal. As higher education costs increase, a college or university that wants to attract the most talented students regardless of family income has to offer ever larger grants to students from low-income families. As Figure 1 showed us, the average cost of “producing” a year of college education began rising in the early 1980s, so average net price to the institution has to increase. The only way an institution can hold on to its students from low-income families is by increasing the grants it offers to them.

Second, as transportation has become less expensive and information about college options has improved, the market for students has become less regional and more national. This has increased the competition for very talented students who can make a difference in the classroom and on the playing fields. Many schools also struggle to fill seats with students who can pay a significant fraction of the cost. These schools compete using merit grants to retain demand from higher-income families who can help meet the school’s revenue needs. The result has been an arms race in merit grants. As one school ramps the scholarships it offers to very talented students, others find they have to follow, and the tuition discount rate climbs as a result.

APPLICATION: UNDERSTANDING PRICING OVER TIME

Figure 6 tells the story of list-price tuition and fees and net tuition and fees (which we have called average net price to the student) over the last twenty years. The evidence includes public and private non-profit institutions.¹¹ Four things stand out.

First, from 1997-98 to 2017-18, the average annual growth rates of real tuition at public institutions, both list price (3.5%) and net price (3.1%), exceed the growth rates at

private institutions (2.4% and 0.8%, respectively.) This shows the importance of decreases in state appropriations per student. These decreases push up tuition at publics but do not affect tuition at privates.

Second, the difference between the annual growth rate of list-price tuition (2.4%) and net tuition (0.8%) at private institutions is much greater than the difference at public institutions (3.5% and 3.1%). This tells us that private institutions have pushed up discount rates more aggressively than public institutions have.

Third, the very low growth rate of net tuition paid by students at private institutions (0.8%) is surprising given all the public angst about college pricing. Average net tuition at private colleges actually has declined from its peak before the financial meltdown in 2008. There are two possible explanations. First, the general subsidies (gifts and endowment earnings) available to many of the nation’s most selective private institutions has increased, and this has lowered their need for tuition. Second, the underlying increase in cost per student has decreased recently as the rate of productivity growth in the economy has slowed.

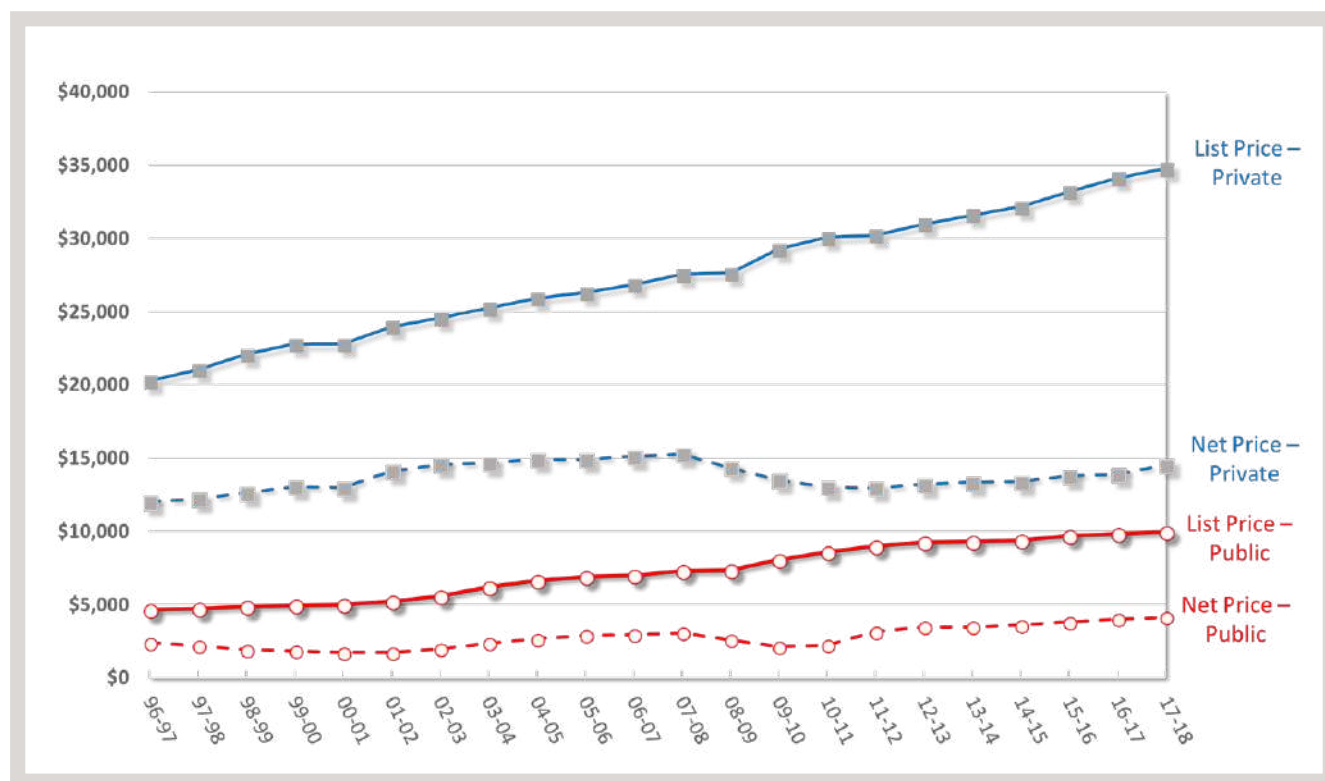
Fourth, and perhaps most importantly, the data show that the growth rates of list-price tuition exceed the growth rates of net tuition. Commentaries focusing on list prices miss the story. Explosive growth in college cost is not the main reason tuition is rising rapidly. If state appropriations had not fallen, real net tuition would have shown very modest growth in the public sector as it did in the private sector. And if colleges had not increased their use of tuition discounting, list-price growth would also have been more modest as well. Unlike the much of the public discussion, the recent history of college tuition highlights what has happened to subsidies and to the national distribution of income more than what has happened to costs.

