

Trends in College Spending

Where does the money come from?
Where does it go?



A report of the Delta Cost Project

Supported by Making Opportunity Affordable, an initiative of Lumina Foundation for Education

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Delta Cost Project

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Our country's system of higher education—long extolled as the best in the world—is showing serious fault lines that threaten capacity to meet future needs for an educated citizenry. There are many causes for concern, but chief among them is a system of finance that will be hard to sustain in the current economic environment.

To be sure, higher education has gone through hard times before. But looking at the economic and political horizon in January of 2009, only the rosiest of optimists can believe that what lies ahead is going to be similar to what we have seen before. The shock waves from the international upheaval in credit markets are just now beginning to be felt—in greater demand for student aid, tightening loan availability, dips in endowment assets and earnings, rising costs of debt payments, and deep state budget cuts. Families are going to find it harder to find the resources to pay for the almost-automatic increases in student tuitions that have been the fuel for higher education in the past decade. Even with increases in tuition, most institutions will still face deficits that require deep spending cuts.

Our country needs to increase capacity *and* improve performance in higher education. We can't allow the funding crisis to justify rollbacks in access or quality. Institutional and policy leaders need to be making strategic investments in the future through reallocation of existing resources as much, or more, as from new revenues. That means paying attention to spending—both to improve management of costs and to persuade the public that higher education deserves to be a priority for continued public investment. Doing that requires better data about spending, put into context through comparative and historical analyses, and looking at spending in relation to performance. It also requires better public communication about spending, in language that the public and policy makers can understand.

Therein lies the rub: as an industry, higher education still has not made the transition from cost accounting to cost accountability. The problem isn't a lack of data; every institution collects and reports cost data for audit, institutional research and budget purposes. But despite numerous efforts to encourage voluntary adoption of common metrics, there has been little progress in translating cost data into information that can be used either to inform strategic decision making or to show the public how institutions spend their money. It is not surprising that a growing majority of the public believe that institutions aren't paying attention to spending, and are willing to put the institution's "bottom line" ahead of public and consumer needs.

Foreword

It's time to get serious about cost accountability in higher education

By Jane Wellman, Executive Director of the Delta Cost Project

Higher education has gone through hard times before. But looking at the economic and political horizon in January of 2009, only the rosiest of optimists can believe that what lies ahead is going to be similar to what we have seen before.

It's time to get past the technical obstacles that have dominated this topic for too long and do something about cost accountability. Every institution should be able to tell students, boards

and legislatures basic facts about where the money comes from, where it goes, and what it buys. Every state policy maker should know how state funds are spent, what they buy, and how their institutions compare to those in other states.

This work is a starting place for this conversation, the first of a planned series of regular reports containing metrics that every state and every institution should be able to use. Thanks to the support of

Lumina Foundation for Education, we have translated public information into an analytical format for regular reports about revenues, spending and performance. Data for public and private nonprofit institutions have been organized to enable cross-sector comparisons and trend analysis. We look at where the money comes from, where it goes, what it buys, how spending relates to tuition, and what we know about spending and degree production. We will maintain the data and make the information available to the public and to policy makers—national data, regional data, state data, and data on individual institutions.

We recognize that aggregate data are not a substitute for the more granular analysis that institutions and states need to perform regularly to examine their own spending patterns. More research is also needed on the critical relationship between spending and performance, to find better ways to improve efficiency without compromising quality. But even if the metrics don't tell us everything, they tell a lot, and it's a good place to begin.

Acknowledgments

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every institution should be able to use.**

Introduction

How do colleges and universities spend their money? To most, it's a black box. The public looks at tuitions, states look at appropriations, trustees look at the endowment, and department managers look at their budgets. How colleges actually spend their money is barely understood by the general public and even many policy makers. In the current economic environment, opacity about college spending has to give way to greater transparency about spending, and an understanding of the relationship between spending and performance.

Trends in College Spending: Where Does the Money Come From? Where Does It Go? provides a look inside the black box of higher education finance, highlighting financial trends in operating budgets at public and private nonprofit higher education institutions. Using data that all higher education institutions report annually to the U.S. Department of Education,¹ this report updates earlier work by the Delta Cost Project, focusing on the period from 2002 to 2006, the latest year in which spending information is available. The fiscal data presented in this report include operating revenues and expenditures per full-time equivalent (FTE) student and adjusted for inflation using the Consumer Price Index (CPI); all data are presented in 2006 dollars.

Understanding spending requires knowledge of the interaction between enrollment patterns, revenues, spending, and results. This report moves sequentially through each of these, to show:

- **Enrollment patterns:** Are enrollments growing or declining? Where are students going to school, and have enrollment patterns by institutional type changed over time?
- **Revenue trends:** Where does the money come from? Do changing revenue structures influence how the money is spent?
- **Spending for education:** How much of the money supports education and related expenses? How has spending for education changed over time and why has it changed?
- **Spending increases:** Where is spending increasing most rapidly? Is there any evidence of cost cutting?

¹ Data for this report are derived from the Integrated Postsecondary Education Data System (IPEDS). A more detailed discussion of the data as well as other methodological issues can be found on the Delta Cost Project website (www.deltacostproject.org) and in the report *The Growing Imbalance: Recent Trends in U.S. Postsecondary Finance*. 2008. Washington, DC: Delta Cost Project.

Trends in college spending

Where does the money come from? Where does it go?

- **Spending and tuition:** What portion of tuition increases can be attributed to increased spending?
- **Spending and subsidies:** What portion of the costs of education do students themselves pay? What portion do institutions or states subsidize?
- **Spending and results:** What can be said about the relationship between spending and educational outcomes?

The Delta Cost Project aims to make higher education more affordable by improving the management of costs. A basic premise underlying the Delta Cost Project and this report is that college spending can indeed be contained *without sacrificing access or quality*. But before costs can be contained, they must be understood and tracked.

About the institutional groups

This report addresses the diversity in U.S. colleges and universities by grouping relatively similar institutions into categories based on their Carnegie classification and sector (e.g., public or private nonprofit). This scheme organizes data into comparable groups based on mission, funding, and governance. These organizational groupings are useful for broad comparisons across categories of roughly similar institutions, but some variation remains within categories, particularly in the private research group (*see below*). For national trends presented in this report, a standard institutional classification is used, separating the public and private nonprofit sectors into mission-based groupings. Trend data are reported using a panel or subset of institutions that is consistent over time, so that variations in patterns are not attributable to changes in the institutions reporting data. This sample includes:

- 1) public research—149 institutions
- 2) public master's—238 institutions
- 3) public community colleges (associate's)—715 institutions
- 4) private nonprofit research—85 institutions
- 5) private nonprofit master's—305 institutions
- 6) private nonprofit bachelor's—452 institutions

These institutions collectively comprise the vast majority of degree-granting institutions in higher education.

Private for-profit institutions, an important and growing sector in American higher education, are excluded from the fiscal analyses because of the poor quality of trend data for these institutions. For ease of data presentation, private nonprofit two-year

colleges and public bachelor's institutions, as well as tribal and specialty schools, are also excluded since fewer students are enrolled in these institutional sectors.

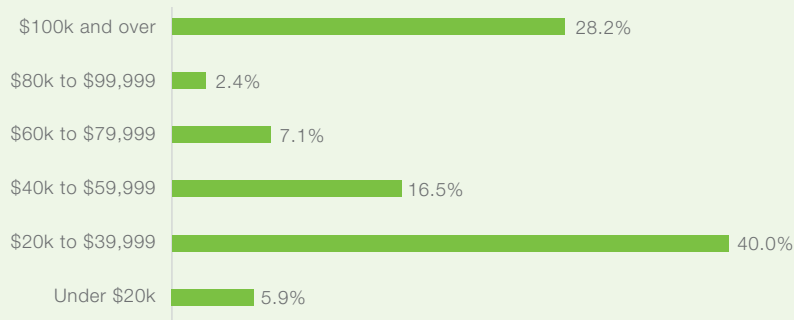
A caveat about the private research sector...

The private research institutions, as a group, vary more than any other institutional category. Just 24 institutions (28% of private research universities) receive more than \$100,000 per student in total operating revenues—while nearly half receive less than \$40,000 per student (see *Figure 1*).

Figure 1

Private research institutions, as a group, vary more than any other category

Distribution of private research institutions by total operating revenues per FTE student, 2006



Source: Delta Cost Project IPEDS database, 20-year matched set.

Setting the stage:

The landscape of higher education in the United States

Approximately 6,700 public and private postsecondary institutions served over 18 million students in 2006. These institutions vary in size, mission and history. Some U.S. universities are considered among the most prestigious in the world and attract top scholars and students from all over the globe. Other institutions open their doors to any student with a high school diploma or GED and often find themselves providing remedial education to make up for inadequate preparation for college. Along with the wide array of missions, there are major differences between institutions in revenue and spending patterns, as well as in the number and type of students they serve.

