Policy Analysis
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How Much Ivory Does This Tower Need?
What We Spend on, and Get from, Higher Education

by Neal McCluskey

Executive Summary

It is commonly asserted, especially by people within higher education, that the American Ivory Tower is strapped for cash and tightfisted taxpayers are to blame. Taxpayer support for postsecondary education has long been in decline, this narrative goes, and has forced schools to continually raise tuition to make up for the losses.

Tallying taxpayer-backed expenditures on higher education over the last quarter-century, and separately tallying 15 years of taxpayer burdens after accounting for student loans being paid back, reveals that this narrative is inaccurate. No matter how you slice it, the burden of funding the Ivory Tower has grown ever heavier on the backs of taxpaying citizens. Whether one examines taxpayer dollars in total, per enrollee, per degree, or per tax-paying citizen, real spending has gone up.

Unfortunately, financial costs are only part of the story. While the evidence is not conclusive, it appears that the additional spending and the additional students and degrees it has helped to fund do not ultimately constitute a net societal gain. Instead, all the coerced, third-party support has likely produced several damaging, unintended consequences: credential inflation, sky-high noncompletion rates, and rampant tuition inflation. In other words, the money taken from taxpayers, in total and on an individual basis, to "invest" in higher education has been on the rise, and it appears to be hurting both taxpayers individually and society as a whole. We have taken money from people who would have used it more efficiently than has the system to which it was given.

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Introduction

If you follow higher education—or just live near a college or university—you've probably heard the complaint: government keeps axing higher education funding. Often the evidence offered to substantiate the claim is a proposed funding cut for the upcoming fiscal year, or reductions over a few years, or state appropriations to schools decreasing as a percentage of overall school revenues. Rarely is the change in the burden borne by taxpaying citizens in total, as well as individual taxpayers—the most direct and important measures of taxpayer support—furnished.

So has government been getting increasingly tightfisted with colleges? That is what this analysis endeavors to determine. And while it lays out changes in funding per student and per degree awarded, most importantly it examines funding overall from taxpayers and the burden borne by the *average* taxpayer. These latter two measures are critical because taxpayers are real people bearing real costs—they are half of the higher education funding equation—but they are typically ignored in anecdote-driven media stories that focus on financially struggling students.

This is hardly just a human interest concern. It is quite possible that taking money from taxpayers—who know their individual needs and desires better than government—will produce a worse aggregate outcome than allowing taxpayers to keep their money. Forced third-party funding could be encouraging aid recipients to consume education they may not need or be able to handle, it might be enabling schools to spend wastefully because they receive funding involuntarily, and it could be taking money from people who would have used it more efficiently had they been able to keep it.

To determine if these negative outcomes might, in fact, be occurring, the final goal of this report is to gauge—as best can be done with limited performance measures—whether taxpayer funding has contributed to net positive or net negative outcomes.

How Spending Is Calculated

"Over several decades there has been a material and progressive disinvestment by states in higher education."[1] That statement, in a 2009 op-ed by University of California, Berkeley, chancellor Robert J. Birgeneau and vice chancellor Frank D. Yeary, is something most people have likely heard in some form in the last few years. But is it true? Have states been in a long process of disinvesting from colleges and universities? How is that determined? These are critical questions, but they are all too often left unasked in the public discourse on the state of the nation's Ivory Tower.

To measure taxpayer investment, analysts will often use state and local government funding as a share of overall school revenues, then argue that state and local funding has been decreasing.[2] Other times they will look at changes in appropriations at the peak and trough of a business cycle, when state funds naturally fluctuate, rather than providing long-term trends that include multiple waves.[3]

Knowing how investment is being measured can make the difference between thinking that taxpayers are increasingly cheap or increasingly generous. By looking at total state and local taxpayer spending on higher education—not breaking it down per pupil—the State Higher Education Executive Officers (SHEEO) reached a conclusion completely contrary to that of Birgeneau and Yeary. "Some observers have suggested that states are abandoning their historical commitment to public higher education," SHEEO wrote. "National data and more careful attention to variable state conditions strongly suggest that such a broad observation is not justified by the available data."[4]

To answer the question of how much taxpayer support colleges and universities

receive and how it has changed over the last several years, this report provides information on taxpayer support through myriad streams: state and local funding directly to schools; state support to students in the form of financial aid; federal direct support to schools; federal financial aid; state and federal funding of university-based research; and combinations thereof. Most important, the report shows changes in spending not just from the perspectives of greatest interest to schools— i.e., funding per student and per degree—but from the perspective important to taxpayers and society as a whole: the overall taxpayer-funded burden and the total burden falling on the average taxpayer.

Accounting Problems

As you read this, keep in mind that the numbers are estimates. Though one might think accounting for what taxpayers spend on higher education would be straightforward, it is not. The following are major obstacles that stand in the way of pinpointing expenditures.

Data Sources

There is no one, consistent, comprehensive source of data on taxpayer expenditures for higher education. That is largely a good thing, reflecting that there is no one, especially governmental, entity controlling all schools. Overall, that decentralization is key to the greater success of American higher education than its elementary and secondary system; it fosters competition, innovation, and specialization. It does, though, complicate data collection.

As recently as 1996 the federal government collected comparable data for all "degree-granting" institutions—public and private—that included federal, state, and local government revenues. However, in 1997 public and private colleges went onto different accounting standards, making it problematic, at best, to combine their numbers.[5] As a result, no compilation similar to what the federal government published until 1996 appears to be available now.

The main sources for this study are federal *Digest of Education Statistics, 2010*; the College Board's *Trends in Student Aid, 2010*; SHEEO's *State Higher Education Finance: FY 2010*; and the National Science Foundation's *Academic Research and Development Expenditures: Fiscal Year 2009*.[6] The *Digest* is primarily the source for longitudinal data on federal postsecondary expenditures; the *Trends* report for longitudinal state and federal student aid totals; SHEEO for total state and local expenditures on public colleges and universities; and the National Science Foundation for state and local research expenditures.

In addition to the problem of having no single, consistent data source, there are a few smaller problems that have likely led to some inaccuracies in the data analysis. First, the figures presented for 2010 are, in fact, a mix of 2009 and 2010 data. Numbers from 2009 were used in some cases where 2010 data were not available, with the expectation that they would likely be closer to actual 2010 numbers than would a projection based on, for instance, average changes in funding over some number of previous years. In addition, numbers from the *Digest*, SHEEO, and the College Board were adjusted for inflation using different "market baskets." The College Board uses the Consumer Price Index for all urban consumers (CPI-U) for its inflation adjustments, while the *Digest* employs the "federal funds composite deflator," a measure based on changing costs of goods and services consumed by the federal government.[7] Finally, SHEEO uses the Higher Education Cost Adjustment index, which is based 75 percent on changing compensation costs for white-collar workers and 25 percent on general inflation in the U.S. economy.[8]

Accounting for Loans and "Tax Expenditures"

The federal government provides data for "on-budget" expenditures—generally, funds tied to appropriations—for postsecondary

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education, but for federal loan programs the on-budget expenditures before 1992 are not comparable to those after. Until 1992 the federal government accounted for loan expenditures on a cash basis, meaning that for federal guaranteed loans—in which Washington backed loans originated by private lending companies—the federal subsidies net of borrower fees for that year were the on-budget costs. For direct loans—in which the federal government lends directly from the treasury—the full loan volume net of fees was reported. That changed effective 1992 as a result of the Federal Credit Reform Act of 1990, which switched accounting to a net present value basis. Basically, the net costs to the government over the life of a loan originated in a given year, adjusted for the changing value of money over time, is the on-budget cost for that year.