ALTERNATE NARRATIVES

There are other explanations for the rise in real tuition. Some focus on rising cost, and they identify institutional dysfunction and inefficiency as the source of the problem.

¹¹ As we pointed out in the text, the data for net price are for net price to students, not net price to the institution. This means that changes in outside scholarships will influence these data. This is unfortunate, but any such changes, for example, because of changes in federal grant programs, will affect private and public institutions similarly.

FIGURE 6. List Price Tuition and Fees versus Net Price Tuition and Fees in 2017 Dollars



Source: College Board, Trends in College Pricing 2017.

We have already alluded to two objections to these narratives. First, many of them are higher education specific instead of comparative. They fail to recognize that the forces they see driving up higher education costs affect other industries. Second, the cost push factors they identify only push costs up. These explanations have trouble explaining the 1970s when higher education costs were flat or declining. Other arguments focus on how government subsidy raises demand and thus price in the market. Three of these propositions are briefly discussed and critiqued.

Administrative Bloat

Administrative staffing at colleges and universities has grown more rapidly than instructional personnel or than the number of students served. Non-instructional staff per student served has indeed risen, but the pejorative term “bloat” is a useful political claim more than an economically

accurate description.

The entire economy has shifted away from blue collar and clerical jobs toward white collar employment. In colleges, large numbers of secretaries and typists have been replaced by smaller numbers of department “admins” and a lot of personal computers. Computer center IT staff are classified as administrative, and the number of these workers has grown dramatically at universities, as they have at companies everywhere. This national trend of substituting smaller amounts of high-skilled labor for large amounts of less-skilled labor is productivity enhancing, including at colleges and universities. And it raises the percentage of an employer’s workforce that is defined as administrative.

Some of the increase in administrative staff helps colleges meet what we called the standard of care. Increases in the size of a college’s counseling or career planning staff is a

good example. There is ample evidence that the current crop of college students demands more counseling and psychological intervention than previous generations. Colleges have responded to this demand. In employee counts, this adds to administrative staff. And it adds to the cost of attendance. A service that adds to cost and to quality is not inherently inefficient.

The cut in state appropriations that we highlighted earlier has helped to spur another rise in administrative employment. Public institutions have joined their private brethren in ramping up private fundraising. This has led to ballooning staffs in offices of university advancement. These people count as administrative. But are they cost drivers or revenue drivers? Rational university employers don't add fundraising staff unless the expected return on annual giving and increased endowment earnings supports the salary of new hires. Yet stories of administrative bloat often uncritically fixate on counts of "administrators per 100 students."

Similarly, expansions in government regulations have added to the number of compliance officers of various types. These employees count as administrative. They are hired to meet externally defined mandates, and those rules may or may not be excessive. The work must be done and the reports must be written. This is another instance where the higher education industry is not unique. The rest of the economy has experienced a similar push for reporting and compliance to government agencies. We have seen no evidence that compliance costs in higher education have grown significantly faster than in other industries across the economy. Compliance costs do not explain the rise in real college cost, which is comparative.

Amenity Competition

Alumni who return to campus for their 50th reunion often are amazed at the quality of dormitories, dining facilities, recreational facilities, and science laboratories. Science labs fall under the standard of care, so we believe we understand those cost increases. But perhaps other amenities sparkle because of a wasteful zero-sum competition to attract students. This argument is sensible, but it is ultimately not a compelling explanation of rising college cost.

Dormitories and dining facilities are the largest component of a college's "amenities." Room and board are part of

the cost of attendance at residential colleges, and these charges are separate from tuition and fees. Like teaching, room and board is a service subject to cost disease. No one should be surprised that living and dining costs have risen in real terms over time.