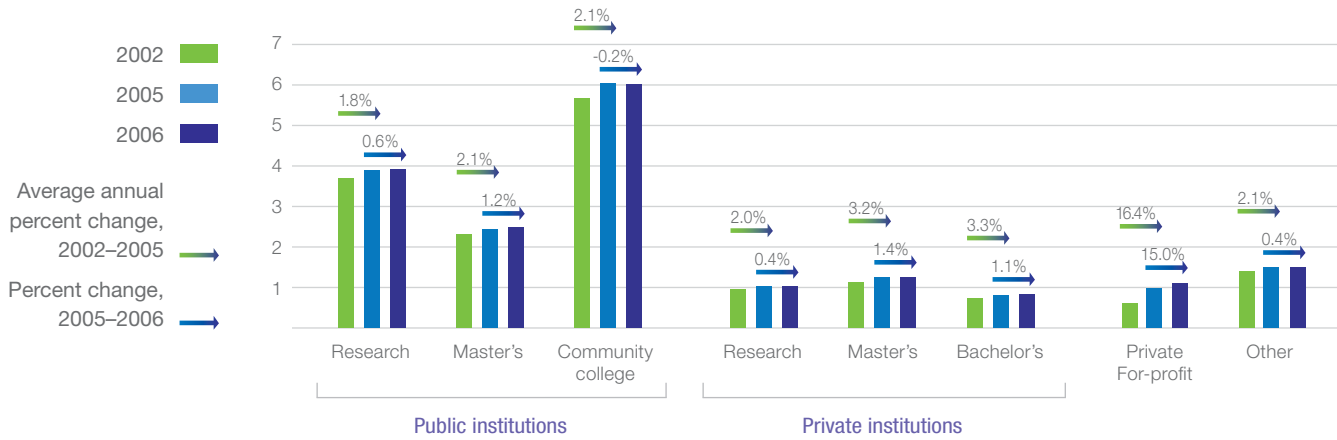
Postsecondary institutions have experienced sizable enrollment growth in recent years:

- Overall postsecondary enrollments increased by more than 1.6 million students between 2002 and 2006, growing an average of more than 2 percent per year—the greatest five-year growth since the baby boomers headed to college.

Figure 2

Student numbers grew most at private for-profit institutions and public community colleges

Total headcount enrollment in millions by sector, 2002–2006

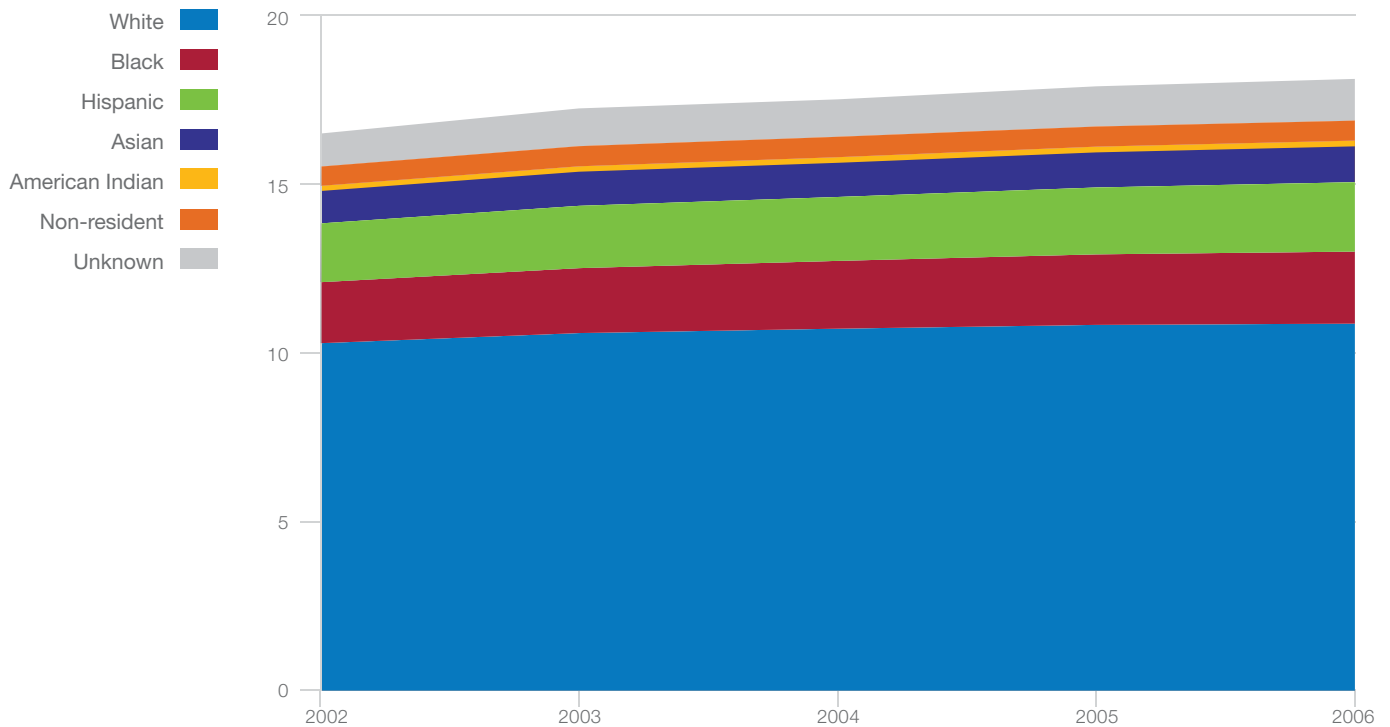


Source: Delta Cost Project IPEDS database, unmatched set.

Figure 3

Enrollment growth has been greatest among students of color

Total headcount enrollment in millions by race/ethnicity, 2002–2006



Source: Delta Cost Project fall enrollment by race/ethnicity IPEDS database, unmatched set.

- Enrollments grew in all institutional groups, but the greatest numeric increases between 2002 and 2006 were in private for-profit institutions and public community colleges. The rate of growth is considerably higher among private institutions, nonprofit as well as for-profit, than in the public sector (*see Figure 2*).
- Since 2005, the rate of growth in all institutions has slowed compared to previous years. Enrollment at public community colleges actually declined in real numbers between 2005 and 2006.
- From 2005 to 2006, the number of Hispanic students increased by nearly 75,000 compared to a 37,300 increase in White students and a 44,900 increase in Black students (*see Figure 3*).
- Enrollment growth for Hispanic students continues to be steepest at public community colleges, whereas the greatest growth for Black and White students is at for-profit institutions.

Uses and limits of IPEDS data for cost trends

Comparison data for postsecondary education draw heavily from the federal government's Integrated Postsecondary Education Data System (IPEDS), a series of surveys on different aspects of postsecondary education. In recent years, there have been definitional changes and significant adjustments in financial reporting standards mandated by the accounting standards boards, which often make comparisons over time difficult. To facilitate long-term trend analyses, the Delta Cost Project has refined the data as much as possible to mitigate many of the problems encountered when using IPEDS data for trend analyses. As the data are most consistent from 2002 forward, this report focuses on the changes within this time frame, with occasional references to 1995 to provide a broader context.

There are two areas of particular importance to policy makers where IPEDS data are not sufficient to explain changes over time:

- **Institutional financial aid and tuition discounting.** Institutionally funded student aid, including tuition discounting, is not recorded as a spending item in IPEDS. IPEDS instead only reports a portion of spending on “scholarships and fellowships” that are net of allowances (e.g., after subtracting for funds that are used to pay for tuition and other costs). “Scholarships and fellowships” therefore picks up just a fraction of revenues associated with institutional aid. A more useful way to examine institutional aid is to look at tuition discounting—the difference between gross and net tuition revenue—a trend highlighted in this report.

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- **Endowment income.** IPEDS data on endowment earnings are not consistent between institutions because institutions structure their endowments differently. Additionally, investment returns on endowments were not recorded as current fund revenues for private institutions before 1997 and began to be phased in for public institutions after 2002. In this report and other Delta Cost Project analyses, endowment earnings have been grouped into a revenue category along with private gifts and investments. The sum of these revenues after 2002 is the best and most accurate way to understand these revenue sources, without trying to distinguish between them.

Where does the money come from?

