



## Cheap for Whom?

### How Much Higher Education Costs Taxpayers

By Mark Schneider and Jorge Klor de Alva

*Many more factors figure into the cost of a bachelor's degree than just tuition. Depending on the type of college or university, as well as its level of selectivity, taxpayers may contribute a substantial tax subsidy or, in rare cases, receive a moderate net "profit" per bachelor's degree. It is important to consider all of the costs and returns involved in higher education when considering dropout prevention and retention efforts, as well as how government subsidies are or should be distributed among colleges and universities. This Outlook is designed to fuel a discussion about the true costs of higher education and who pays for them.*

Consumers are usually not troubled by the difference between price (what we pay for something) and cost (what it costs to produce it), mostly because we are concerned about the former but are generally ignorant of the latter. If we go to Walmart to buy a roll of paper towels and the price is one dollar, the fact that it may cost thirty cents to produce is generally irrelevant. Consumers are even more likely to ignore cost when government subsidies lead to little resemblance between price and cost. With a highly subsidized service such as higher education, price and cost can diverge substantially—for example, a college diploma that carries a low price tag can cost far more than people realize.

Most people recognize that the price of public universities is underwritten by subsidies that they receive through direct government appropriations, but information on the size and distribution of those subsidies across schools is usually buried in

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obscure data and reports. Most private institutions also receive government subsidies, especially through their tax-exempt status. For the best-known—and best-endowed—not-for-profit colleges and universities, such as Harvard, Princeton, and Yale, these tax subsidies can be substantial. However, although

#### Key points in this Outlook:

- Tuition at both public and private for-profit and not-for-profit US higher education institutions is increasing, but taxpayers are also bearing significant hidden costs.
- Average taxpayers provide more in subsidies to elite public and private schools than to the less competitive schools where their own children are likely being educated.
- High dropout and low graduation rates drive up taxpayer costs, so degree completion and retention should be a focus of US higher education reform and state and federal policy discussions.
- Business as usual in higher education is too expensive. We need new modes of delivery for higher education to reduce taxpayer costs and rein in tuition.

figures on the size and distribution of state appropriations for public colleges and universities are hard to track down, calculating tax subsidies among not-for-profit institutions is far more arduous given the lack of accessible data, as is also true with data on campuses' use of endowment fund earnings.

In this *Outlook*, we not only estimate the size of those subsidies but also show that they are distributed in such a way that the more selective a school is and the fewer low-income students it serves, the larger its taxpayer subsidy. In other words, most taxpayers are spending far more money to educate students in the country's elite institutions than they spend to support their own children at the less-selective schools they likely attend.

Before we look at the data showing the size and distribution of taxpayer subsidies, we need to lay out a quick schematic describing how schools that grant bachelor's degrees in the United States are structured.<sup>1</sup> The first dimension to consider is tax status and ownership (what the federal government calls "control"). Three types of control exist: public institutions (for example, the University of Nebraska, the California State University campuses), private not-for-profit institutions (Harvard University, American University, Kentucky Christian University), and private for-profit institutions (University of Phoenix, Kaplan University). More than 2,000 four-year degree-granting colleges and universities exist in the United States: around 28 percent are public; more than 60 percent are private not-for-profit; and the remaining 12 percent are private for-profit. Because public institutions tend to be larger than private schools, more students are enrolled in public colleges than in the more numerous private institutions.<sup>2</sup>

The other distinction that matters is how colleges and universities are stratified by their level of selectivity. In this report, we use the well-known rankings reported in *Barron's Profiles of American Colleges*,<sup>3</sup> which classifies colleges and universities into six categories ranging from open-admissions schools ("noncompetitive") through the most selective ones ("most competitive").

Of the approximately 2,000 bachelor's degree-granting institutions listed in the US Department of Education's Integrated Postsecondary Education Data System (IPEDS), we were able to match almost 1,400 of them with a *Barron's* classification. Not surprisingly, selectivity data for colleges and universities fall into a typical bell curve: about 50 percent of the campuses are classified as competitive, about 6 percent as noncompetitive, and about 6 percent as most competitive.

Cross-classifying colleges and universities by the three categories of control with *Barron's* six categories of selectivity produces eighteen combinations. However, in assembling the data on which this analysis is based, we found only a few students and schools in some of the eighteen categories, so we chose to combine *Barron's* noncompetitive and less competitive categories. Moreover, all the for-profit campuses we identified were in the less competitive category. This left us with eleven categories and more than 600 schools that we analyze in this *Outlook*.<sup>4</sup>

In the following pages we look at how much taxpayers spend on producing bachelor's degrees in each of these types of schools and at a simple indicator of the return on those investments. We focus on direct financial benefits and costs, leaving aside the many indirect societal and individual benefits that accrue to communities and individuals because of higher education, such as better health and lower incarceration rates.