It is important to note that net present value–based accounting is essentially an educated guess at what taxpayers will ultimately pay for loans, a guess that cannot easily anticipate such factors as changing default risks or future increases in federal loan forgiveness programs. In addition, there are significant fluctuations in reported on-budget loan costs from year to year, which according to the U.S. Department of Education largely reflect changes in loan volumes and interest rates.[9]

To cope with these problems, the first set of calculations—called "taxpayer-based funding"—includes the total volume of loans. That number will most likely be much higher than the ultimate cost to taxpayers as loans are repaid, but it covers basically everything for which taxpayers are liable and allows consistent comparisons back to 1985. In the second set of calculations—called "taxpayer cost"—only the estimated ultimate cost to taxpayers is factored in. Those calculations look only at numbers between 1995 and 2010, which in addition to ensuring that the on-budget data are consistent, ensures that both the guaranteed lending program—which stopped originating loans in 2011 as part of the 2010 health care reform bill—and the direct lending program, which started in 1994, are included in the period examined.

The bottom line on loans is that calculations that include total loan volume provide reliable and consistent annual totals, but much of that money will eventually be returned to the government. How much will be returned, however, is something we'll only be certain of in the future, which renders present-value subsidy costs only rough estimates.

In addition to trying to properly account for federal loans, one has to decide how to deal with federal "tax expenditures": tax deductions and credits that the federal government uses to incentivize people to purchase higher education. The first problem with dealing with this category of aid is wildly inconsistent accounting. The College Board doesn't even begin to account for such incentives until the 1998–99 school year, while the *Digest* stops accounting for them in 2002. The second problem is that there is a great deal of dispute over whether such expenditures should be considered government aid or simply allowing taxpayers to keep what is theirs (albeit for specific, government-favored purposes). Given the first problem, and feeling that money taxpayers are allowed to keep should not be considered taxpayer-funded aid, tax expenditures are not included in this report's calculations. However, they should be kept in mind, and in light of them it should be understood that estimates using just government expenditures and loans underestimates, perhaps significantly, government influence on college enrollment and prices.

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What's Student Aid? What's Not?

Some federal programs have student aid components wrapped up with other higher education spending. For instance, outlays for the Senior Reserve Officer Training Corps, as reported in the *Digest*, include both scholarship costs and the costs of paying staff, running training exercises, and so on. Where the titles of programs in the *Digest* indicate that the programs might contain

both aid and direct spending components, those programs were researched in more depth and, where possible, the student aid components separated so they wouldn't be double counted when student aid and other higher education outlays were combined. Thankfully, this was only necessary for a few programs, and few had price tags even close to the size of Department of Education–run loan and grant programs.

One of the biggest debates in higher education is whether funding for research should be counted as aid to schools or government payment for a service. Many in higher education argue research is vital for keeping professors up-to-date in their fields, enabling them to be the best teachers of their subjects, while others assert that research largely aggrandizes researchers and has at best limited positive spillovers into instruction. To deal with the ambiguous educational effects of research, this report provides breakdowns including and excluding research funding.

The Findings

The natural place to begin to determine how much money taxpayers supply to higher education is to ascertain the total taxpayer-based funding that goes to schools and students. For this report's purposes, "total taxpayer-based funding" is every dollar generated by taxpayer-funded programs, including total student loan volume and research. This is the most inclusive compilation possible (save one that includes "tax expenditures") and will maximize the appearance of taxpayer generosity.

Figure 1 shows the inflation-adjusted growth in total taxpayer funding of higher education, which rose from roughly $108 billion (measured in 2010 dollars) in 1985 to $264 billion in 2010, a 144 percent increase.

What are the constituent parts of the total, and how did they change over time? The trend lines for all components are laid out in Figure 2. They are as follows:

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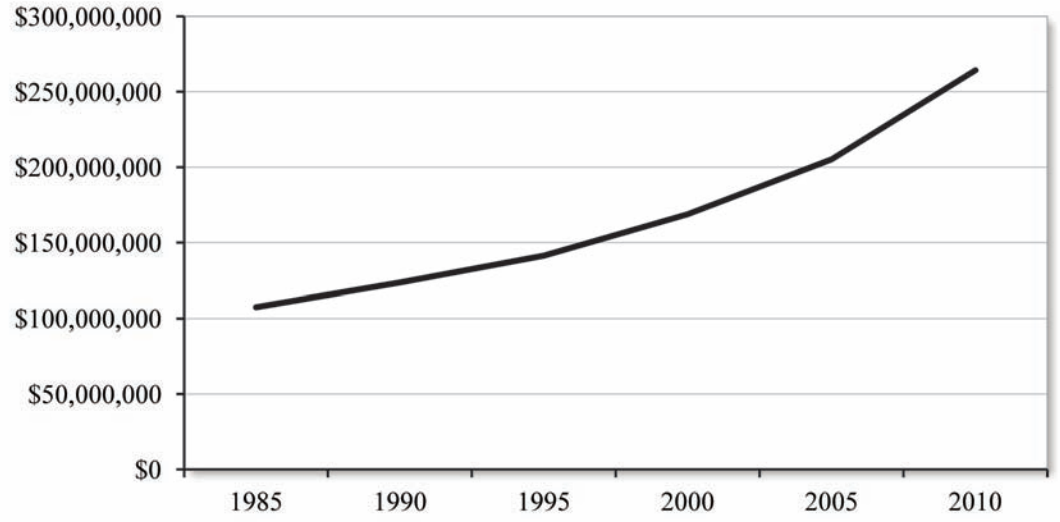
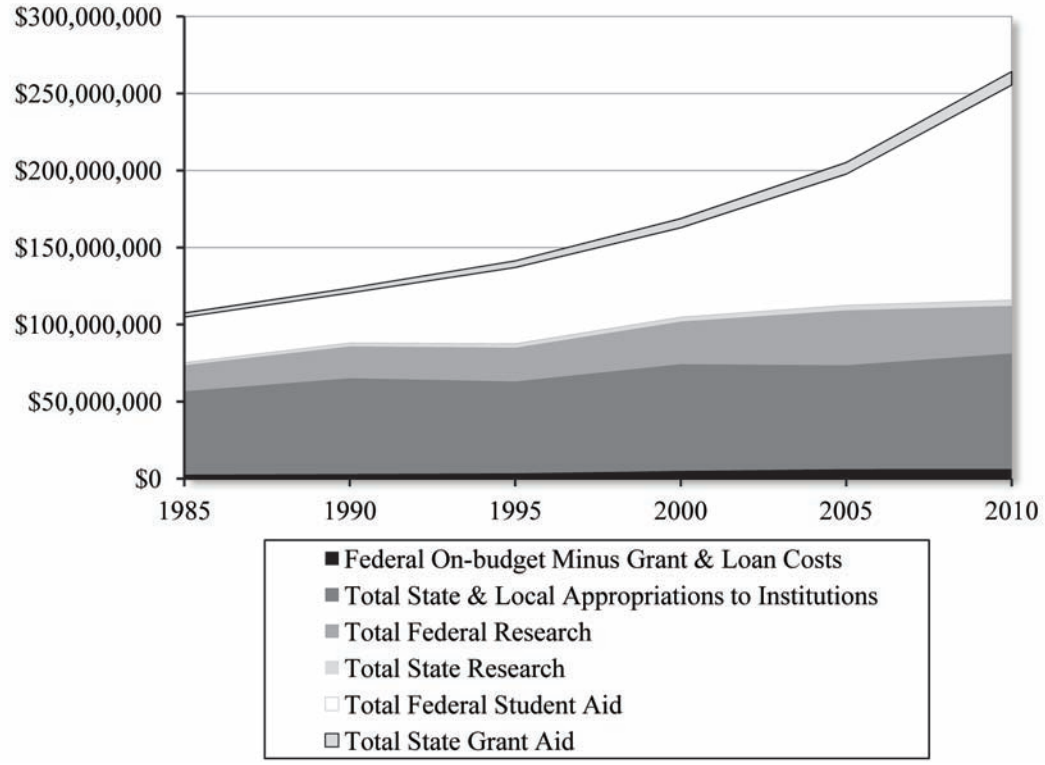
Figure 1
Total Taxpayer-Based Funding (in thousands of 2010 dollars)



Sources: U.S. Department of Education, *Digest of Education Statistics, 2010*, Table 380, nces.ed.gov/programs/digest/d10/Figures/dt10_380.asp?referrer=list, and Table 382, nces.ed.gov/programs/digest/d10/Figures/dt10_382.asp?referrer=list, April 2011; The College Board, "Trends in Student Aid 2010," trends.collegeboard.org/student_aid; State Higher Education Executive Officers, State Higher Education Finance, www.sheeo.org/finance/shef-home.htm; and National Science Foundation, "Academic Research and Development Expenditures: Fiscal Year 2009," Table 1, http://www.nsf.gov/statistics/nsf11313/.