Revenue trends. Colleges and universities get their money from a number of sources. Tuition and fees, state and local appropriations, endowment income, and federal funds are the dominant sources for the operating budgets; and private gifts, bond revenues, and federal and state capital outlay appropriations are the dominant sources for capital budgets. Capital outlay funding is largely separate from operating budgets, partly because of the different revenue sources and because of the longer horizon for amortizing costs. As a result, most discussions of higher education costs, in particular cost benchmarking between institutions, focus exclusively on operating budgets.²

Revenues dictate functionality in higher education. Therefore, to understand spending fully, it is first necessary to know where the money is coming from. Higher education operates under what economists often call the “revenue theory of costs,” which means that spending—both overall levels and what the money gets spent on—is dictated by revenues. Colleges and universities are often limited in their ability to decide where to spend money, because many sources are restricted by the donor to certain purposes. The primary sources of general revenues for public institutions are state and local appropriations and tuition and fees. Private colleges and universities also rely on tuition and fees, as well as returns on endowment, and private gifts. Federal contract and grant money is overwhelmingly provided for sponsored research or public service. Revenue-producing auxiliary enterprises, such as dormitories, bookstores or hospitals, are basically self-supporting enterprises and are not major sources of subsidy for general-purpose instruction, although excess revenues from auxiliaries can add to subsidies for some institutions.

² Analysts estimate that the exclusion of capital funding from conventional cost analyses understates the total cost of all operations by about 20 to 40 percent per student per year. See Winston, Gordon C. 1998. “A Guide to Measuring College Costs,” Discussion Paper No. 46, Williamstown, MA: Williams Project on the Economics of Higher Education.

Between 1995 and 2006, the dominant revenue pattern across public institutions was the growing dependence on tuitions as a primary source of revenue. Among private nonprofit institutions, although tuition revenue has increased, tuition as a percentage of total operating revenues has declined (see *Figure 4, next page*).

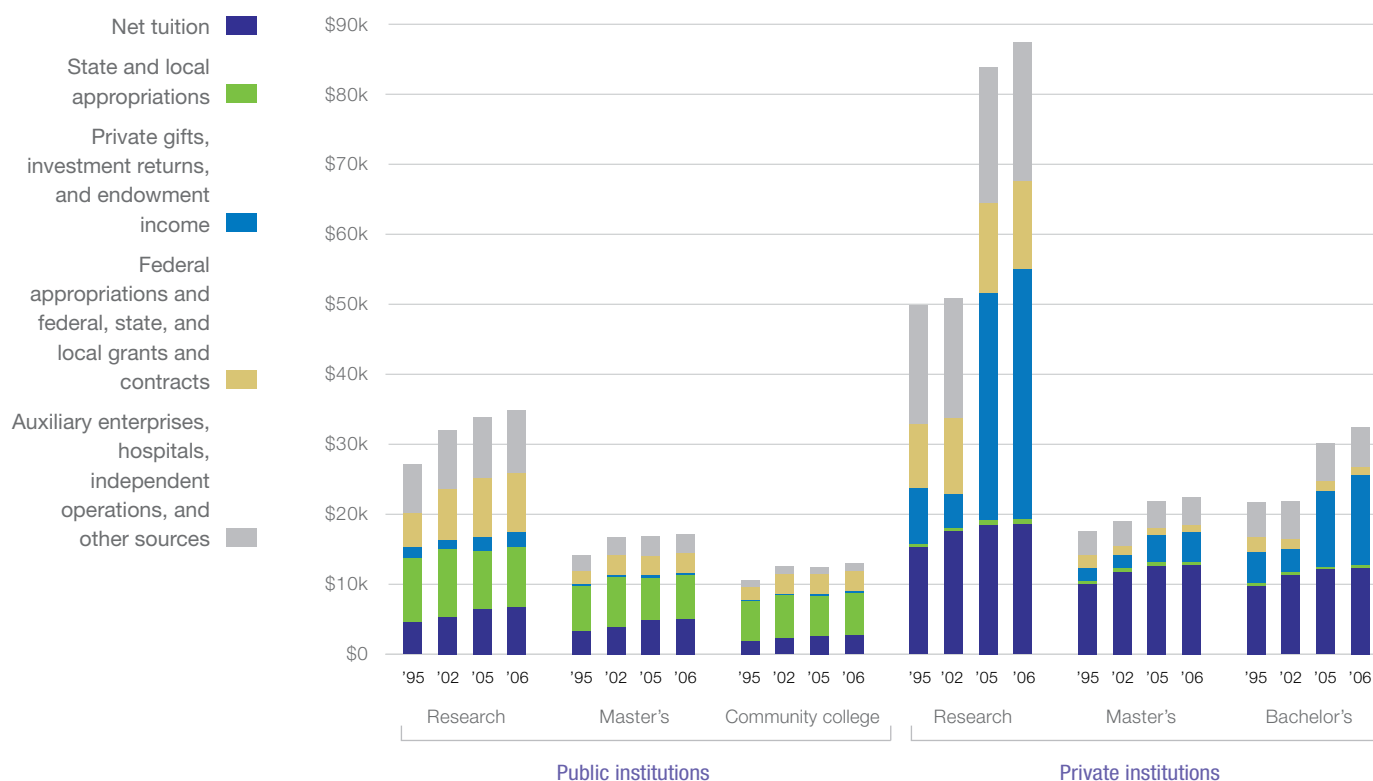
Where the money comes from: Sources of revenue

- **Net tuition revenue:** Total revenue from tuition and fees, excluding student aid that is applied to tuition and fees.
- **State and local appropriations:** Revenues received through state or local legislative organizations (except grants, contracts and capital appropriations).
- **Private gifts:** Revenues received from private donors or from private contracts for specific goods or services provided by the institution that are directly related to instruction, research, public service, or other institutional purposes.
- **Investment returns:** Investment revenues from interest income, dividend income, rental income or royalty income.
- **Endowment income:** Generally, income from trusts held by others, and income from endowments and similar funds.
- **State and local grants and contracts:** Revenues from state or local government agencies for training programs or similar activities that are either received or reimbursable under a contract or grant.
- **Federal appropriations, grants and contracts:** The total amount of revenue coming from federal appropriations, grants and contracts.
- **Auxiliary enterprises:** Revenues generated by, or collected from, auxiliary enterprise operations of the institution that furnish a service to students, faculty or staff, and that charge a fee related to the cost of service. These are generally self-supporting activities such as residence halls, food services, student health services, and inter-collegiate athletics.
- **Hospitals, independent operations, and other sources:** Revenue generated by hospitals operated by the postsecondary institution. Revenues associated with the medical school are not included. "Independent operations" includes revenues associated with operations independent or unrelated to instruction, research or public services and generally includes only revenues from major federally funded research and development centers. "Other sources" includes miscellaneous revenues not covered elsewhere.

Figure 4

Dependence on tuitions as a primary source of revenue grew over the past decade

Average total operating revenue per FTE student by source, 1995, 2002, 2005, and 2006 (in 2006 dollars)



Source: Delta Cost Project IPEDS database, 20-year matched set.

At public institutions, the shift in revenues in part reflects changes in state appropriations:

- After adjusting for FTE enrollment and inflation, state and local appropriations—historically the single largest revenue source for most public colleges and universities—rose between 1995 and 2002, fell considerably between 2002 and 2005 and rebounded somewhat between 2005 and 2006.
 - The decline between 2002 and 2005 amounted to approximately \$1,500 per FTE student at public research universities, about \$1,000 per FTE student at public master’s institutions, and \$500 per FTE student at public community colleges.
 - The rebound in 2006 amounted to \$328 per FTE student in public research institutions, \$228 per FTE in public master’s institutions, and \$434 per FTE in the public community colleges.
 - Thus, even with the recovery of state funding, state appropriations per FTE remained well below previous levels. And stress on state budgets from the economic meltdown of late 2008 will undoubtedly result in further declines in higher education appropriations in the upcoming years.

Terminology for tuition revenues

IPEDS reports several types of tuition revenues:

“Sticker” prices—average full-time resident undergraduate tuition and fees for in-state residents at public institutions, or average full-time undergraduate tuition and fees for private institutions;

Gross tuition revenue—all revenues from tuition and fees before discounts, similar to sticker prices multiplied by total number of students;

Net tuition revenue—revenues from tuition and fees after tuition discounts.

- As state funds per student declined, public institutions turned to tuition revenues, with the greatest increases in the public research sector, and the smallest among public community colleges.
 - Between 2002 and 2005, net tuition revenue increased by an average of \$383 per student in public research universities, \$313 in public master’s institutions, and \$124 in public community colleges.
 - However, even when state appropriations per FTE student increased in 2006, net tuitions continued to rise—albeit at a slower rate than previous years: \$269 in public research universities, \$134 in public master’s institutions, and \$75 in public community colleges.
- Private research universities clearly have more funds per student than any other sector, public or private. Their revenues from private gifts, investment returns, and endowments (\$35,755 per FTE student) were considerably higher than any other institutional group, public or private, in 2006.

Information about changes in tuition revenues is presented using three metrics: 1) the sticker price—or the average full-pay tuition and fees charged to in-state undergraduate students; 2) gross tuition revenue; and 3) net tuition revenue. Differences between the three categories tell a good deal about pricing and discounting policies within institutions (*see Figure 5, next page*).