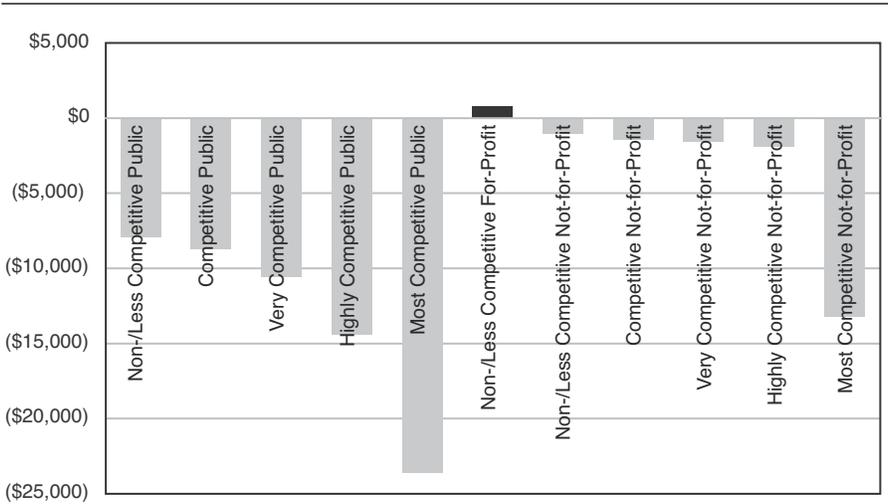
## Public Institutions Cost Taxpayers More Than Private Ones

Figure 1 displays the size of annual taxpayer subsidies across the eleven categories of institutions of higher education.<sup>5</sup> Not surprisingly, at any level of selectivity, public institutions receive larger taxpayer subsidies than do private ones. But two other patterns in the data are noteworthy.

First, the level of taxpayer subsidy *increases* with selectivity—the more elite the school, the more taxpayer money goes to the production of each bachelor's degree.

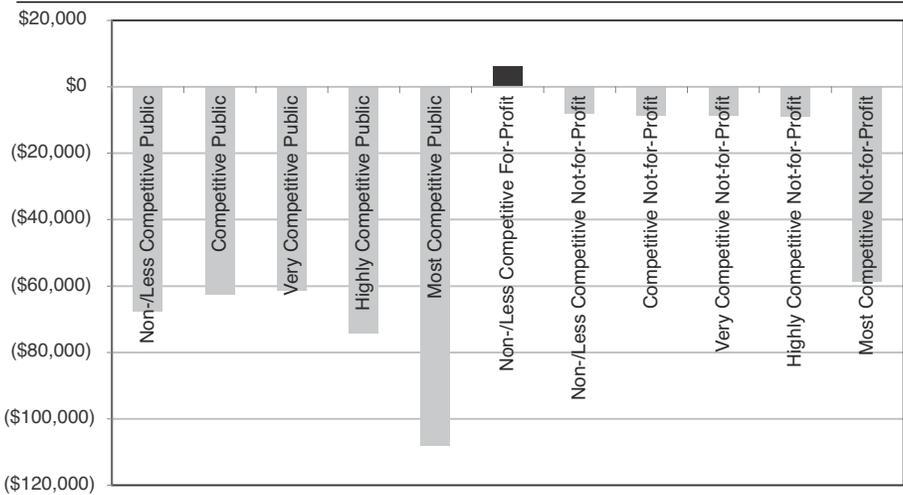
- For public institutions, there is a consistent increase across the first four levels of selectivity, with a more substantial bump in taxpayer costs in the most competitive state schools.<sup>6</sup> While we have subtracted the research expenditures colleges and universities report to the federal government, a substantial amount of state money still goes to these institutions to support research activities not separately enumerated in IPEDS.<sup>7</sup>
- Among not-for-profit institutions, the amount of taxpayer subsidies hovers between \$1,000 and \$2,000 per student per year until we turn to the most selective institutions in the country. Among these already well-endowed institutions, the taxpayer subsidy jumps substantially to more than \$13,000 per student per year.

FIGURE 1  
ANNUAL TAXPAYER SUBSIDIES PER STUDENT PER YEAR



SOURCE: Authors' calculations.

FIGURE 2  
TAXPAYER SUBSIDIES PER BACHELOR'S DEGREE



SOURCE: Authors' calculations.

Second, because for-profit institutions receive no state appropriations and pay income taxes, they cost the taxpayer nothing—indeed, they return a net “profit” to the taxpayer.

Figure 2 displays the amount of taxpayer subsidies supporting the production of a bachelor’s degree. It bears highlighting that, in calculating these total subsidies, we took into account both dropout rates and the time it takes students to earn a degree.

For public institutions, taxpayers are investing more than \$60,000 for each bachelor’s degree granted in the three less competitive categories, close to \$75,000 in the highly competitive institutions, and more than \$100,000 for each bachelor’s degree granted in the most competitive flagship institutions. Note that each bachelor’s degree granted from the non- or less competitive institutions actually costs *more* than a bachelor’s degree from competitive institutions, which in turn costs the taxpayer slightly more than a bachelor’s degree from the very competitive public institutions. This is a function of the high costs of dropouts and the longer time to graduation for students in less selective institutions.