In addition, colleges do compete on amenities. For the most part that competition is healthy because it reflects demand. Real income per capita in the U.S. has increased threefold since 1960, so no one should be surprised if the quality of the rooms and meal plans is better than it was in the past. This competition could be unhealthy if it is an arms race that yields quality levels that students would not choose to pay if they could avoid it. But the idea that College A increased the quality of dormitories and dining halls only because College B did so leaves out an important third party – off-campus apartments and off-campus dining. These options have improved over time, so even if residential colleges violated U.S. anti-trust law and made a pact not to compete, they would still have to upgrade their facilities to keep students on campus. Living on campus is valuable, but not at any price. And lastly, although room and board are an important part of the cost of attendance for students at residential institutions, less than 20% of America's college students actually live and eat on campus. For most of America's college students of modest means, campus room and board charges are not the financial constraints that limit educational access. Tuition, foregone wages, and the general cost of living play a more important role.

Recreational facilities also have improved on most college campuses. In the past, most students had to share utilitarian gyms, pools, and weight rooms with athletic teams. Most colleges and universities have expanded and improved their facilities to reflect the experiences and preferences of contemporary students. Those contemporary preferences include relatively inexpensive items like rock-climbing walls that have become public examples of supposed waste and extravagance. These facilities build community and social engagement as well as offering health benefits. And they are part of the bundle of services the modern residential campus provides at relatively low cost.

The amenity expansion argument is a good example of a cost driver that only goes in one direction. It doesn't help explain why real college cost fell in the 1970s. Yet there is

one plausible argument that colleges and universities do over-invest in lifestyle amenities. Most campuses work hard to retain students who can pay the full list price, or close to it. The quality of the university's amenities may need to reflect the tastes and income of its most well-off students. Since colleges do not individually price access to most of these services, the quality of the amenities exceeds the average student's demand. Some small portion of college cost could be reduced if schools did not have to compete for high-income students.

The Bennett Hypothesis

In a 1987 *New York Times* op-ed, titled "Our Greedy Colleges," Secretary of Education William Bennett claimed, "If anything, increases in financial aid in recent years have enabled colleges and universities blithely to raise their tuitions, confident that Federal loan subsidies would cushion the increase." The "Bennett Hypothesis" is often justified as simple textbook supply and demand (Vedder, 2004). Federal aid is a subsidy. Increases in subsidies raise demand, and that pushes up price. Increases in demand can indeed raise price, but links between demand and price in higher education are complex, and measuring the connection has proved anything but conclusive. Mission-driven non-profit institutions have very different incentives than profit-maximizing firms, and the higher education market is not perfectly competitive like the textbook case. Supply and demand in reasonably competitive markets isn't the appropriate model to apply to tuition-setting in higher education, except possibly at for-profit institutions.

The model of perfect competition, which undergirds the simple supply and demand idea, contains a set of assumptions that fail to hold in the higher education market. First, the model assumes the presence of perfectly informed buyers and sellers. However, as noted above, families do not have perfect information about the college application and financing process. This leads to systematic errors in judgment and mismatching. Second, perfect competition requires small, identical profit-maximizing

"firms" that produce homogenous products, but colleges and universities are diverse in many ways. Oberlin College, a small high-touch college with one of the best music conservatories in the nation is quite different from Michigan State University, a strong research university with larger introductory classes and fewer opportunities for daily faculty mentorship.

Finally, the model of perfect competition assumes that firms are "price takers," not price setters. If an Iowa corn farmer doesn't like the world price and asks for a higher price, he will not find buyers. Demand for any particular farmer's corn is perfectly price elastic (i.e., the corn farmer is a price taker). A college is not a price taker. The relevant competitors for any particular school usually only include a small number of true rival institutions with a substantial application overlap. Each school in the group has some ability to set its own price. In addition, any school that can charge a different price for its service to different groups of buyers (i.e., price discriminate) is a price setter, not a price taker. Most importantly, and unlike perfectly competitive firms, many mission-driven colleges and universities care about who purchases the services they offer.¹²

Rather than enabling tuition increases, federal financial aid and institutional grants for students from low-income families are substitutes at most non-profit institutions. More generous federal aid means that colleges and universities will not have to spend as much on institutional grants. Mission-driven non-profits have many productive options in this situation. One possibility is to reduce tuition or hold it steady over time. Alternatively, they could increase spending on programming to improve retention and graduation performance. But it is difficult to find clear incentives for non-profit colleges to increase list-price tuition in response to extra need-based federal student support. An increase in the generosity of federal aid decreases the need for tuition revenue from the student.