- Among public institutions, sticker prices routinely increased *less* than gross tuition revenues. This happens because more public institutions are using differential pricing to capture greater increases in tuition from students other than in-state undergraduates. These higher tuitions can come from out-of-state students and international students, or from professional schools such as business, law and engineering where full-cost pricing is increasingly common. Institutions are also turning to user fees to fund many functions (e.g., technology fees), which have become a significant source of revenue. This means that focusing on sticker price increases alone understates the real impact of price increases for many students.

Figure 5

Pricing and discounting practices within institutions

Average undergraduate sticker price, gross and net tuition revenue per FTE student, 2002-2006, with 2002-2005 average annual change and 2005-2006 change (in 2006 dollars)

	2002	2005	2006	2002-5 average annual change	2005-6 change
Public research sector					
Sticker price	\$4,486	\$5,661	\$5,825	\$392	\$163
Gross tuition revenue	\$6,456	\$7,864	\$8,199	\$469	\$335
Net tuition revenue	\$5,322	\$6,472	\$6,741	\$383	\$269
Tuition discount rate	17%	17%	17%	0%	0%
Public master's sector					
Sticker price	\$3,652	\$4,545	\$4,710	\$298	\$165
Gross tuition revenue	\$4,501	\$5,462	\$5,644	\$320	\$182
Net tuition revenue	\$3,931	\$4,869	\$5,004	\$313	\$134
Tuition discount rate	14%	11%	11%	-1%	0%
Public community college sector					
Sticker price	\$2,218	\$2,556	\$2,619	\$113	\$63
Gross tuition revenue	\$2,454	\$2,811	\$2,911	\$119	\$100
Net tuition revenue	\$2,246	\$2,618	\$2,693	\$124	\$75
Tuition discount rate	11%	9%	10%	-1%	1%
Private research sector					
Sticker price	\$23,497	\$25,773	\$26,468	\$759	\$695
Gross tuition revenue	\$23,859	\$25,546	\$25,952	\$562	\$406
Net tuition revenue	\$17,570	\$18,456	\$18,555	\$295	\$99
Tuition discount rate	26%	27%	28%	0%	1%
Private master's sector					
Sticker price	\$16,429	\$18,070	\$18,571	\$547	\$501
Gross tuition revenue	\$15,572	\$16,916	\$17,197	\$448	\$281
Net tuition revenue	\$11,766	\$12,635	\$12,736	\$290	\$101
Tuition discount rate	24%	25%	25%	0%	0%
Private bachelor's sector					
Sticker price	\$17,162	\$18,787	\$19,301	\$542	\$514
Gross tuition revenue	\$16,614	\$18,193	\$18,636	\$526	\$443
Net tuition revenue	\$11,279	\$12,097	\$12,307	\$272	\$210
Tuition discount rate	32%	32%	33%	0%	1%

Source: Delta Cost Project IPEDS database, 20-year matched set.

- At private institutions, tuition revenue patterns are the reverse of those in the public sector, and sticker prices routinely increase more rapidly than either gross or net tuition revenues.
- Among public institutions, increases in net tuition revenues range between 73 percent and 82 percent of gross tuition revenues. In contrast, private institutions captured about half of tuition increases in net revenue. The remainder went to some form of discounting.

Another prominent trend in the past two decades has been growing use of “tuition discounting” as a recruitment tool and as a mechanism for generating funds for student aid. Tuition discounting is a practice whereby only some students pay the full published tuition, or sticker price; other students are offered a price discount. Discounts are estimated by evaluating the difference between gross and net tuition revenues and by examining how these, in turn, compare to sticker prices.

- Use of tuition discounting remained fairly low and stable at public research institutions and decreased at public master’s institutions and community colleges between 2002 and 2005. Tuition discounting is more prevalent among private institutions, although overall rates of discounting in that sector have also been fairly stable since 2002.

Where does the money go?

Spending trends. To analyze spending patterns over time, data are first presented in standard expense categories used by all institutions, and then in a set of analytical metrics derived from the core data. All institutions report spending using standard formats in IPEDS that assign expenses to core activities such as instruction, research, student services, administration, and maintenance, among others (*see “Where the money goes: Standard expense categories” on page 19 for expense category definitions*). These spending categories have been fairly consistent over time and are reasonably comparable at the aggregate level among different types of institutions.

Changes in spending in these areas for the 2002 to 2006 period are shown in Figure 6 (*see next page*); detailed presentations of total spending per student for the intervening years are provided in the appendix. The data show that spending in public institutions declined in most areas between 2002 and 2005, but rebounded in 2006. Private institutions also experienced declines between 2002 and 2005, although the rebound patterns in 2006 are more varied than for the public sector.

- Among public institutions, spending per student for instruction declined between 2002 and 2005, most dramatically in public community colleges. When state funds increased in 2006, instructional spending increased as well, but not enough to make up for losses in prior years.
- Spending for instruction also declined for private master’s and bachelor’s institutions between 2002 and 2005, but grew slightly among private research institutions.

Figure 6**Spending in most sectors declined in 2002–2005 and then rebounded in 2006**

Average annual percent change in mean spending per FTE student, 2002–2006 (in 2006 dollars)

Public research sector	2002–2005		2005–2006	
	\$ change	% change	\$ change	% change
Instruction	-\$56	-0.6%	\$157	1.8%
Sponsored research	\$143	2.8%	-\$80	-1.5%
Public service	\$7	0.4%	-\$29	-1.6%
Academic support	-\$7	-0.3%	\$83	3.7%
Student services	-\$1	-0.1%	\$34	2.9%
Institutional support	-\$11	-0.5%	\$95	4.7%
Operation/maintenance	\$15	0.8%	\$128	6.8%
Net scholarships and fellowships*	-\$26	-2.4%	\$7	0.6%

Public master's sector	2002–2005		2005–2006	
	\$ change	% change	\$ change	% change
Instruction	-\$55	-1.0%	\$72	1.3%
Sponsored research	-\$1	-0.2%	-\$8	-1.9%
Public service	-\$10	-1.7%	\$12	2.1%
Academic support	-\$4	-0.3%	\$19	1.5%
Student services	-\$1	-0.1%	\$10	0.8%
Institutional support	-\$27	-1.5%	\$47	2.7%
Operation/maintenance	\$6	0.4%	\$84	5.8%
Net scholarships and fellowships*	-\$79	-8.0%	-\$12	-1.5%

Public community college sector	2002–2005		2005–2006	
	\$ change	% change	\$ change	% change
Instruction	-\$95	-2.0%	\$149	3.3%
Sponsored research	-\$7	-12.6%	\$23	52.4%
Public service	-\$15	-4.1%	\$5	1.4%
Academic support	-\$30	-3.4%	\$27	3.3%
Student services	-\$9	-0.8%	\$31	2.8%
Institutional support	-\$29	-1.8%	\$73	4.7%
Operation/maintenance	-\$18	-1.7%	\$82	7.9%
Net scholarships and fellowships*	-\$114	-9.7%	-\$63	-6.5%

Private research sector	2002–2005		2005–2006	
	\$ change	% change	\$ change	% change
Instruction	\$139	0.7%	\$69	0.4%
Sponsored research	\$322	3.0%	-\$167	-1.5%
Public service	-\$1	-0.1%	-\$127	-9.1%
Academic support	-\$74	-1.4%	\$246	4.9%
Student services	-\$5	-0.2%	\$178	6.2%
Institutional support	-\$1	0.0%	\$149	2.4%
Operation/maintenance	\$35	0.8%	\$315	7.5%
Net scholarships and fellowships*	\$62	4.5%	-\$311	-20.6%

Private master's sector	2002–2005		2005–2006	
	\$ change	% change	\$ change	% change
Instruction	-\$124	-1.8%	\$25	0.4%
Sponsored research	-\$57	-6.9%	-\$86	-12.0%
Public service	-\$56	-10.0%	-\$22	-4.9%
Academic support	-\$27	-1.7%	\$5	0.3%
Student services	-\$29	-1.2%	\$70	3.0%
Institutional support	-\$42	-1.2%	-\$28	-0.8%
Operation/maintenance	\$29	1.7%	\$47	2.7%
Net scholarships and fellowships*	-\$67	-5.4%	-\$283	-25.5%

Private bachelor's sector	2002–2005		2005–2006	
	\$ change	% change	\$ change	% change
Instruction	-\$100	-1.3%	\$5	0.1%
Sponsored research	\$7	1.1%	-\$5	-0.8%
Public service	-\$25	-3.8%	-\$40	-6.5%
Academic support	-\$37	-1.9%	\$14	0.7%
Student services	-\$20	-0.6%	\$98	3.1%
Institutional support	-\$103	-2.2%	\$162	3.6%
Operation/maintenance	-\$69	-2.5%	\$55	2.1%
Net scholarships and fellowships*	-\$120	-4.3%	-\$1,080	-42.5%

*Note: Net scholarships and fellowships represent only a small portion of spending on student aid because it is net of allowances (e.g., “residual” student aid that is not applied to tuition or auxiliary services). Though tuition discounts are not considered an expenditure under accounting standards, they provide a better measure of changes in “spending” on institutional aid than do scholarships and fellowships net of allowances.