Taxpayer costs for bachelor’s degrees in private institutions range from a net profit of more than \$6,000 per degree from for-profit institutions to a net cost of around \$8,000 for not-for-profits in every category of selectivity except the most selective ones, where the costs jump to more than \$58,000 per degree.

As we just noted, in less selective institutions, the cost of a bachelor’s degree is affected by high dropout rates. In table 1, we estimate how much the taxpayer subsidy for a bachelor’s

degree would fall if institutions in each category decreased their dropout rate by 50 percent.

In more selective institutions, lower dropout rates translate into very low savings because so few students leave. But for colleges and universities in the three less selective categories, the taxpayer cost per degree would fall by 20–30 percent. In short, when a student drops out of college, both the student and the taxpayers incur high added costs.

TABLE 1  
REDUCING DROPOUT RATES WOULD REDUCE TAXPAYER COSTS FOR DEGREES

	Barron's Non-/ Less Competitive		Barron's Competitive		Barron's Very Competitive		Barron's Highly Competitive		Barron's Most Competitive		
	For- Profit	Public	Not-for- Profit	Public	Not-for- Profit	Public	Not-for- Profit	Public	Not-for- Profit	Public	Not-for- Profit
Total Taxpayer Cost/ (Benefit) per Bachelor's Degree	(\$6,100)	\$67,600	\$8,000	\$62,600	\$8,700	\$61,200	\$8,600	\$74,300	\$8,800	\$108,000	\$58,700
With Dropouts Reduced by 50 Percent	(\$4,700)	\$53,000	\$6,200	\$51,600	\$6,700	\$54,300	\$7,600	\$68,800	\$8,300	\$103,500	\$56,500
Percentage of Taxpayer Cost Attributable to Higher Dropout Rate	23%	22%	23%	18%	23%	11%	12%	7%	6%	4%	4%

SOURCE: Authors' calculations.

## A Perverse System of Taxpayer Support

We have documented substantial taxpayer subsidies to students in most colleges and universities—through either direct appropriations to public institutions or tax subsidies for private not-for-profit schools. The federal government also supports students directly through the Federal Pell Grant program, which is designed to allow students with financial need to attend college when they might otherwise not be able to.

Low-income students—comprising the fastest-growing segment of the population—are concentrated in colleges and universities that get the lowest levels of taxpayer support. We believe that in this time of fiscal shortages and challenges to higher education, any debate on the best distribution of scarce funds for federal grants or state subsidies must be informed by these data.

## Taxpayer Return on Investment

Bachelor's degree holders earn substantially more than students with high school degrees: according to the US Census Bureau, young adults between the ages of twenty-five and thirty-four with a college degree, working year-round, earn around 40 percent more than someone with some college education who has not completed a degree and around two-thirds more than someone with just a high school diploma.<sup>8</sup> These annual differences accumulate over time, and the lifetime earnings of a college graduate can exceed those of a high school graduate by as much as half a million dollars.<sup>9</sup>

Taxpayers share in this bounty through the higher taxes that college graduates pay. These higher taxes can be considered a return on the investment taxpayers are making in students earning those degrees. How big is that return?

Using PayScale data, we calculated an earnings stream for graduates from each campus in our sample and compared this to the earnings stream of someone with only a high school diploma to estimate the added value of a degree from each school in terms of lifetime earnings.<sup>10</sup> Then, given that most income for most graduates is taxable, we applied existing federal tax rates to these additional earnings to estimate how much the federal taxpayer benefits from the added income resulting from the bachelor's degree. Because state income taxes average about 25 percent of federal tax collections, we increased the calculated federal tax by 25 percent to estimate net taxpayer gain.<sup>11</sup> Because these benefits are calculated over a graduate's work life, we took the present value of this stream of earnings.<sup>12</sup>

In the first substantive column of table 2, we report the additional tax benefits bachelor's degree holders generate through their higher income stream.<sup>13</sup> The tax benefits increase substantially with selectivity of the degree-granting institution. In most categories, graduates of public institutions make more and pay more income taxes than do graduates from private institutions; this steady increase turns into a large bump among graduates of the most selective private institutions, where a degree from a marquee private school pays off substantially for both the graduate and the taxpayer.<sup>14</sup>

In the next column of table 2, we report the taxpayer cost per degree (previously displayed in figure 2). The final column is the net benefit/cost to the taxpayer for the bachelor’s degree from each of the eleven categories of schools. Taken together, taxpayers experience a net benefit in nine of the eleven categories. Not surprisingly, the data show that given the much higher investment in public colleges and universities, taxpayers’ return on investment from public colleges and universities is far lower than the return from private schools.

Let us now look at the two categories of schools that represent a net loss to the taxpayer. First, in the non-/less selective schools, public institutions are in the red. Although both for-profit and not-for-profit private campuses have strong pay-offs to the taxpayer, high dropout rates mean these public campuses are costly, even as they receive the lowest tax subsidies. On the other end of the selectivity continuum, the most competitive public campuses also generate net losses to the taxpayer. In contrast to less selective campuses, these public flagship campuses have low dropout rates. Their losses to taxpayers, therefore, are generated not through the lack of student success but rather through the higher costs associated with research institutions, such as higher-paid faculty teaching fewer courses.