Figure 2
Total Taxpayer-Based Funding by Source (in thousands of 2010 dollars)



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- federal on-budget expenditures, minus grant and loan costs,
- state and local appropriations to schools,
- federal funding for research conducted at educational institutions,
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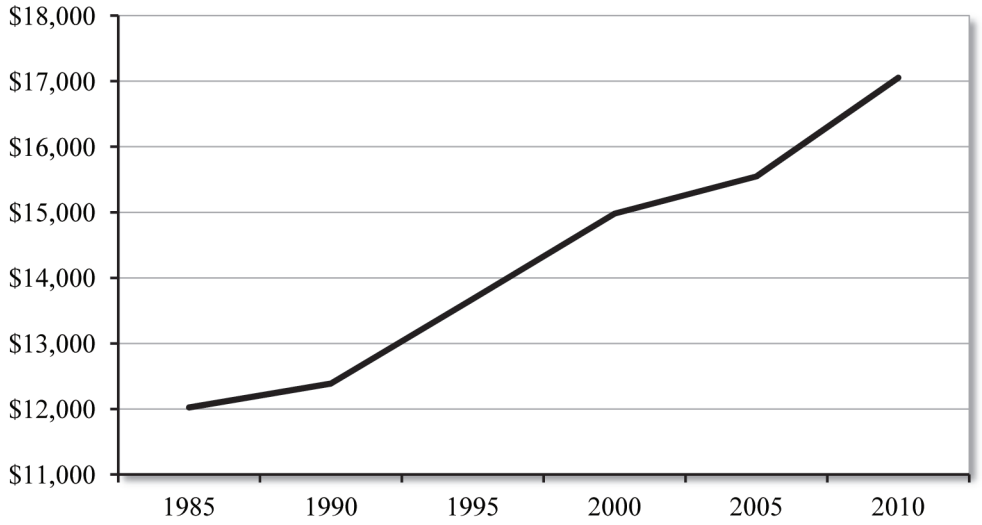
- total federal student aid, and
- total state grant aid to students.

Over the last 25 years, all of these components have increased, but clearly the largest growth has been in federal student aid.

Over the last 25 years, all of these components have increased, but clearly the largest growth has been in federal student aid. It ballooned from $29.6 billion in 1985 to $139.7 billion in 2010, a 372 percent leap. No other segment came close to that growth rate, with the next-biggest contributor—state and local appropriations to schools—rising 38 percent, going from $54.1 billion to $74.9 billion. Notable also is the relatively tiny contribution of the federal government through on-budget funds. That consists mainly of relatively small pools of money going directly to schools, including several programs specifically for minority-serving institutions, as well as expenditures to maintain service academies such as the United States Naval and Military Academies. Numerous departments also run a variety of small programs that contribute to that total. On-budget federal funds rose 135 percent, but from just $2.7 billion to $6.4 billion.

Clearly, total taxpayer-based funding for

Figure 3
Total Taxpayer-Based Funding per Full-Time Equivalent Student (in 2010 dollars)



Sources: U.S. Department of Education, *Digest of Education Statistics, 2010*, Table 380, nces.ed.gov/programs/digest/d10/Figures/dt10_380.asp?referrer=list, and Table 382, nces.ed.gov/programs/digest/d10/Figures/dt10_382.asp?referrer=list, April 2011; The College Board, "Trends in Student Aid 2010," trends.collegeboard.org/student_aid; State Higher Education Executive Officers, State Higher Education Finance, www.sheeo.org/finance/shef-home.htm; and National Science Foundation, "Academic Research and Development Expenditures: Fiscal Year 2009," Table 1, http://www.nsf.gov/statistics/nsf11313/. Enrollment data from U.S. Department of Education, *Digest of Education Statistics, 2010*, Table 226, nces.ed.gov/programs/digest/d10/Figures/dt10_226.asp?referrer=list.

higher education has not dropped in the last 25 years. But that is just one way to measure public funding of higher education. It leaves open the question of whether funding has increased because more people attended college, more degrees were being conferred, or simply because there were more people contributing to the local, state, and federal coffers. To supply this context, what follows is total taxpayer-based funding broken down by students served, degrees attained, and individual taxpayers.

Figure 3 shows the change in total taxpayer-funded expenditures divided by the number of full-time equivalent (FTE) students each year.

On a per pupil basis, taxpayer-based funding has risen, though not nearly as fast as the overall pool of money, climbing only 42 percent (versus 144 percent). This is the result of major increases in college enrollment, which went from 8.9 million FTE students in 1985 to 15.5 million in 2010.

What is the cost per degree awarded? A simple way to calculate this is to divide total spending in a given year by the number of degrees awarded that year. This is not a perfect measure; a degree, of course, typically takes more than one year to complete, so the outlays for a given year did not, obviously, fully fund the degrees awarded that year. However, the results of this analysis, in Figure 4, are insightful.

The story remains the same: There were substantial increases, in this case a rise of 33 percent as taxpayer-funded outlays per degree rose from $58,755 in 1985 to $78,347 in 2010. But it was smaller by far than the increase in total taxpayer-based funding, and somewhat smaller than taxpayer-based funding per student

Finally, what's been the change in taxpayer-based funding per individual taxpayer? In other words, what's been the changing impact on the people supplying the funds? Unfortunately, it is not possible to calculate

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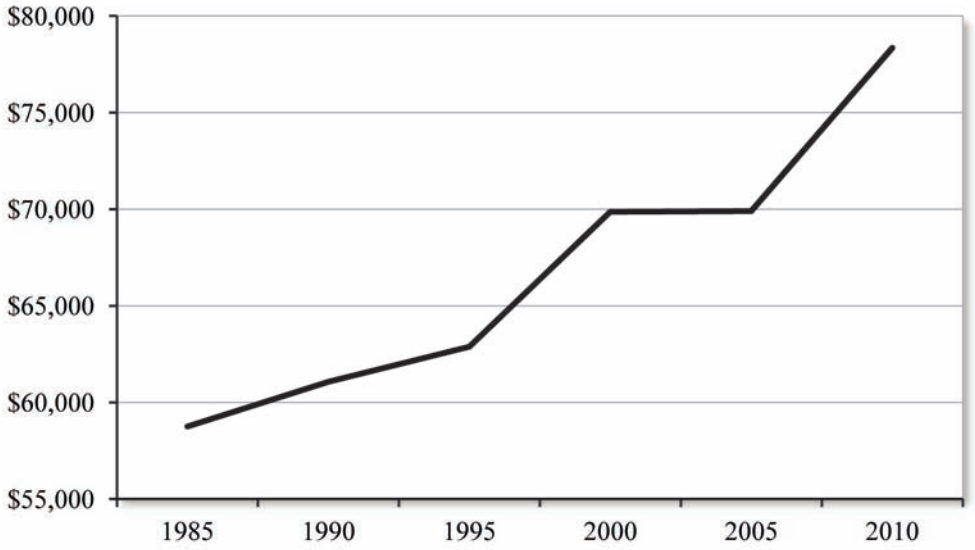
Figure 4
Total Taxpayer-Based Funding Per Degree (in 2010 dollars)