Source: Delta Cost Project IPEDS database, 20-year matched set.

Where the money goes: Standard expense categories

- **Instruction:** Activities directly related to instruction, including faculty salaries and benefits, office supplies, administration of academic departments, and the proportion of faculty salaries going to departmental research and public service.
- **Research:** Sponsored or organized research, including research centers and project research. These costs are typically budgeted separately from other institutional spending, through special revenues restricted to these purposes.
- **Public service:** Activities established to provide noninstructional services to external groups. These costs are also budgeted separately and include conferences, reference bureaus, cooperative extension services and public broadcasting.

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- **Student services:** Noninstructional, student-related activities such as admissions, registrar services, career counseling, financial aid administration, student organizations and intramural athletics. Costs of recruitment, for instance, are typically embedded within student services.
- **Academic support:** Activities that support instruction, research and public service, including libraries, academic computing, museums, central academic administration (dean's offices), and central personnel for curriculum and course development.
- **Institutional support:** General administrative services, executive management, legal and fiscal operations, public relations and central operations for physical operation.
- **Scholarships and fellowships net of allowances:** Institutional spending on scholarships and fellowships net of allowances does not include federal aid, tuition waivers or tuition discounts (which since 1998 have been reported as waivers); it is a residual that captures any remaining aid after it is applied to tuition and auxiliaries.
- **Plant operation and maintenance:** Service and maintenance of the physical plant, grounds and buildings maintenance, utilities, property insurance and similar items. For private institutions only, capital depreciation costs were excluded prior to 1998, so recent trend data are not strictly comparable with data from that period.
- **Auxiliary enterprises and hospitals and clinics:** User-fee activities that do not receive general support. Auxiliary enterprises include dormitories, bookstores and meal services.

- Spending for sponsored research and public services shows greater variability in both public and private institutions across years; this is to be expected because of the nature of contract and grant funding.
- Though scholarships and fellowships net of allowances generally declined in both public and private institutions, this only captures a small portion of spending on institutional aid, and tuition discounts provide a better measure of these trends.

To better understand overall spending patterns among institutions, expenditures per FTE student are further organized into three measures:

1. **Education and related (E&R) expenses** includes all spending for instruction and student services, plus a portion of spending on academic and institutional support and for operations and maintenance of buildings. E&R spending is sometimes also called a "full cost of education" measure. It includes spending from all revenue sources, for all students including undergraduates, graduates and others, and all courses of instruction across types of disciplines, and thus

represents average institutional spending across these sectors. Within any institution, there can be considerable variations in costs within this average, with lower spending on average for undergraduates than graduates, as well as considerable variation by discipline.

2. **Education and general (E&G) spending** includes spending from all sources of revenue for all activities other than auxiliary enterprises and hospitals. The difference between E&R and E&G spending per student is largely explained by sponsored research and public service.
3. **Total operating expenses (OE) per student** captures all spending, including auxiliaries and hospitals. Total operating expenditures are rarely used to measure costs, although it is a figure that is prominently displayed in budget presentations to trustees and to state legislatures. It is most pertinent because of the large amount of economic activity in some institutions in auxiliaries and hospitals.

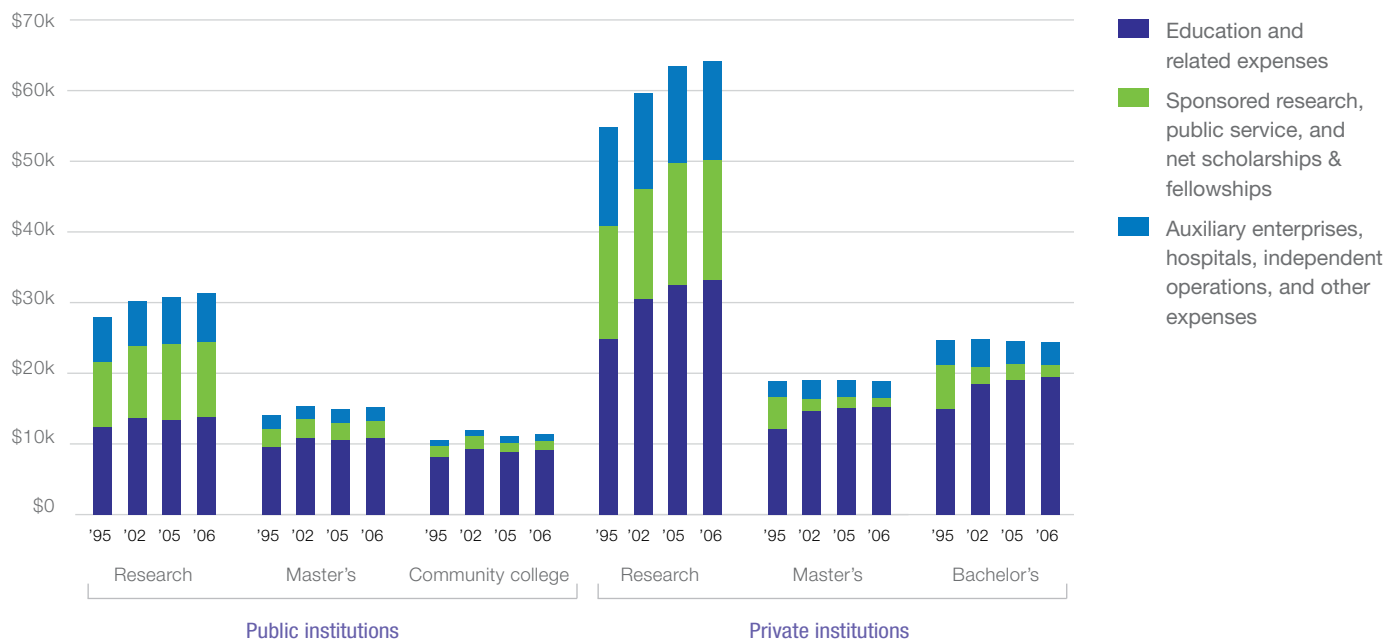
Spending patterns within these three categories over the past decade show that in public institutions, spending on E&R functions was relatively steady and that overall spending differences across sectors are largely attributable to non-educational activities (see Figure 7). Among private institutions, spending differences are more disparate in each of these three major categories.

- Research universities in both the public and private sectors surpass other types of institutions in total spending per FTE student. Spending at private research institutions, however,

Figure 7

Spending differences are largely attributable to non-educational activities

Average total operating expenses per FTE student by category, 1995, 2002, 2005, and 2006 (in 2006 dollars)