We recognize the unique role of state flagships in producing new knowledge and helping the United States maintain its competitive edge in the world economy. Nonetheless, legislators, governors, and other decision makers should be fully aware of just how much these institutions cost to run.

The country has embarked on a serious effort to improve college graduation rates, supported by large grants from foundations, with the full blessing of the Obama administration and state governors. To the extent that this “completion agenda” is met, the high cost taxpayers incur supporting bachelor’s degrees in the non- and less competitive colleges should come down. In contrast, the issue of the high cost of supporting our public flagships has not yet registered constructively in public discussion. Because flagship campuses may not be the best place to increase undergraduate enrollment, given

TABLE 2  
TAXPAYERS BENEFIT FROM THE HIGHER INCOME  
OF COLLEGE GRADUATES

Sector	Lifetime additional income taxes paid	Taxpayer benefit/(cost) per bachelor’s degree	Net benefit/(cost) to taxpayer
<b>Non-/Less Competitive</b>			
For-Profit	\$54,800	\$6,100	\$60,900
Public	\$60,100	(\$67,600)	(\$7,500)
Not-for-Profit	\$52,100	(\$8,000)	\$44,100
<b>Competitive</b>			
Public	\$66,700	(\$62,600)	\$4,100
Not-for-Profit	\$58,200	(\$8,700)	\$49,500
<b>Very Competitive</b>			
Public	\$78,100	(\$61,200)	\$16,900
Not-for-Profit	\$78,600	(\$8,600)	\$70,000
<b>Highly Competitive</b>			
Public	\$97,100	(\$74,300)	\$22,800
Not-for-Profit	\$93,600	(\$8,800)	\$84,800
<b>Most Competitive</b>			
Public	\$98,700	(\$108,000)	(\$9,300)
Not-for-Profit	\$147,100	(\$58,700)	\$88,400

SOURCE: Authors’ calculations.

per-student costs, their role in the college completion agenda needs considered attention.

## Conclusions

Taxpayers have long supported colleges and universities, mostly through subsidies for state institutions and tax breaks for private colleges. Unfortunately, government budgets are currently stretched far beyond their limits, with higher education demanding a larger portion of a shrinking pie. As states cut their higher education budgets, students, families, and policymakers need better information about the level of support colleges and universities are actually getting from the government—and what students and taxpayers are getting in return.

Based on the data presented in this *Outlook*, several broad policy considerations seem appropriate:

- First, given the financial return to graduates for each completed bachelor’s degree and the high cost of dropouts, the country must focus its resources and

policies on increasing degree completions and retention. One way to do this is for states to make a substantial share of their appropriations based on performance rather than enrollment. A complementary process is for states to participate in the Alliance of States initiative of Complete College America and actively work to make college completion a top policy priority.<sup>15</sup> The US Department of Education can contribute to this process by making continued Pell grant eligibility subject to periodic performance reviews.<sup>16</sup>

- Second, if the country is to retain its competitive edge, it must reverse the current policies that result in providing the lowest levels of taxpayer support to the institutions that enroll the highest percentage of low-income, nontraditional, and minority students—the fastest-growing segments of the population.
- Third, the Lumina Foundation for Education’s *Guide for State Policymakers* urges states to help expand and strengthen “lower-cost, nontraditional education options” through modification of their regulations so that these “education options . . . that operate across state lines, on-line institutions and competency based institutions” can “lower cost to states and the taxpayer.”<sup>17</sup> While some for-profit colleges and universities already fit this description, state policymakers should also look more closely at other models, including those that are more radical departures from business as usual, such as StraighterLine or Carnegie Mellon University’s Open Learning Initiative. These steps and more need to be taken to transform higher education into an affordable, successful endeavor because, as is becoming clear to many, “business as usual” will no longer work.<sup>18</sup>
- Finally, because the price of admission to the middle class through higher education is beyond the reach of a growing number of Americans, state and federal policy discussions concerning how and whom to fund must be informed by reliable data drawn from institutions across all types of control and levels of selectivity. These data must be in the public domain and must address what a degree actually costs both students and taxpayers and who actually pays for these degrees.

## **Appendix: Measuring Taxpayer Costs and Benefits**

Our estimates involved identifying money each campus receives from the government and subtracting the sum of these incoming funds from the funds each campus sends to the government. The underlying data are almost all from IPEDS. For some calculations, specifically noted below, we needed to estimate tax rates. In this appendix, we also describe the variables we collected and our calculations. Tables A1 and A2 report the various flows of funds between the government and campuses grouped into the eleven reporting categories. The source of these funds is noted in parentheses after each category.