Sources: U.S. Department of Education, *Digest of Education Statistics, 2010*, Table 380, nces.ed.gov/programs/digest/d10/Figures/dt10_380.asp?referrer=list, and Table 382, nces.ed.gov/programs/digest/d10/Figures/dt10_382.asp?referrer=list, April 2011; The College Board, "Trends in Student Aid 2010," trends.collegeboard.org/student_aid; State Higher Education Executive Officers, State Higher Education Finance, www.sheeo.org/finance/shef-home.htm; and National Science Foundation, "Academic Research and Development Expenditures: Fiscal Year 2009," Table 1, http://www.nsf.gov/statistics/nsf11313/. Degree data from U.S. Department of Education, *Digest of Education Statistics, 2010*, Table 279, nces.ed.gov/programs/digest/d10/Figures/dt10_279.asp?referrer=list.

this simply by dividing total expenditures by total taxpayers, because when state and federal funds are included it is necessary to account for not just income taxes, but sales taxes, property taxes, and other revenue sources. As a result, the following estimate divides total expenditures by the number of Americans age 15 or older, roughly the age at which many people begin to work and buy things.

Once again, as Figure 5 illustrates, expenditures have gone up considerably over the past 25 years, rising from $577 to $1,068. This cements the conclusion: When examining what they are ultimately required to pay, taxpayers have not sloughed off the burden of financing higher education, and that burden has grown substantially for every individual who pays taxes.

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Total Taxpayer Cost

As mentioned, the numbers discussed so far include both research expenditures and total student loan volume—the most liberal estimate of taxpayer burden. The figures that follow, in contrast, offer a more conservative estimate, excluding research expenditures and including only federal on-budget costs. This is labeled "taxpayer costs" to indicate that it is the cost for higher education actually borne by taxpayers, with the understanding that it includes estimates of the likely final cost of student loans. And recall that these data only go back to the mid-90s because data after 1992 are not consistent with data before.

Figure 6 shows the increase in total costs. Again it is steep, as were total taxpayer-based expenditures. Here the increase is from $88.5 billion to $131.6 billion, a nearly 50 percent jump in just 15 years.

How about costs on a per pupil basis? Figure 7 furnishes that information. Note that a trend line with the formula for its slope accompanies the line chart. Whereas previous charts featured fairly steady chang-

Figure 5
Total Taxpayer-Based Funding per Taxpayer (in 2010 dollars)

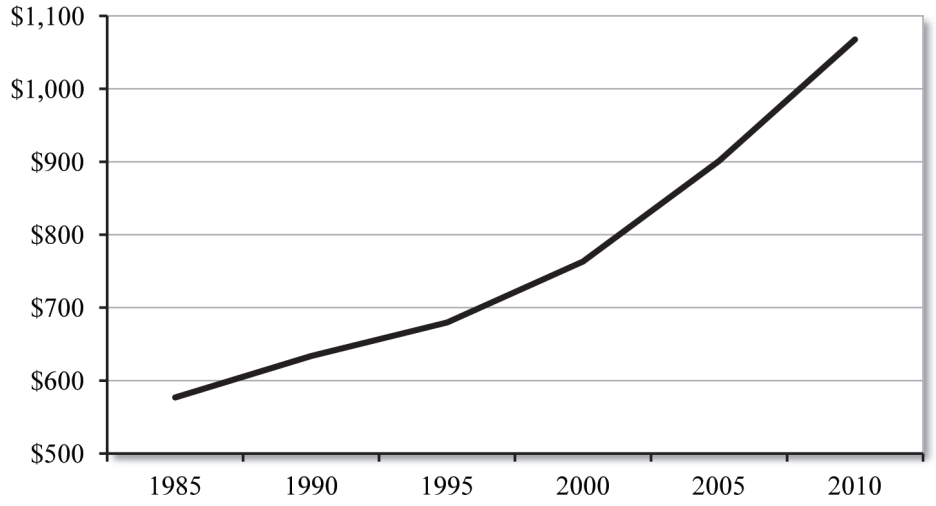

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Figure 6
Total Taxpayer Cost (in thousands of 2010 dollars)

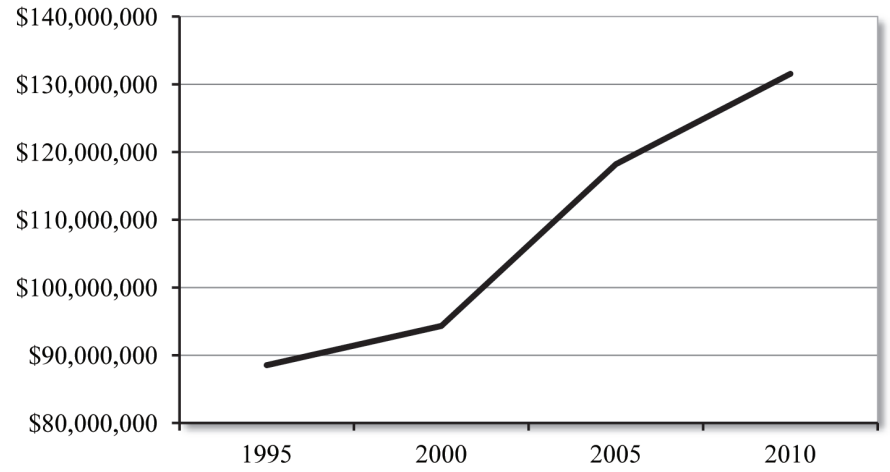

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Figure 7
Taxpayer Cost per Full-Time Equivalent Student (in 2010 dollars)

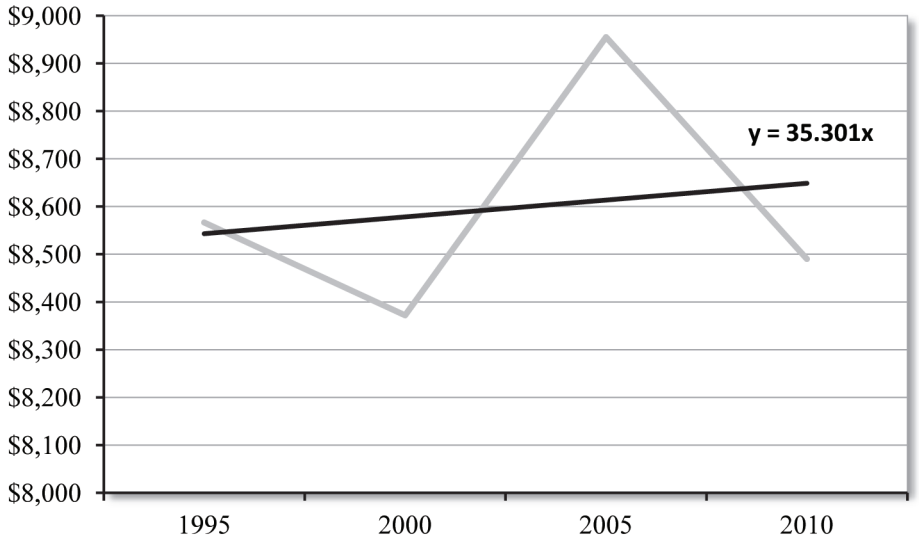

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Figure 8
Taxpayer Cost per Degree (in 2010 dollars)