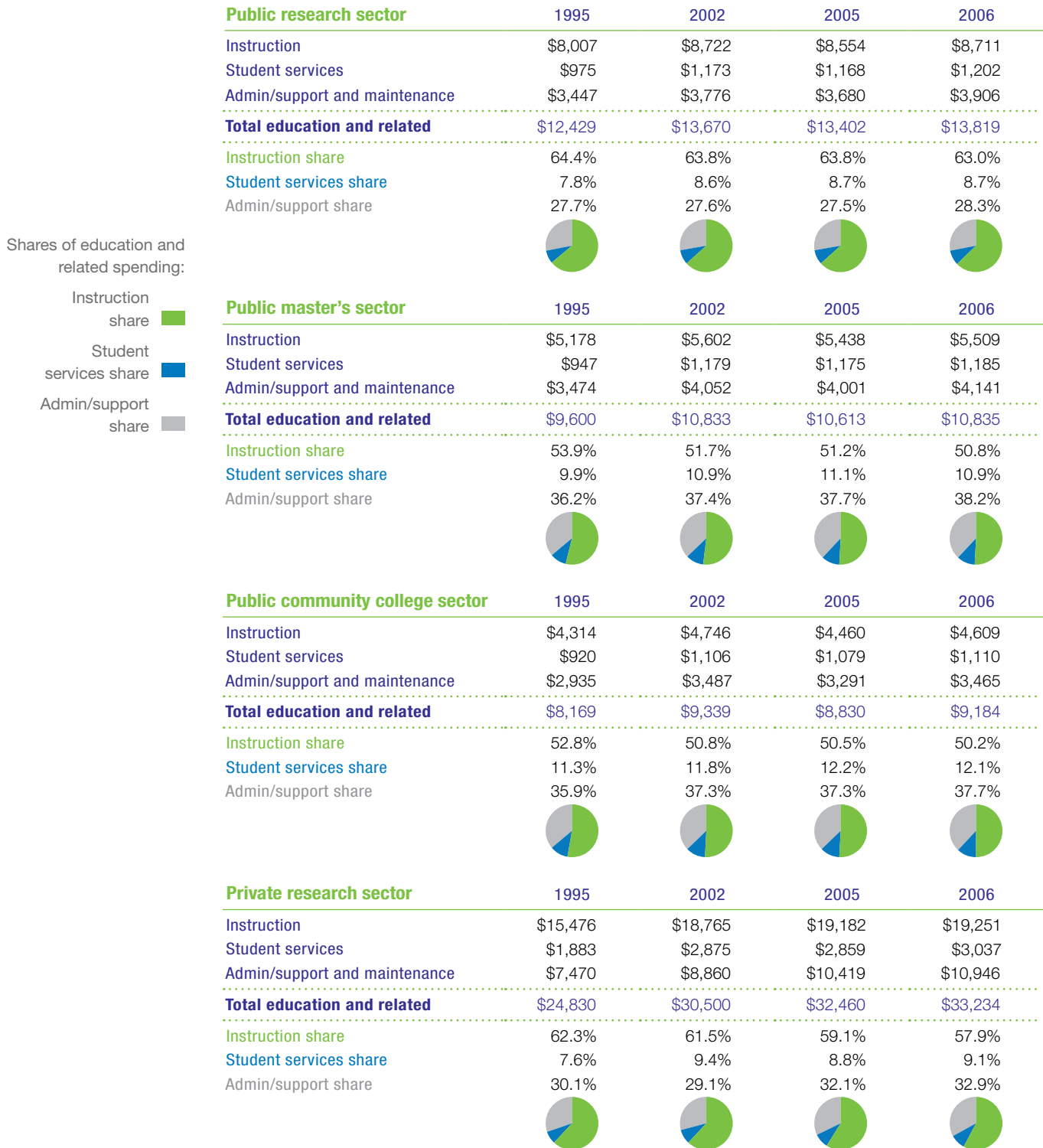


Source: Delta Cost Project IPEDS database, 20-year matched set.

Figure 8

Spending within education and related category

Elements of education and related spending per FTE student, 1995, 2002, 2005, and 2006 (in 2006 dollars)



Private master's sector	1995	2002	2005	2006
Instruction	\$5,424	\$6,890	\$6,520	\$6,545
Student services	\$1,683	\$2,398	\$2,311	\$2,381
Admin/support and maintenance	\$4,958	\$5,350	\$6,277	\$6,312
Total education and related	\$12,065	\$14,631	\$15,108	\$15,238
Instruction share	45.0%	47.1%	43.2%	43.0%
Student services share	13.9%	16.4%	15.3%	15.6%
Admin/support share	41.1%	36.6%	41.6%	41.4%
Private bachelor's sector	1995	2002	2005	2006
Instruction	\$6,074	\$7,830	\$7,529	\$7,534
Student services	\$2,273	\$3,274	\$3,213	\$3,311
Admin/support and maintenance	\$6,569	\$7,361	\$8,284	\$8,566
Total education and related	\$14,906	\$18,457	\$19,026	\$19,392
Instruction share	40.7%	42.4%	39.6%	38.9%
Student services share	15.2%	17.7%	16.9%	17.1%
Admin/support share	44.1%	39.9%	43.5%	44.2%

Source: Delta Cost Project IPEDS database, 20-year matched set.

far exceeds that of their public counterparts. In 2006, private research universities' total operating expenses per FTE student averaged \$64,000, while public research universities spent a little over \$31,000.

- In both public and private research universities, sponsored research and its related support expenses increased more between 2002 and 2006 than any other expense—despite variations from year to year in this area.
- Spending on public service and its related support activities decreased between 2002 and 2006 in all public and private institutions except public research institutions. Yet spending in this area was higher in 2006 than in 1995 for all institutional groups except private research universities.

Spending patterns within the subcategories of education and related costs (*see Figure 8*) show more clearly what has happened to spending on instruction relative to student services, academic and administrative support, and building maintenance.

- In the public sector, instruction as a proportion of E&R spending declined in all types of institutions between 2002 and 2006, a trend evident since 1995. Among public research universities, the instructional share declined by 1.4 percentage points between 1995 and 2006; among public master's institutions by 3.1 percentage points, and by 2.6 percentage points

among public community colleges. Even as spending increased between 2005 and 2006, the instructional share of E&R costs declined as spending increased more rapidly in other areas.

- In public institutions, spending on student services and on administrative and academic support increased fairly consistently since 1995, both as a proportion of spending and in absolute terms. The greatest overall increases have been in academic and institutional support—a category that includes computing, libraries, general administration and maintenance.
- The instructional share of education and related spending also declined in private institutions between 2002 and 2006, and the 2006 share is now lower than in 1995. Between 1995 and 2006 the instructional share declined by 4.4 percentage points in private research institutions, by 2.0 percentage points among master’s institutions, and by 1.8 percentage points in bachelor’s institutions. However, the declines at private research institutions, unlike those for all other institutions, are relative declines—absolute spending increased on instruction between 2002 and 2006, just more slowly than increases in student services and academic and administrative support.

Spending and tuition

In higher education, tuitions go up for two basic reasons: to pay for real increases in overall spending, or to substitute for revenue declines elsewhere in an institution’s budget. This latter practice—increasing tuitions to offset reductions in other revenues—is sometimes called cost shifting. Previous research³ has shown that cost shifting is a common practice among public institutions, where tuition increases often compensate for reductions in state and local appropriations. Although it is a common practice, it is not the case that tuition increases are inevitable when state funds are cut; institutions can choose to reduce spending when faced with budget cuts. But these cuts in spending can also mean reducing programs or cutting access to students.

To understand whether real increases in spending or cost shifting is driving tuition increases, Figure 9 presents a “what if” analysis to show what tuition levels would have been if they had only been used to cover spending increases.

- In all institutional groupings—public and private—tuition prices increased faster than education and general spending per student. This suggests that both public and private institutions are becoming more dependent on tuition as a source of general revenue—not just to pay for education and related expenses, but as a general subsidy for all functions, including research and service.

³ See *Straight Talk About College Costs and Prices*, the NCES report on trends in college expenditures, and the *State Higher Education Finance* report on trends in state support for higher education. *Straight Talk About College Costs and Prices*. 1998. Washington, DC: American Council on Education; *State Higher Education Finance: FY2007*. 2008. Boulder, CO: State Higher Education Executive Officers.

Figure 9

What's driving tuition increases—spending or cost shifting?

Comparing average tuition and education and general spending per FTE student, 2002–2006 (in 2006 dollars)

	2002	2006	Percent change 2002–2006
Public research sector			
In-state average tuition for full-time undergraduates	\$4,486	\$5,825	29.8%
Education and general spending per FTE student	\$23,812	\$24,411	2.5%
If tuition increased only at spending rate (2002–2006)		\$4,599	
Percent of tuition increase attributed to increased spending		8.4%	
Public master's sector			
In-state average tuition for full-time undergraduates	\$3,652	\$4,710	29.0%
Education and general spending per FTE student	\$13,425	\$13,141	-2.1%
If tuition increased only at spending rate (2002–2006)		\$3,574	
Percent of tuition increase attributed to increased spending		n/a	
Public community college sector			
In-state average tuition for full-time undergraduates	\$2,218	\$2,619	18.1%
Education and general spending per FTE student	\$11,068	\$10,416	-5.9%
If tuition increased only at spending rate (2002–2006)		\$2,087	
Percent of tuition increase attributed to increased spending		n/a	
Private research sector			
In-state average tuition for full-time undergraduates	\$23,497	\$26,468	12.6%
Education and general spending per FTE student	\$45,647	\$49,801	9.1%
If tuition increased only at spending rate (2002–2006)		\$25,635	
Percent of tuition increase attributed to increased spending		72.0%	
Private master's sector			
In-state average tuition for full-time undergraduates	\$16,429	\$18,571	13.0%
Education and general spending per FTE student	\$15,773	\$16,037	1.7%
If tuition increased only at spending rate (2002–2006)		\$16,704	
Percent of tuition increase attributed to increased spending		12.8%	
Private bachelor's sector			
In-state average tuition for full-time undergraduates	\$17,162	\$19,301	12.5%
Education and general spending per FTE student	\$19,999	\$20,373	1.9%
If tuition increased only at spending rate (2002–2006)		\$17,483	
Percent of tuition increase attributed to increased spending		15.0%	

Source: Delta Cost Project IPEDS database, 20-year matched set.

- The differences between tuition and spending increases are much greater in public sector institutions than in the private sector.
 - While tuition increased 29.8 percent among public research universities between 2002 and 2006, E&G spending only rose 2.5 percent.
 - Increases in E&G spending for public master's institutions and community colleges actually declined during this time period, by 2.1 and 5.9 percent, respectively. Tuition, however, increased by 29.0 percent in public master's institutions and 18.1 percent in public community colleges.
- In public research universities, about 92 percent of the increase in student tuitions since 2002 can be attributed to shifts in revenue, while 8 percent went to actual increases in spending. In public master's institutions and community colleges, all of the tuition increases replaced other revenues, as spending actually declined. Put another way, among public research institutions, prices are increasing more rapidly than costs, while at public master's institutions and community colleges, costs are declining while prices are increasing.
- Private institutions are both raising tuition *and* increasing spending. Among private research universities, a large proportion of the increase in tuition—about 72 percent—appears to be tied to changes in E&G spending. A proportion of the tuition increase in private master's and private bachelor's institutions can also be linked to increases in spending—about 13 and 15 percent, respectively. These are similar to the levels of spending increases among public research universities.