### **Taxpayer Expenses via Government Subsidies**

*Direct Government Support/Student Grants for Tuition (IPEDS):*

- For public institutions: Government support, including federal operating grants and contracts, plus federal appropriations, including the sum of Pell, Academic Competitiveness, and National Science and Mathematics Access to Retain Talent (SMART) grants
- For private not-for-profit institutions: Government support, including federal grants and contracts, plus federal appropriations, including the sum of Pell, Academic Competitiveness, and National SMART grants
- For private for-profit institutions: Government support, including the sum of Pell, Academic Competitiveness, and National SMART grants

*State and Local Subsidies (IPEDS):* State and local support received by institutions—includes state grants and contracts plus local or private grants and contracts as reported by IPEDS. Public and private not-for-profit institutions also receive state and local appropriations, while private for-profit institutions do not.

*Government Subsidies via Students (Office of Federal Student Aid):* The federal government traditionally provides two types of direct student loans: subsidized and unsubsidized.<sup>19</sup> The primary difference is the point at which interest begins to accrue. No interest accrues on a subsidized loan, and no principal is due until the end of the six-month grace period that begins after a student graduates, leaves the institution, or drops below half-time enrollment. Therefore, the government-subsidized

TABLE A1  
NET COST OR BENEFIT TO TAXPAYERS PER DEGREE

	Barron's Non- and Less Competitive			Barron's Competitive	
	For-Profit	Public	Not-for-Profit	Public	Not-for-Profit
Number of Students	106,755	582,785	67,997	1,889,168	503,017
Percentage of Undergraduate Students	78%	88%	76%	86%	81%
<b>Amount Received from Government</b>					
Student Grants for Tuition	\$163,000,000	\$841,000,000	\$43,000,000	\$3,000,000,000	\$571,000,000
State and Local Subsidies	\$34,000,000	\$4,000,000,000	\$18,000,000	\$15,000,000,000	\$145,000,000
Federal Government Subsidies (excluding student grants)	\$45,000,000	\$36,000,000	\$6,000,000	\$108,000,000	\$45,000,000
Sum Amount Received from Government	\$243,000,000	\$5,000,000,000	\$67,000,000	\$19,000,000,000	\$763,000,000
Total Amount Received from Government in 2010 Dollars	\$246,000,000	\$5,000,000,000	\$68,000,000	\$19,000,000,000	\$772,000,000
Less Amount Spent on Research	\$0	\$741,000,000	\$4,000,000	\$3,000,000,000	\$136,000,000
Net Amount Received from Government	\$246,000,000	\$4,000,000,000	\$64,000,000	\$16,000,000,000	\$636,000,000
<b>Amount Paid to Government</b>					
Accruing Principal	\$126,000,000	\$86,000,000	\$17,000,000	\$306,000,000	\$172,000,000
Taxes Paid/Forgone	\$200,000,000	(\$182,000,000)	(\$23,000,000)	(\$641,000,000)	(\$241,000,000)
Amount Paid to Government	\$326,000,000	(\$95,000,000)	(\$5,000,000)	(\$335,000,000)	(\$69,000,000)
Total Amount Paid to Government in 2010 Dollars	\$331,000,000	(\$97,000,000)	(\$6,000,000)	(\$339,000,000)	(\$70,000,000)
Total Annual Benefit/(Cost) to Taxpayers	\$84,000,000	(\$4,000,000,000)	(\$70,000,000)	(\$16,000,000,000)	(\$706,000,000)
Annual Benefit/(Cost) to Taxpayers per Student	\$780	(\$7,800)	(\$1,000)	(\$8,700)	(\$1,400)
Weighted Total Benefit/(Cost) to Taxpayers per Degree	\$6,100	(\$67,600)	(\$8,000)	(\$62,600)	(\$8,700)

SOURCE: Authors' calculations.