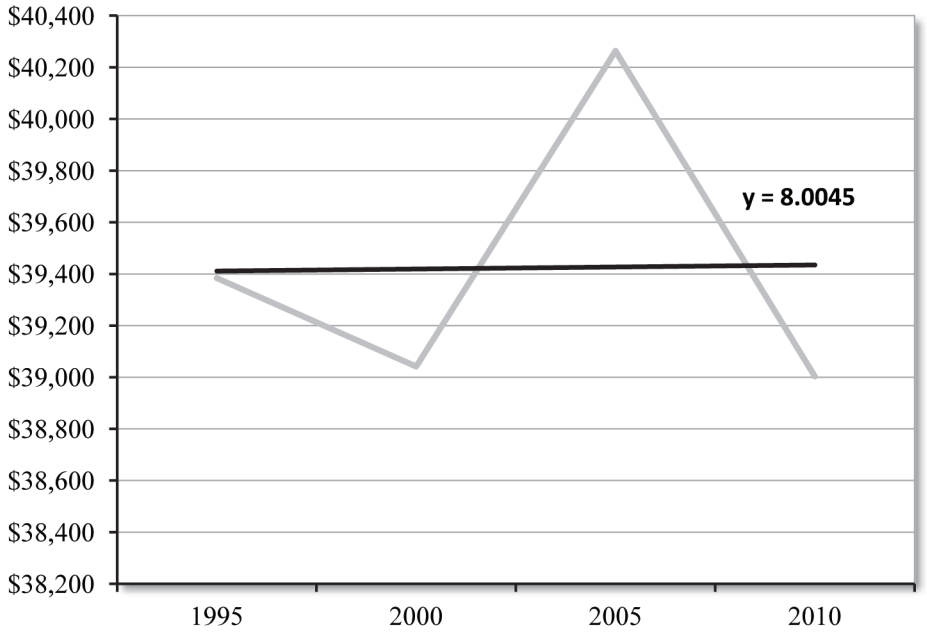

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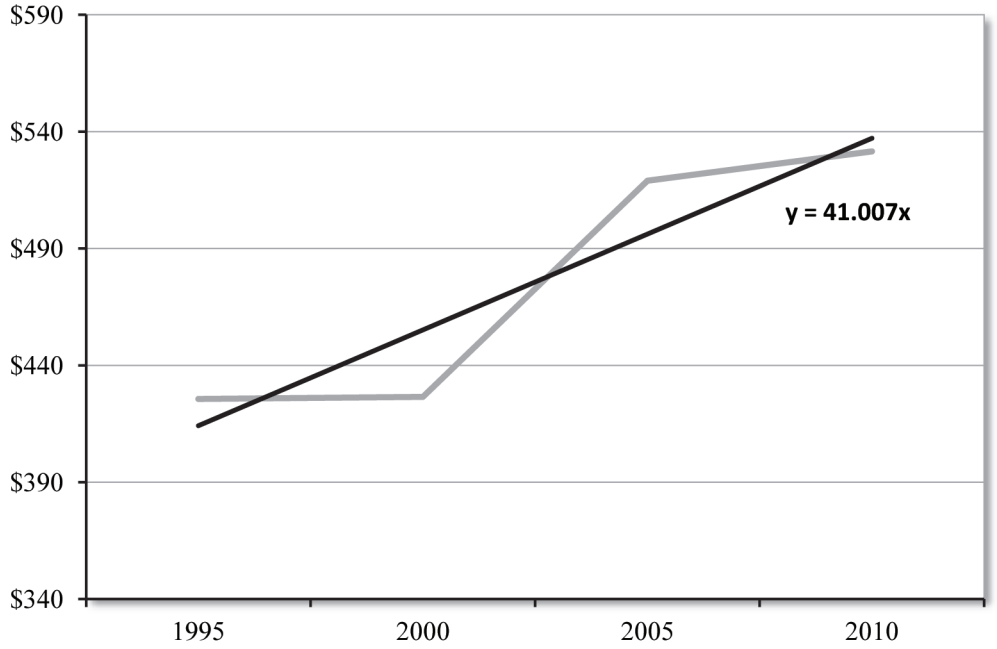
Figure 9
Taxpayer Cost per Taxpayer (in 2010 dollars)



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es, allowing the general trend to be easily discerned, this and subsequent figures rise and fall over the 15-year period, rendering the overall trend harder to determine. The trend line is intended to give a better sense for the overall pace and direction of change.

Once again, there is an increasing trend, though a very modest one, of $35 per five-year increment, and 2010 ends below 1995. Note the spikes, which make the trend hard to see. They are likely a result of a well-known phenomenon in higher education: when economic times are bad many more people enroll in school. Meanwhile, state and local governments have less money to spend, decreasing funding going to schools on a per-pupil basis. When economic conditions improve, the situation reverses.

What is the cost per degree? For all intents and purposes the overall trend is one of no change; a mere $8 increase per five-year increment from a starting point of almost $39,400. And as Figure 8 shows, there were once again up and down spikes, and the end-year cost was slightly lower than the first-year cost.

Lastly, Figure 9 furnishes the cost to a given taxpayer. Here again, we see increasing expenditures, making clear that even absent research funding and total loan volume, the burden on the individual taxpayer for higher education has gone up. And the inflation-adjusted increase has been significant, rising from $426 in 1995 to $532 in 2010, a 25-percent expansion. That's $532 the taxpayer can't spend on food, housing,

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The difference between earnings for people with a bachelor's degree and those with only a high school education are large not because one attains valuable skills pursuing a degree, but because degrees are so commonplace.

investing, or other uses—all of which might be more important than funding higher education—and it refutes any notion that there has been declining taxpayer support for higher education.

The Benefits . . . or Lack Thereof

What has the nation gotten for its "investment" in higher education? This is not as easy a question to answer as it seems it should be at first blush. Clearly we have seen greatly increasing numbers of people enrolled in college, and degrees awarded, but this is insufficient evidence to demonstrate whether the attendant spending was truly beneficial. For that, it is necessary to know if the quickly rising enrollment and degree-attainment numbers translated into a much greater pool of skills and abilities, and if that outweighed the opportunity costs of taking money from taxpayers. In other words, it is important to know if human capital has expanded and, if so, if that produced greater public benefit than would have resulted if taxpayers had kept their dollars.

Making such an assessment more difficult is that, unlike in elementary and secondary education, in postsecondary schooling we do not have a single, representative, consistent assessment of learning such as the long-term National Assessment of Educational Progress (NAEP). This is not necessarily a bad thing on net—NAEP is at best an incomplete yardstick to measure what children are learning—but absent something like NAEP, various fragmented, incomplete measures must be cobbled together to assess learning gains, and then cautiously interpreted to get a sense of what's been achieved with taxpayer spending.

Increased Enrollment and Degrees

Without question, enrollment and the number of degrees awarded increased significantly over the last 25 years, with FTE enrollment rising 73 percent and degrees awarded rising 84 percent. It is certainly reasonable to conclude that at least part of those increases was spurred by expanding taxpayer support, though it is impossible to know what the changes would have been in the absence of such spending. Indeed, we might very well have seen growing numbers regardless of spending, and college enrollment was expanding significantly prior to the advent of large federal aid programs. Between 1969—the closest year to the 1965 Higher Education Act available in the 2010 *Digest of Education Statistics*—and 2008, enrollment rose 139 percent, but between 1929 and 1969 it increased by 627 percent.[10]

How about human capital? Again, the intuitive answer is that of course it expanded as attainment grew. And labor markets would seem to agree. As economists Anthony Carnevale and Stephen Rose point out, the current wage premium for bachelor's degree holders is 74 percent, meaning employers are willing to pay someone with a four-year degree 74 percent more than someone without one; degrees, on average, appear to have a sizable payoff.[11] In addition, citing data from economists Claudia Goldin and Lawrence Katz, Carnevale and Rose note that the bachelor's degree premium rose markedly between 1980 and 2005, from 48 percent to 81 percent.[12] That would seem to indicate that college education is becoming more valuable in the labor market.