Spending and subsidies

Unlike businesses that charge more than the cost of the product in order to make a profit (i.e., cost is less than price), not-for-profit colleges and universities typically charge students less in tuition than what they spend per student in education and related expenses. A general institutional subsidy provides the difference between E&R costs and revenue from tuition.

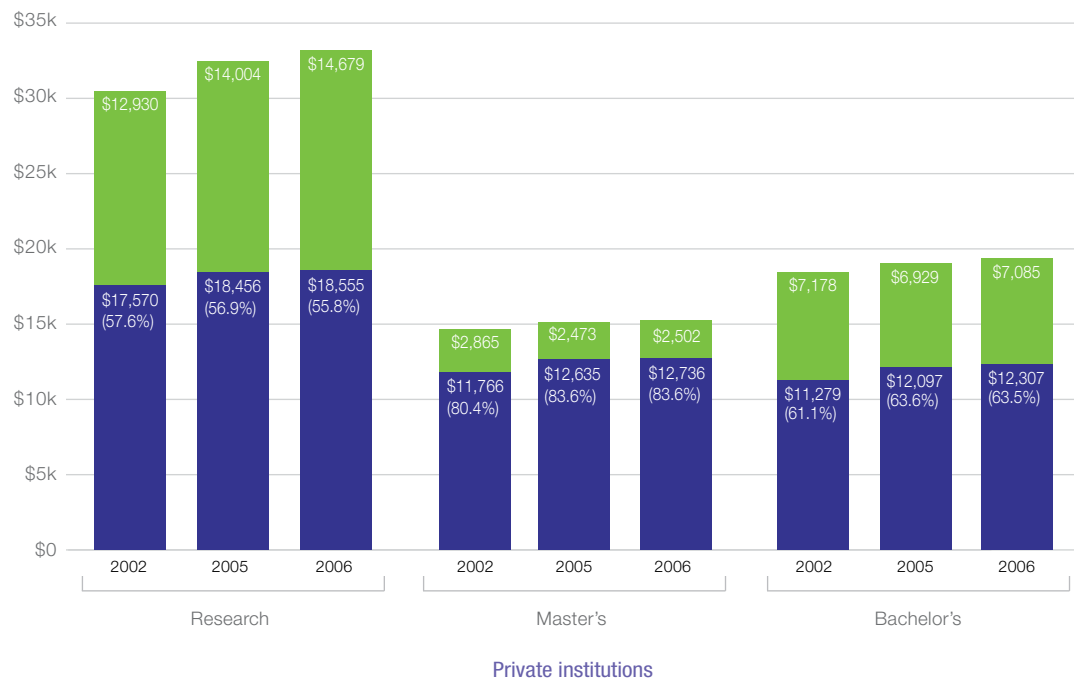
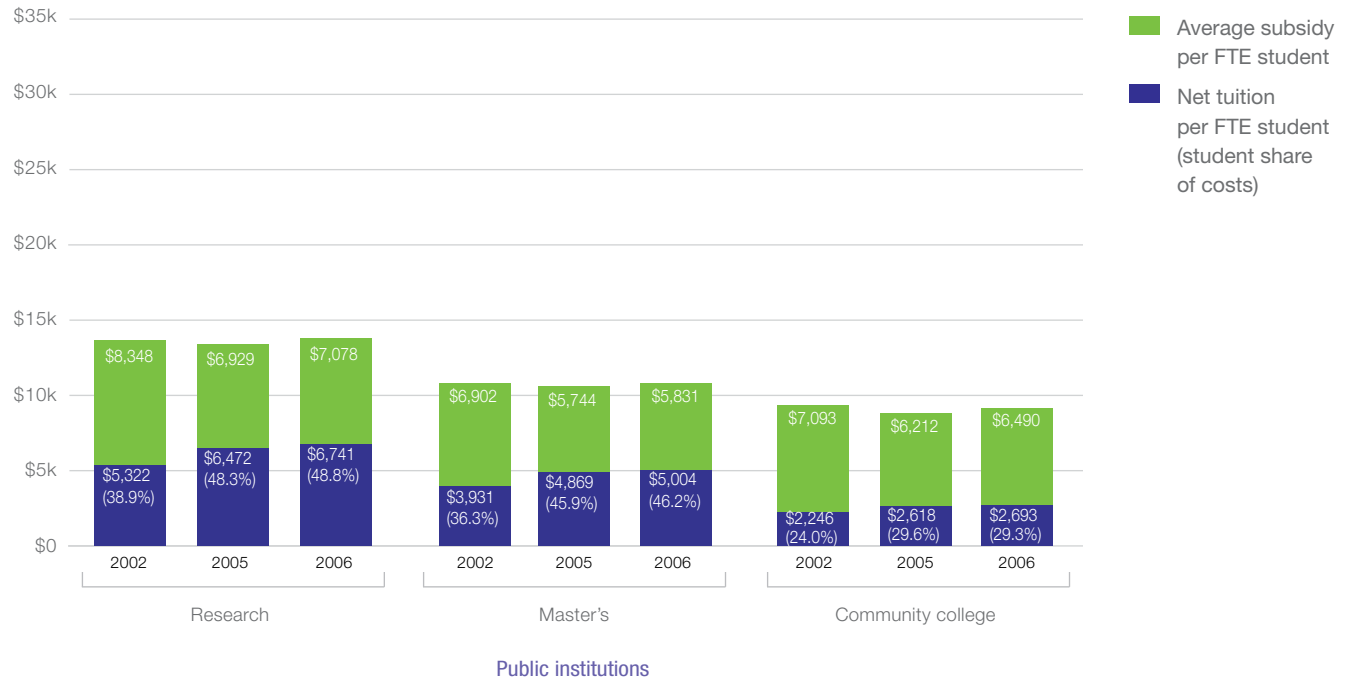
Public institutions receive much of their subsidy from state and local appropriations, whereas private institutions receive subsidies from all other non-tuition revenues—primarily private gifts, investment and endowment earnings. Subsidies are examined here by looking at the difference between what it costs to provide the education (e.g., the full E&R cost) and net tuition. Figure 10 shows trends in higher education subsidies from 2002 to 2006, by dividing E&R spending into the portion subsidized by the institution, and the amount paid from student tuition revenues.

- For students in public research and master's institutions, tuition covered almost one-half of their E&R costs in 2006, up about 10 percentage points since 2002. The state subsidy per student is still much higher on average for public research universities than in either the master's or community college sectors. On average, states subsidized roughly \$7,100 per

Figure 10

Trends in higher education subsidies: 2002–2006

E&R spending per FTE student, by net tuition and subsidies, 2002, 2005, and 2006 (in 2006 dollars)



Source: Delta Cost Project IPEDS database, 20-year matched set.

student per year for students enrolled in public research universities, versus an average of \$5,800 in the master's institutions, and \$6,500 in public community colleges. Community college students pay about 30 percent of their total E&R costs—an increase since 2002, but still much less as a share of costs than in other public institutions.

- The student share of E&R costs is much higher among all types of private institutions—ranging from a low of 56 percent of E&R costs in research institutions to a high of 84 percent among master's institutions. The student share of E&R costs has risen since 2002 among private master's and bachelor's institutions, but at a lower rate than in the public sector. Private research institutions are the only sector where the student share of costs decreased, dropping from 58 percent to 56 percent.

State-level patterns for public sector institutions

Across the states, public higher education finance varies considerably depending on numerous factors, including what is appropriated per student, what is spent, what portion of E&R expenses students are asked to cover, and how much of a subsidy institutions provide students. Focusing only on public research institutions, Figure 11 provides a snapshot of state subsidy patterns.⁴

- E&R spending in Minnesota's public research institutions is the highest of all states, about \$21,400 per student. Only two other states, Pennsylvania and Connecticut, also spend more than \$20,000 per student in the research sector.
- The lowest E&R spending per FTE student in public research universities occurs in Montana, at about \$8,900 per student.

The portion of education and related expenses covered by tuition also varies considerably across the states and is not necessarily related to E&R spending levels:

- Vermont ranks first in the portion of E&R expenses covered by student tuition. Only 17 percent of E&R expenses are subsidized by state appropriations and other revenues; the remaining 83 percent of the cost is financed by student tuition.
- Among states that ranked the highest in E&R spending per FTE student, those students attending public research universities in Minnesota and Connecticut pay about 44 percent of the average E&R costs, whereas students in Pennsylvania pay about 65 percent of the costs.