TABLE A2  
NET COST OR BENEFIT TO TAXPAYERS PER DEGREE

	Barron's Very Competitive		Barron's Highly Competitive		Barron's Most Competitive	
	Public	Not-for-Profit	Public	Not-for-Profit	Public	Not-for-Profit
Number of Students	1,251,948	416,400	593,319	253,750	96,018	433,570
Percentage of Undergraduate Students	85%	82%	78%	86%	76%	73%
<b>Amount Received from Government</b>						
Student Grants for Tuition	\$5,000,000,000	\$462,000,000	\$4,000,000,000	\$519,000,000	\$1,000,000,000	\$8,000,000,000
State and Local Subsidies	\$13,000,000,000	\$169,000,000	\$9,000,000,000	\$116,000,000	\$1,000,000,000	\$862,000,000
Federal Government Subsidies (excluding student grants)	\$65,000,000	\$32,000,000	\$28,000,000	\$17,000,000	\$4,000,000	\$24,000,000
Sum Amount Received from Government	\$18,000,000,000	\$664,000,000	\$13,000,000,000	\$654,000,000	\$3,000,000,000	\$9,000,000,000
Total Amount Received from Government in 2010 Dollars	\$18,000,000,000	\$673,000,000	\$13,000,000,000	\$662,000,000	\$3,000,000,000	\$9,000,000,000
Less Amount Spent on Research	\$6,000,000,000	\$383,000,000	\$5,000,000,000	\$476,000,000	\$1,000,000,000	\$9,000,000,000
Net Amount Received from Government	\$12,000,000,000	\$289,000,000	\$7,000,000,000	\$185,000,000	\$1,000,000,000	\$807,000,000
<b>Amount Paid to Government</b>						
Accruing Principal	\$225,000,000	\$142,000,000	\$104,000,000	\$84,000,000	\$19,000,000	\$144,000,000
Taxes Paid/Forgone	(\$836,000,000)	(\$488,000,000)	(\$754,000,000)	(\$369,000,000)	(\$337,000,000)	(\$5,000,000,000)
Amount Paid to Government	(\$610,000,000)	(\$345,000,000)	(\$649,000,000)	(\$284,000,000)	(\$318,000,000)	(\$4,000,000,000)
Total Amount Paid to Government in 2010 Dollars	(\$618,000,000)	(\$349,000,000)	(\$657,000,000)	(\$288,000,000)	(\$322,000,000)	(\$4,000,000,000)
Total Annual Benefit/(Cost) to Taxpayers	(\$13,000,000,000)	(\$639,000,000)	(\$8,000,000,000)	(\$474,000,000)	(\$2,000,000,000)	(\$5,000,000,000)
Annual Benefit/(Cost) to Taxpayers per Student	(\$10,500)	(\$1,500)	(\$14,300)	(\$1,800)	(\$23,600)	(\$13,200)
Weighted Total Benefit/(Cost) to Taxpayers per Degree	(\$61,200)	(\$8,600)	(\$74,300)	(\$8,800)	(\$108,000)	(\$58,700)

SOURCE: Authors' calculations.

Title IV loans (Federal Family Education Loans<sup>20</sup> and Direct Loans) represent a cost to the federal government and the taxpayers. We estimate the costs of this subsidy to be the equivalent of the average three-month Treasury bill rate, which was 2.91 percent at the time of our analysis,<sup>21</sup> times the total subsidized loan disbursements made during the 2007–08 academic year.<sup>22</sup> As with other calculations, we converted this into 2010 dollars.<sup>23</sup>

*Research Expense (IPEDS):* These expenditures are included in funds received from the government. Since these funds are dedicated for specific activities that usually have little to do with bachelor’s degree production, we subtracted them from the amount received from the government.

### Funds Paid to Government

*Interest Paid by Students on Loans:* We used data from 2007–08. We did not calculate the interest earned on unsubsidized and PLUS (parent and graduate student) loans that accrued while the student was in school on a net present value basis because these dollars are rolled into the principal loan balance in that same period and subject to future interest payments. Because the government uses collection methods that are hard for an individual to avoid (for example, wage garnishment), we assumed that the government collects the full principal owed and did not discount the interest earned.<sup>24</sup> This is consistent with the federal budget, which also assumes that the government collects 100 percent on average for each Title IV dollar loaned (“principal”), regardless of default rates.<sup>25</sup> Given that the interest accrued while students are in school is included in the principal, we assumed that the taxpayer benefits by an amount equal to the interest charged on the different types of loans.<sup>26</sup>

We have combined tax expenditures (forgone taxes) and taxes paid to measure the net tax flow between institutions and government. We are likely overstating the extent of tax expenditures because some institutions make voluntary payments in lieu of property taxes, but IPEDS does not collect these data and we have found no other central data source that reports these payments.

*Tax Expenditures and Taxes Paid:* Public and private not-for-profit institutions are tax-exempt and do not pay tax on investment income, increases to endowments (gifts), or operating revenues. For-profit institutions pay sales tax on revenues (which include Pell grants and Title IV

loans) and income taxes on operating profits and investment income. In this study, we treated forgone tax payments as a cost to the taxpayers (that is, tax expenditures) while payment of taxes represents a benefit received by the taxpayers.

- **Forgone Taxes on Investment Income:** According to the IRS, the standard federal corporate tax rate is 35 percent for income over \$18.3 million.<sup>27</sup> State corporate tax rates vary from zero in some states to 9.99 percent in Pennsylvania. We used 5 percent as an estimate of the average state corporate tax rate across the country and applied this rate to all education sectors.<sup>28</sup>
- **Forgone Taxes on Endowment Contributions:** Although gifts from foundations are not taxable, we assumed that other contributors to university endowments would generate taxable income levels in at least the 25 percent federal tax brackets. Many of the contributing individuals likely have taxable income levels that fall in higher tax brackets, but we used this rate as a conservative estimate for calculating these forgone taxes.
- **Forgone Sales and Other Taxes:** Because we did not have sufficient information to calculate exact forgone sales and use taxes for public and private not-for-profit universities, we used a 0.5 percent use tax rate to estimate the forgone sales and other taxes for other education sectors. The actual sales and other taxes would likely be higher for public and private not-for-profit universities if they were charged.<sup>29</sup>

*Total Taxes Paid:* Private for-profit universities pay corporate tax on investment income, income tax on total taxable revenue (net of operating expenses),<sup>30</sup> and sales tax.<sup>31</sup> As noted earlier, we consider payment of taxes a benefit received by the taxpayers. Total taxes paid equal the sum of:

- *Tax on Investment Income* = Investment income × (35 percent + 5 percent)
- *Tax on Corporate Profits* = Taxable revenue × 10.8 percent
- *Sales and Other Taxes* = Taxable revenue × 0.5 percent

We added these numbers and adjusted the 2008 numbers for inflation to create a measure of the total amount paid to the government in 2010 dollars.