There are numerous problems, however, with simply concluding that because enrollment, degree attainment, and the college wage premium all rose along with spending, spending increases were good investments. The first is that in looking at averages one can miss a lot of data, and many people with college degrees might not get much economic value from them. The second is that we might be fueling credential inflation, in which the difference between earnings for people with a bachelor's degree and those with only a high school education are large not because one attains valuable skills pursuing a degree, but because degrees are so commonplace—and perhaps signal some basic threshold level of intelligence and work habits—that employers reflexively screen out job seekers without degrees. Finally, there

are very large percentages of people who enroll in college, perhaps lured by the promise of government aid to pay for it, who do not end up getting degrees. Their payoff is often small or negative.

There's a Lot That Is Not Average

One powerful sign that a significant proportion of degree holders are not benefiting from their degrees—or, at least, that taxpayer funding of their degrees is wasteful—is that about 33 percent of bachelor's degree holders are in jobs that do not require a degree.[13] This rate has been rising, from about 11 percent of graduates underemployed in 1967.[14]

Carnevale and Rose assert that this underemployment is not necessarily a sign that college education is economically wasted. They note that in nondegree occupations people with degrees tend to make significantly more than those without. What they discount is the strong possibility that having a degree doesn't *cause* someone to be, say, a better dishwasher,[15] but that someone who possesses the punctuality, discipline, and so forth, that make him a superior employee would also make him more likely to complete college. In that case, the correlation between holding a degree and higher pay does not mean that having the degree—or skills one might have attained in pursuit of it—causes the higher earnings.

On the flip side of this is that many people without college degrees outearn those with them. Famous examples are such billionaire college dropouts as Microsoft founder Bill Gates and Virgin Group founder Sir Richard Branson. Looking more systematically—and despite their strong support for college as a key to economic growth—Carnevale, Rose, and Cheah report that 14 percent of workers with no more than a high school diploma earn at least as much as the median bachelor's holder, and 1.3 percent of people with less than a high school education earn at least as much as the median possessor of a professional degree, such as a doctor or lawyer.[16] And critically, one's field makes a big difference in potential earnings. Degrees in several types of engineering tend to lead to very high earnings, while degrees in the arts or social work tend to lead to very low earnings.[17]

Credential Inflation

How about the credential inflation possibility? There is good reason to believe that credential inflation is happening; that a bachelor's degree is increasingly easy to get, pushing a need to obtain yet higher credentials—even without gaining additional skills—to obtain employment that previously required no such degree. University of Pennsylvania sociologist Randall Collins argues that that this is exactly what's been occurring for decades:

> In the 1960s and '70s, as competition for managerial positions grew among those who held bachelor's degrees, M.B.A.'s became increasingly popular and eventually the new standard for access to corporate jobs. Holders of such degrees have attempted to justify the credential by introducing new techniques of management—often faddish, yet distinct enough to give a technical veneer to their activities. Similarly, credentialed workers in other occupations have redefined their positions and eliminated noncredentialed jobs around them. Thus, the spiral of competition for education and the rising credential requirements for jobs have tended to be irreversible.[18]

Economist Richard Vedder has begun to put numbers on the credential inflation problem. He notes, for instance, that in 1970 the unemployment rate for holders of four-year degrees was about a quarter of that of the general population. By 2010 the unemployment rate for four-year degree holders was about half of the general population's—a sizable increase in relative unemployment for people with college degrees. He also notes that in the major economic downturn

The correlation between holding a degree and higher pay does not mean that having the degree causes the higher earnings.

of 1982–83, overall unemployment was a bit higher than it was 2010—the midst of the current malaise—but unemployment for people with at least a bachelor's degree was appreciably *lower* than it was in 2010.[19]

Further evidence supporting the credential inflation theory is that over the last decade weekly wages have fallen for all groups except those with *advanced* degrees. Bureau of Labor Statistics data show that inflation-adjusted wages fell 6 percent from 2001 to 2010 for both workers without a high school diploma and workers with some college education who did not achieve a four-year degree.[20] Workers with only a high school diploma saw roughly a 5 percent drop, and those with only a bachelor's degree lost about 4 percent. Only advanced degree holders saw an increase—about 2 percent.

In addition to this, among bachelor's and higher degrees awarded, the percentage that were master's, first-professional, or doctoral degrees rose between the 1969–70 and 2008–09 academic years. In 1969–70, 26 percent of bachelor's-and-above degrees were advanced; in 1979–80, it was 30 percent; in 1999–00, 32 percent; and in 2008–09, 34 percent.[21] This trend, along with increasing real wages only for advanced-degree holders over the last decade, suggests that advanced degrees are significantly fueling college wage premiums, especially when the premiums are reported using bachelor's *or higher* as a single category.[22]

Of course it is possible that we aren't seeing credential inflation, but that greater skills and knowledge are truly needed as the economy evolves, and advanced degrees actually require that one learn these things. This is the standard argument for why higher degrees are in increasing demand: they indicate higher levels of needed skill.

Further evidence supporting the credential inflation theory is that over the last decade weekly wages have fallen for all groups except those with *advanced* degrees.

The evidence on these rationales, however, is mixed at best. First, it is difficult to establish that higher-level skills are increasingly required to get necessary work done, and that these skills could only be obtained in college degree programs (as opposed to on-the-job training or specific skills-development programs). We also lack a set measure of higher education learning outcomes in order to test whether more degrees do, in fact, mean greater learning. The balance of the evidence we do have, however, tilts more toward the credential-inflation hypothesis than greater-human-capital hypothesis.

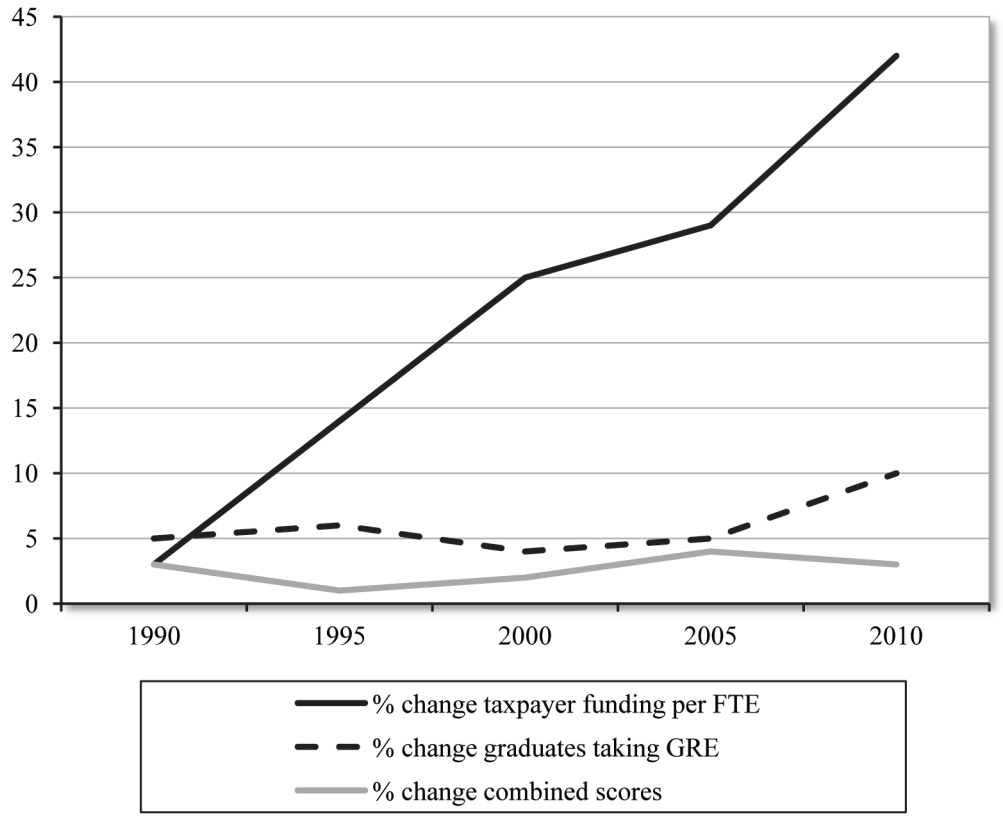
One test for which we have many years of data to help gauge learning is the Graduate Record Exam (GRE), which individuals with an undergraduate degree (or working on one) typically take if they plan to pursue nonprofessional graduate studies. Already, we can see the limit of the test: it is only taken by students hoping to pursue graduate-level studies, and not by students who are content with a bachelor's degree or who seek professional degrees. That means it is almost certainly not representative of the knowledge of the "average" college graduate. With that in mind, what do the GRE scores show us?