The Bennett hypothesis has spawned an extensive empirical literature.¹³ That literature offers no firm conclusions or

¹² The empirical literature often posits simple profit-maximizing behavior by colleges. To our knowledge, not one of the many studies of the Bennett Hypothesis has evaluated or controlled for how changes in the national distribution of income might affect discounting, and hence list price, at mission-driven non-profits.

¹³ See Archibald and Feldman (2017) and Heller (2013) for more thorough reviews of the empirical literature on the Bennett Hypothesis.

consensus about federal aid and list-price tuition. There is good evidence, however, that public universities tend to pass most or all of any increase in federal aid back to students as a lower net price (Turner, 2017). Highly selective private universities tend to tax federal aid by reducing their own need-based aid, but some aid still passes through to students as a lower net price. The best evidence that more generous federal grants and loans cause upward pressure on list-price tuition is found at for-profits (Cellini and Goldin, 2014).

CONCLUSIONS

Three major forces have pushed up college tuition over time: rising costs, decreases in subsidies to institutions, and increasing use of institutional discounts to individual students. Poor incentives in the academy can play a small part. Certain university behaviors can push up spending unnecessarily. They include pitching amenities to the tastes of high-income families, and a zero-sum merit aid competition for students. These are tied to rising income inequality in the United States and are likely small components of the long-run rise in the real cost of attendance for the average American student.

For the most part the rise in the real cost of “producing” a year of college education has been driven by economy-wide forces like cost disease and increases in the wage premium earned by highly-educated labor. Campus decisions to meet a perceived standard of educational care also have exerted upward pressure on cost per full-time student. There is little evidence that wasteful practices specific to higher education explain the long history of real college cost per student or net price to students.

The second force pushing up tuition is seen in decreased subsidies to institutions. List-price tuition has risen more rapidly at public non-profit universities than at private non-profits. There is no reason to think that the factors driving costs differ dramatically between public and private institutions. What differs is the behavior of their subsidies.

Subsidies at private institutions come primarily from gifts and endowments. These subsidies have increased dramatically at the most selective private institutions. The story for public institutions is different since their primary subsidy comes from state appropriations. In real dollars, per student state appropriations have fallen substantially over the past thirty years. This is a primary driver of the difference in tuition growth between public and private colleges.

The third factor involves institutional subsidies to specific students. For a variety of reasons, tuition discounting at public and private non-profits has intensified over the last twenty years. The gap between list-price tuition and average net price tuition to the student has grown substantially. In an era of widening income inequality, increases in tuition discounting can push up list-price tuition. The gap between list price and net price can rise without changing average net tuition, either to institutions or to students. Yet pushing the envelope on discounting does have consequences. Some students do pay the list price. Any upward pressure on list price due to rising discounting will have an impact on families that pay the full list price. This is a politically active group. Second, the list price is the public face of the “college cost crisis.” This gives it an outsized role in the public discussions of college tuition. List price has lost much of its information value in the market, and this can lead families to make very poor decisions about their higher education options.

Policy Considerations

The problems of student access to higher education, and success once enrolled, are driven less by “soaring” costs of producing education and more by changes in the national distribution of income and the behavior of the states. This is reinforced by longstanding attendance patterns that leave poorer and first-generation students overrepresented at under-resourced colleges. Useful policy remedies would put more resources into the hands of middle- and lower-income families and more resources into student support

and educational expenditures at schools that enroll large numbers of these students. Specific policy options follow:¹⁴

- Federal/state partnership programs offer one way to diminish or reverse state disinvestment in higher education. They are designed to give states stronger incentives to increase direct appropriations to public universities. One approach is to give states predictable block grants based on their level of spending per full-time equivalent student. This would reward states that have a demonstrated commitment to higher education while offering a monetary incentive to those that currently spend less.
- The Pell grant program could be reformed in many productive ways. The maximum grant could be tied to a service price index so that annual increases in support would be depoliticized. As of 2018, students are eligible for summer Pell grant awards of up to 50% of their scheduled annual award amount. This new year-round Pell should be preserved in order to assist lower-income students in completing a degree in a timely fashion. And non-profit institutions that receive a substantial amount of Pell dollars could be rewarded for working with low-income students. Federal money could be added directly to the institution's operating

budget equal to some percentage (perhaps 10%) of the Pell dollars their students receive if they surpass a reasonable percentage threshold of Pell recipients served.

- Increased tuition discounting has made list-price tuition a very weak market signal for most families. As a result, many young people do not make the preparations in middle school and high school that are necessary to succeed in college. And many high school seniors do not match with colleges that best fit their needs because they overestimate the cost of attendance. This increases the social value of reforms to improve information flows about the true cost of attendance. Likewise, the financial needs analysis system is overly complex. Many reform proposals to simplify it would offer productive change.

¹⁴ See Archibald and Feldman (2017, chapter 11) for a fuller treatment of potential policy options.

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