*Total Annual Benefit (Cost) to Taxpayers:* This is the sum of money paid to and money received from governments as measured above, in 2010 numbers.

With these overall sums, we calculated total annual benefit/cost per student, dividing the total annual benefit/cost by the number of full-time enrolled students. Tables A1 and A2 show the flow of money for the eleven categories of schools.

## Notes

Authors' note: The data used in this report are drawn from a larger study by the authors entitled *Who Wins? Who Pays? The Economic Returns and Costs of a Bachelor's Degree* (Washington, DC: American Institutes for Research and San Francisco: Nexus Research and Policy Center, 2011), [www.air.org/files/WhoWins\\_bookmarked\\_050411.pdf](http://www.air.org/files/WhoWins_bookmarked_050411.pdf) (accessed September 14, 2011).

1. Our analysis is focused on bachelor's degree-granting institutions and does not include community colleges, an increasingly important part of higher education in the United States.

2. Based on full-time equivalent undergraduate enrollment, public colleges and universities account for almost two-thirds of all students.

3. See Barron's Educational Series, Inc. *Barron's Profiles of American Colleges* (Author: Hauppauge, NY, 2009, 2011).

4. For more detail on the sample and methods used, see Klor de Alva and Schneider, *Who Wins? Who Pays?*

5. The appendix to this *Outlook* lists each variable we used in our calculations and describes all calculations we used to generate our estimates.

6. These are the so-called "flagship" campuses, which are the best-known campuses in state systems. Examples include the University of North Carolina at Chapel Hill, the University of Michigan at Ann Arbor and the University of California at Berkeley.

7. For just how much this may be costing taxpayers in Texas, see Richard Vedder, Christopher Matgouranis, and Jonathan Robe, *Faculty Productivity and Costs at the University of Texas at Austin: A Preliminary Analysis* (Washington, DC: Center for College Affordability and Productivity, 2011), [www.centerforcollegeaffordability.org/uploads/Faculty\\_Productivity\\_UT-Austin\\_report.pdf](http://www.centerforcollegeaffordability.org/uploads/Faculty_Productivity_UT-Austin_report.pdf) (accessed September 8, 2011).

8. See US Census Bureau, "Current Population Survey, 2010 Annual Social and Economic Supplement," [www.census.gov/hhes/www/cpstables/032010/perinc/new04\\_001.htm](http://www.census.gov/hhes/www/cpstables/032010/perinc/new04_001.htm) (accessed September 12, 2011).

9. See Klor de Alva and Schneider, *Who Wins? Who Pays?*, and Mark Schneider, "How Much Is That Bachelor's Degree

Really Worth?" *AEI Education Outlook* (May 2009), [www.aei.org/outlook/100034](http://www.aei.org/outlook/100034).

10. For an explanation of these data, see PayScale, "Methodology Overview, 2011–2012 PayScale College Salary Report," [www.payscale.com/best-colleges/salary-report.asp](http://www.payscale.com/best-colleges/salary-report.asp) (accessed September 12, 2011).

11. Note that we are using only federal income taxes and not including payroll taxes, which would also increase with higher income up to the annual cap.

12. We calculate lifetime returns respectively building on the methodology used by the US Census Bureau. See Jennifer Cheeseman Day and Eric C. Newburger, "The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings," *Current Population Reports* (July 2002), [www.census.gov/prod/2002pubs/p23-210.pdf](http://www.census.gov/prod/2002pubs/p23-210.pdf) (accessed September 12, 2011), as modified by Mark Kantrowitz, "The Financial Value of a Higher Education," *Journal of Student Financial Aid*, 37, no. 1 (2007): 19–27. We estimated expected earnings over an individual's work life using various expected annual growth rates in salaries for college graduates calculated for each school sector. We applied these growth rates starting with salaries at ages twenty-five through forty-two. From that age on, we used growth rates calculated with census income data to estimate the salary levels in the salary growth profile until age sixty-five (following the census, we used a work life of forty years). To determine the net present value of this calculated stream of earnings, we used the 2010 thirty-year Treasury bill interest rate as the discount rate (4.5 percent).

13. Note that we are capturing only income taxes. Other taxes that likely increase with income (such as sales and property taxes) are not measured.

14. We are not measuring the added value of attending an Ivy League (or similarly selective) institution.

15. See Complete College America, "The Alliance of States," [www.completecollege.org/alliance\\_of\\_states](http://www.completecollege.org/alliance_of_states) (accessed September 12, 2011).