Figure 10 plots percentage changes in combined verbal and quantitative GRE scores against percentage changes in total taxpayer-funded aid per FTE. It also plots the change in the percentage of bachelor's degree holders taking the GRE since 1985.

What the chart shows is that both the percentage of students taking the GRE and average scores had slight upward trends since 1985. Spending per FTE, however, also trended upward, and at a far faster pace. The fact that rising scores have accompanied increasing participation rates suggests that degree holders might be learning more, bolstering the argument that more degrees has meant rising human capital. But that's during a time of large spending increases. And remember the big caveat: GRE test takers are almost certainly not representative of all undergraduate students. It is also difficult to know how the test might have changed—overtly or subtly—over time.

Similarly suggestive, but revealing in the other direction, are findings in *Academically Adrift: Limited Learning on College Campuses*, by Richard Arum and Josipa Roksa.[23] According to their research, which looked at

Figure 10
Changes in GRE Scores, Percentage Taking GRE, and Taxpayer Funding per FTE



Sources: U.S. Department of Education, *Digest of Education Statistics, 2010,* Table 344, nces.ed.gov/programs/digest/d10/tables/dt10_344.asp?referrer=list. : U.S. Department of Education, *Digest of Education Statistics, 2010,* Table 380, nces.ed.gov/programs/digest/d10/Figures/dt10_380.asp?referrer=list, and Table 382, nces.ed.gov/programs/digest/d10/Figures/dt10_382.asp?referrer=list, April 2011; The College Board, "Trends in Student Aid 2010," trends.collegeboard.org/student_aid; State Higher Education Executive Officers, State Higher Education Finance, www.sheeo.org/finance/shef-home.htm; and National Science Foundation, "Academic Research and Development Expenditures: Fiscal Year 2009," Table 1, http://www.nsf.gov/statistics/nsf11313/.

Collegiate Learning Assessment scores for 2,322 students at a mix of four-year schools, 45 percent of students demonstrated no significant learning in their first two years of college and 36 percent demonstrated no learning in four years.[24] Those are very large percentages of students apparently getting little or no new knowledge from higher education.

This is worrisome, but it must be qualified. The Collegiate Learning Assessment is aimed at "critical thinking," which is a notoriously difficult outcome to measure. In addition, the sample of students wasn't randomly selected and consists only of students in four-year institutions. Finally, the study is not longitudinal, so one cannot see if learning has been growing or declining over time.

The only representative assessment we have of the abilities of college grads comes from the National Assessment of Adult Literacy, "a nationally representative assessment of English literacy among American adults age 16 and older."[25] The problem is that the assessment has only been conducted twice—in 1992 and 2003—so we have only a short, two-point trend line to consider. Moreover, the test is only one measure of

Forty-five percent of students demonstrated no significant learning in their first two years of college and 36 percent demonstrated no learning in four years.

Literacy among college grads dropped at roughly the same rate that enrollment grew, and taxpayer funding per student was markedly increasing.

learning, and no doubt fails to capture many specific skills people acquire in college.

That said, what that trend shows is not good. In almost all types of literacy—prose, document, and quantitative—the percentage of people with at least "some college" demonstrating proficiency decreased markedly between 1992 and 2003. More disturbing, the percentages also plummeted for people with bachelor's degrees and graduate degrees. For instance, the percentage of bachelor's holders proficient in prose literacy dropped from 40 to 31 percent, and in document literacy from 37 to 25 percent. Among adults with at least some graduate education, there were proficiency drops from 51 to 41 percent in prose, and from 45 to 31 percent in reading documents.[26] To put that in context, between 1990 and 2000 the number of FTE college enrollees rose 13 percent and total taxpayer funding per FTE increased 21 percent. So literacy among college grads dropped at roughly the same rate that enrollment grew, and taxpayer funding per student was markedly increasing. It's a finding that suggests serious credential inflation and little overall bolstering of human capital.

Noncompleters

In addition to major underemployment among college grads and strong evidence of credential inflation, it is necessary to explore the possibility that taxpayer subsidies for higher education fuel noncompletion of studies. It is possible that some students might enter college because aid makes it less expensive than it otherwise would be but do not finish because they lack the necessary ability or drive to do so. In other words, aid could have the unintended effect of encouraging people to tackle something that they might not be prepared to handle.

Once again, this is not easy to determine. For one thing, we do not know whether people who entered college and did not complete it would have done so in the absence of aid. In addition, we do not have much long-term data to draw on to correlate greater taxpayer funding and completion rates. Moreover, what little longitudinal data we do have is only for first-time, full-time post-secondary students. Yet again, the data are only suggestive, not conclusive.

To the extent the information we have tells us anything of value, it is overall very discouraging, although it may be improving slightly. According to the *Digest of Education Statistics*, the percentage of bachelor's degree seekers who complete their degrees within four years is very low. The trend starts with students who began their studies in 1996 and remains low through the cohort that started in 2002. Only 33.7 percent of the 1996 cohort completed their degrees within four years, rising to only 36.4 percent for the 2002 group. There are similar trends for six-year grad rates: only 55.4 percent of 1996 starters had finished within six years, as had only 57.3 percent of 2001 starters. The absolute graduation rates were very poor, though at least the trajectory was slightly upward.[27]

Things are worse for two-year programs, with slightly downward trends. Only 29.3 percent of students who started two-year programs in 1999 had finished within three years. Among 2005 starters, only 27.5 percent had finished within three years.

What does this tell us? In an absolute sense, very small percentages of first-time, full-time students are completing their programs, even well beyond the time it is supposed to take them. The long-term trends are more mixed, but still disturbing, with four-year completion rates rising slightly while two-year rates dipped. At best, then, the trends are a wash—improving a bit for four-year programs, worsening for two-year—and the absolute performance is dismal.

Of course, whether or not this massive noncompletion problem is attributable to student aid is impossible to prove. But it does show that, with almost two-thirds of college students receiving some sort of aid, lots of students are getting taxpayer dollars and not completing their studies. Many people who are, apparently, not prepared for college are entering it and are paying for the

experience at least partially with taxpayer funds.

The Big, Clear Problem: Price Inflation

The presumption behind many of the taxpayer-funded programs for colleges and, especially, students, is that the money will make higher education more affordable and, hence, boost enrollment and human capital. But underlying this is the assumption that colleges will not raise their prices and capture student aid, use direct subsidies to buy items of questionable educational value such as new recreation centers, or hire more administrators, instead of using the funds to keep prices down. That assumption is demonstrably incorrect.