16. For example, see Jorge Klor de Alva, "The Future of Pell Grants: 6 Views," *Chronicle of Higher Education* (March 20, 2011), [www.chronicle.com/article/The-Future-of-Pell-Grants-6/126820](http://www.chronicle.com/article/The-Future-of-Pell-Grants-6/126820) (accessed September 12, 2011).

17. See Lumina Foundation for Education, *Four Steps to Finishing First in Higher Education: Step 3* (2009), [www.collegeproductivity.org/sites/default/files/FourSteps\\_Step%203\\_NonTradit~1.pdf](http://www.collegeproductivity.org/sites/default/files/FourSteps_Step%203_NonTradit~1.pdf) (accessed September 12, 2011).

18. See the papers presented at the American Enterprise Institute's conference on "Degrees of Difficulty" (February 15, 2011), [www.aei.org/event/100346](http://www.aei.org/event/100346).

19. Note that campuses do not receive student loans—they go to students. However, we have debited taxpayers with

the interest subsidies because these loans can be received only by students.

20. The Federal Family Education Loan Program ended in 2010.

21. We calculated the average three-month Treasury bill rate as the average of three-month treasury constant maturity rates from June 2008 to July 2009. Data were obtained from US Department of the Treasury, "Resource Center," [www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/default.aspx](http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/default.aspx) (accessed September 14, 2011).

22. See Federal Student Aid, "Data Center," <http://federalstudentaid.ed.gov/datacenter/programmatic.html> (accessed September 13, 2011). Under the Loan Volume heading, two programs are listed: the Direct Loan and Federal Family Education Loan programs. Under each program is a drop-down menu; we selected "AY2007-2008, Q4" for each and downloaded the associated reports. We pulled amounts from the Award Year Summary tab, and used the amounts listed in the \$ of Disbursements column in the calculation for each relevant category (Subsidized, Unsubsidized, Parent Plus, and Grad Plus).

23. The cost of principal is, of course, borne by the student borrower.

24. While one could argue that these future interest dollar payments should be discounted, we did not consider them because of the limitations on accurately gathering the measures we would need, such as average length of outstanding student loans and average student loan balances. What we do know is that the government collects 100 percent of the principal balance, and that is all that is included in our analysis.

25. We used a uniform 100 percent rate, although the rates likely vary across school types. The government does not report its collection rates by individual schools or by sector. Also, the recovery rate on defaulted loans is 112 percent of the default claim (gross recovery rate) and 85 percent of the net of collection charges on a net present value basis.

26. We calculated the interest paid by the type of loan issued and the prevailing interest rate in 2008 for each of the programs: subsidized loans, 2.91 percent; unsubsidized loans, 6.8 percent; Parent Plus, 8.4 percent for not-for-profit and for-profit; public institutions, 8.2 percent; Grad Plus, 8.5 percent for not-for-profit and for-profit and 8.3 percent for public institutions.

27. For federal corporate tax rate data, see Jack Taylor, "Corporation Income Tax Brackets and Rates, 1909–2002," *SOI Bulletin*

(Fall 2003), [www.irs.gov/pub/irs-soi/02corate.pdf](http://www.irs.gov/pub/irs-soi/02corate.pdf) (accessed September 13, 2011); for state corporate tax rate data, see Tax Foundation, "State Corporate Income Tax Rates 2000–2011," [www.taxfoundation.org/taxdata/show/230.html](http://www.taxfoundation.org/taxdata/show/230.html) (accessed September 13, 2011).

28. We recognize that part of the investment income generated from endowments is used by not-for-profit institutions to offset business expenses and that amount may be considered nontaxable if the institution were a for-profit school. However, in our calculations we assumed that if the for-profits invest excess cash and that investment (in whatever form it takes) generates investment income of X dollars, then for-profits would be taxed at a rate of 40 percent on this X dollar income. We subsequently applied this same rationale to the way nonprofits generate income from their endowments. Basically, both for-profit and not-for-profit institutions can use their generated returns however they choose, and given that discretion—that is, given their control over what is and is not used to offset operational costs—it would be impossible to state with any certainty what the actual net taxable impact would need to be in either case. We were attempting to demonstrate in our analysis the fundamental differences—taxation—that for-profits are subject to and not-for-profits are not.

29. This and the 10.8 percent corporate tax rate we used are based on data obtained from a large for-profit institution.

30. Using information shared with us by a large for-profit university, we applied the tax paid by that school as a percentage (10.8 percent) of its revenues to infer the tax on other institutions currently not subject to tax. The lower-than-expected rate in part reflects the fact that some of the revenue ("gross receipts") is offset by deductible expenses. Because other institutions do not have the same profit-making objective, it is impossible to estimate taxes where no profits exist otherwise.

31. We estimated the tax for purchases subject to sales and use taxes (if sales taxes are not assessed, purchasers are still required to pay a use tax). For-profit institutions are required to charge and remit sales tax on revenues in New Mexico and Hawaii, but those are pass-through sales taxes, not what we are seeking to capture here. Because we estimated sales and use taxes as a percentage of revenue, it seems appropriate and expected that 0.5 percent would be significantly lower than actual sales tax paid, which could be in the 8–9 percent range for purchases.