There is significant debate about whether student aid drives college price increases, though as we'll see, arguments against the possibility are weak. There is no question, however, that colleges and universities have been raising their prices at a very brisk pace in recent decades, and that those increases have largely nullified aid increases. A 2003 report from the U.S. House Subcommittee on 21st Century Competitiveness captured the problem nicely:

> There is no question that the federal contribution to student aid programs has been significant, and has increased much more quickly than the rate of inflation in order to keep pace with college costs. However, college costs have risen dramatically over the past three decades, and even the immense federal contribution has struggled to keep pace with skyrocketing tuition increases.[28]

Some basic numbers tell the tale. According to the College Board, real average tuition and fees at public four-year colleges rose by about $5,500 between 1980 and 2010, and by about $17,800 at private four-year schools. Meanwhile, total aid per student, which comes primarily through government, rose by $8,165, likely roughly equaling the average tuition increase when weighted by enrollment in public and private schools.[29] Indeed, adjusting aid for enrollment and average prices in three higher education sectors between the 1986–87 and 2006–07 school years reveals that "sticker prices" rose roughly 68 percent, but after-aid prices inflated only about 29 percent.[30] And note that aid is higher for students at the most expensive colleges and universities because, while prices a student faces vary from institution to institution, the student's "expected family contribution"—basically, what the federal government determines a student is able to pay—stays fixed, which means that government-provided aid makes up more of the difference at the higher-priced schools.

Clearly price increases swallow a lot of aid. But does aid fuel those increases? Unfortunately, many of the studies on this question are plagued by the use of short timeframes that might only capture one trough of a business cycle, or difficulties accounting for the fact that a student's aid eligibility automatically rises anytime prices increase.[31] But ultimately those problems, coupled with the reality that human beings will typically strive to maximize benefits for themselves, makes it almost impossible not to conclude that increasing aid enables colleges to raise prices, which schools do because they always believe they have need for even greater revenue. College presidents attest to this reality. Former Harvard president Derek Bok summed up the problem: "Universities share one characteristic with compulsive gamblers and exiled royalty: there is never enough money to satisfy their desires."[32] It's a more colorful way, essentially, of framing "Bowen's Law," named after economist and multiple-college president Howard Bowen, which essentially states that "colleges raise all the money they can, and spend all the money they can raise."[33] There is also, critically, research that does indeed find that increasing aid fuels rising prices, but the findings are fragmented by type of aid program, school, and so forth.[34]

Admittedly, there is no incontrovertible

Former Harvard president Derek Bok summed up the problem: "Universities share one characteristic with compulsive gamblers and exiled royalty: there is never enough money to satisfy their desires."

proof that taxpayer-funded aid drives rampant college price inflation. Given the major obstacles in the way of obtaining such proof, it is unlikely it can ever be attained. However, the logical and corroborated expectation that colleges will grab ever-increasing funds, and the strong empirical evidence that some types of colleges do indeed raise prices to capture at least some types of aid, strongly suggest that schools raise prices because government aid makes more money available to them.

A Net Loss

What does all this tell us about the effect of taxpayer funding on higher education? At the very least, it suggests that massive increases in total funding coming through taxpayer-based programs have had considerable negative consequences. On balance the indicators we have suggest that, while the huge funding boosts might have produced more students and degrees, the average degree holder is likely becoming less well educated. Moreover, it is very difficult not to conclude that increasing aid has in large part enabled schools to raise their prices rather make college more affordable. Finally, existing evidence suggests that credential inflation is at work, with many bachelor's degrees representing little by way of new, necessary skills or knowledge attained in college, and that advanced degrees are now alone in accompanying rising wages. In light of all this, it seems likely that taxpayer funding of higher education has been a net loss and should be greatly decreased, if not completely phased out.

Withdrawing federal intervention is, first of all, a legal issue. There is no constitutional justification for a continued federal presence outside of programs such as ROTC, which serves the legitimate function of supplying officers for the armed forces. Otherwise, Washington has no constitutional authority to be involved in higher education: such authority is not among the federal government's specifically enumerated—and only—powers. Even if federal college programs worked, the Constitution would have to be amended to allow them to continue.

But government intervention in higher education does not appear to work at any level, for all the reasons cited above. The reality seems to be that on net, government funding—federal, state, and local—of higher education is counterproductive. Indeed, at the state level researchers have found that greater state expenditures on higher education lead to lower rates of economic growth, other things being equal.[35] The likely reason? Taking money from taxpayers and giving it to students and schools extracts money from more efficient users—people who know their needs best and earned the money—and delivers it to less efficient users for whom the money is unearned.

Given this—and with the critical understanding that federal involvement is unconstitutional and should thus be completely eliminated—from an economic standpoint Congress at a minimum should eliminate loans for anyone other than truly low-income students—a designation perhaps pegged at the poverty rate—and should turn federal grant programs into loans. The goal of higher education, generally, is to increase one's earning potential, so there is no justification for giving away money from taxpayers—many of whom did not go to college—in order for someone else to get a degree and become wealthier. Moreover, ensuring that aid recipients ultimately bear the costs of their education would be a considerable deterrent against unprepared or unmotivated individuals enrolling in college. And, of course, private entities—both for-profit and charitable—could and would provide assistance to promising students as they already do, despite the huge crowding-out presence of taxpayer funds.

At the state level, subsidies to schools should be phased out, requiring institutions to survive and thrive by satisfying customers. At a minimum, state subsidies should be greatly reduced and "voucherized," connecting money to students, not schools. Schools should have to provide what paying custom-

Taking money from taxpayers and giving it to students and schools extracts money from more efficient users—people who know their needs best and earned the money—and delivers it to less efficient users for whom the money is unearned.

ers want, not what educators can lobby for.

Does this mean public colleges would be defunded? No.

For one thing, colleges already get tens of billions of dollars annually in philanthropic support. There is every reason to believe that that funding would greatly increase if government were to stop footing much of the bill. Moreover, public colleges—especially large research universities—have big competitive advantages over most private schools because the research universities have very large campuses and extremely diverse and expensive facilities. That would make them natural first choices for people wanting to finance all sorts of research. And all levels of government could continue to fund university-based research, but it should be research that (1) serves legitimate government purposes, which for the federal government is only research enabling it to better execute its specific, enumerated powers, (2) cannot be done more effectively and efficiently by the private sector, and (3) does not substantially detract from schools' teaching missions.

The ultimate goal should not be to tear down the Ivory Tower. It should be to make higher education much more efficient and effective, and do so without creating net harm to society. Eliminating massive, forced, third-party funding of higher education is the key to doing that. Unfortunately, the tendency in public policy is to look simplistically at the loss of public funding rather than consider the potentially huge gains from changing the current system: college would have to become cheaper and more efficient as subsidies were eliminated; potential students would have to be more discerning when deciding whether and where to go to college; credentials would have their value restored; and, most importantly, taxpayers would find hundreds of additional dollars in their pockets each year to apply to the priorities in their lives, whether that's food, housing, education, or investing for the future. And, ultimately, doing that would produce a much more efficient outcome for society as a whole.

Conclusion

Taxpayer funding for higher education has ballooned over the last quarter century, but there is little evidence it has done net good. It has probably helped to produce more college enrollees, but it has almost certainly also underwritten poor academic results, rampant price inflation, and considerable college inefficiencies, and has taken increasing amounts of money from individual taxpayers that they would have applied to more important and effective endeavors. That makes the ultimate conclusion pretty clear: taxpayers have been paying far too much for higher education over the last, roughly quarter century, and getting far too little for it.

Notes

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The ultimate goal should be to make higher education much more efficient and effective, and do so without creating net harm to society.

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