Spending and outcomes

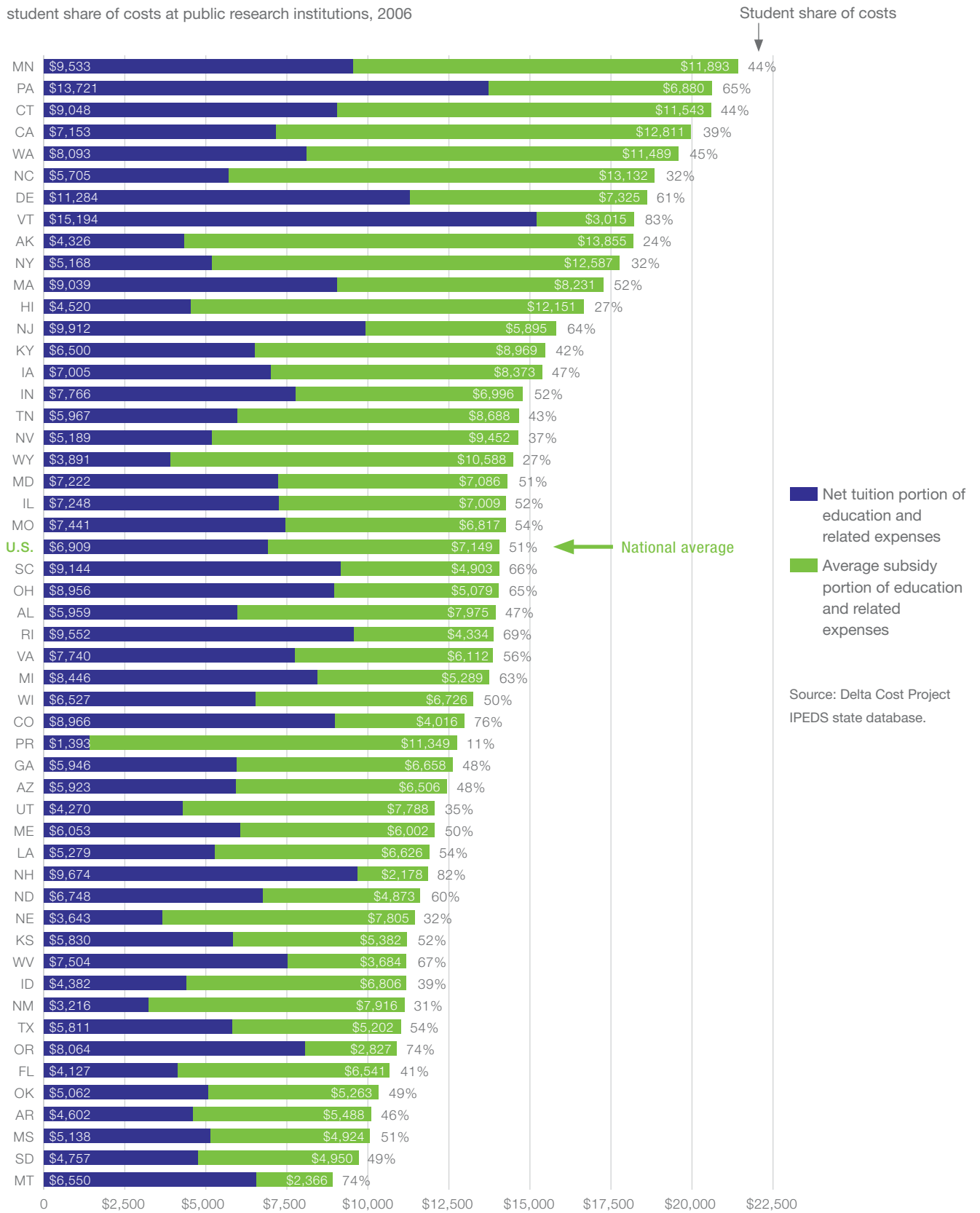
Providing service at a lower cost without reducing quality is a guiding principle in the business world. While, traditionally, higher education has not aspired to such a goal, the current fiscal

⁴ More detailed profiles of state-level subsidy patterns, including subsidy patterns between the different institutional groupings in the public sector, are shown for each state on the Delta Cost Project website (www.deltacostproject.org).

Figure 11

A snapshot of state subsidy patterns for education and related expenses

Average education and related expenses per FTE student and student share of costs at public research institutions, 2006



environment will force this to become a higher priority in almost every institution. Thus, the relationship between spending and higher education outcomes needs to be examined—a tall order, given the weak state of metrics for educational outcomes, much less the connection between spending and outcomes.

One possible metric of degree performance—avoiding the question of quality entirely—is to look at the number of degrees or completions relative to student enrollment.⁵ This is a different calculation than the “cohort graduation rate” figure, which only captures graduation rates for first-time, full-time freshmen, and does not include transfer degrees or graduate and professional degrees.

Like all IPEDS figures, the metric of degrees or completions relative to student enrollment is an aggregate of awards for all levels of instruction, and does not tell us anything about changes that may have occurred in the types of degrees or certificates being awarded. However, the reporting category has been quite stable over time, and can be used as one way to look at spending in relation to degree and certificate production (*see Figure 12*).

- Degrees, as well as completions, per 100 FTE students increased modestly among all institutional groups (except private master’s) between 2002 and 2006.
- Private research and private master’s institutions have higher rates of degrees and completions per 100 FTE students than other types of institutions.
- Completion rates per 100 students enrolled for public community colleges are roughly comparable to those of public master’s institutions, and both are just slightly lower than those in

Figure 12

Degrees and completions relative to student enrollment

Total degrees and completions per 100 FTE students enrolled, 2002, 2005, and 2006

	Degrees			Completions		
	2002	2005	2006	2002	2005	2006
Public research	23	24	25	23	25	25
Public master’s	22	23	23	22	23	23
Public community college	15	15	15	22	24	24
Private research	30	31	31	31	31	32
Private master’s	30	30	30	31	31	31
Private bachelor’s	22	23	23	23	23	24

Source: Delta Cost Project IPEDS database, 20-year matched set.

⁵ “Degrees” measures all degrees awarded (from Associate’s to Ph.D.), while “completions” includes all degrees as well as other awards, such as certificates and diplomas.

public research institutions. If, however, comparisons are made based on degrees produced alone, then public community colleges produce significantly fewer degrees per 100 students enrolled than other sectors. There are many reasons for this, including that the majority of students transferring from community colleges to four-year institutions do not obtain an associate's degree first.

Relating E&R spending to outcomes shows that spending per degree is similar to spending per completion for all groups except public community colleges (*see Figure 13, next page*). Because degree production rates are relatively low in community colleges, the cost per degree is much higher than the cost per completion.

- Trends in aggregate spending per degree and completion show that costs per unit of output for the public community colleges are quite stable over the entire 1995 to 2006 period, despite declines between 2002 and 2005. Spending per completion in the public research and master's institutions has increased slightly since 1995, but has declined since 2002.
- Among private nonprofit institutions, spending per degree and per completion have increased in the private research and master's sectors since 2002, while remaining quite steady among private bachelor's institutions.

The figures on spending in relation to completion must be considered just a starting place for a deeper inquiry into ways to look at degree productivity. Decreases in spending per degree could be explained by a number of factors, some of which might be actual increases in productivity (such as reductions in credits earned that exceed degree requirements), and some of which might be because the institution has sacrificed quality. This is an important area where much more research needs to be done, including better ways to connect spending data to data about student learning outcomes.

Summary:

What we know about trends in higher education spending

This report highlights a number of key issues related to recent trends in how colleges spend their money, a topic often avoided by institutional leaders and policy makers. Lack of "good" data and a myopic focus on revenues have distracted attention from this important topic.

Trends in College Spending: Where Does the Money Come From? Where Does It Go? attempts to increase general understanding, awareness and interest in the topic of college spending patterns by showing the connections between enrollments, revenue, spending and results.

So what have we learned?

- **Spending and enrollments.** Spending is increasing in some higher education institutions, but not in the places where the majority of students enroll. Higher education is becoming more stratified. The fastest growth in enrollment has occurred in those institutions with the least resources and with the greatest evidence of actual spending cuts in the last few years—the

Figure 13

Spending per degree is similar to spending per completion for all groups except public community colleges

Total education and related (E&R) spending per institution by degrees and completions, 1995, 2002, 2005 and 2006 (in 2006 dollars)



Source: Delta Cost Project IPEDS database, 20-year matched set.

public community colleges. In 2006, these colleges enrolled about 6 million students, more than any other institutional group, and the average E&R cost per FTE was less than \$10,000, an amount less than any other type of college or university (see Figure 14). Community colleges also tend to enroll students needing additional preparation for college-level work. A recent survey indicates that, in about half the states, community

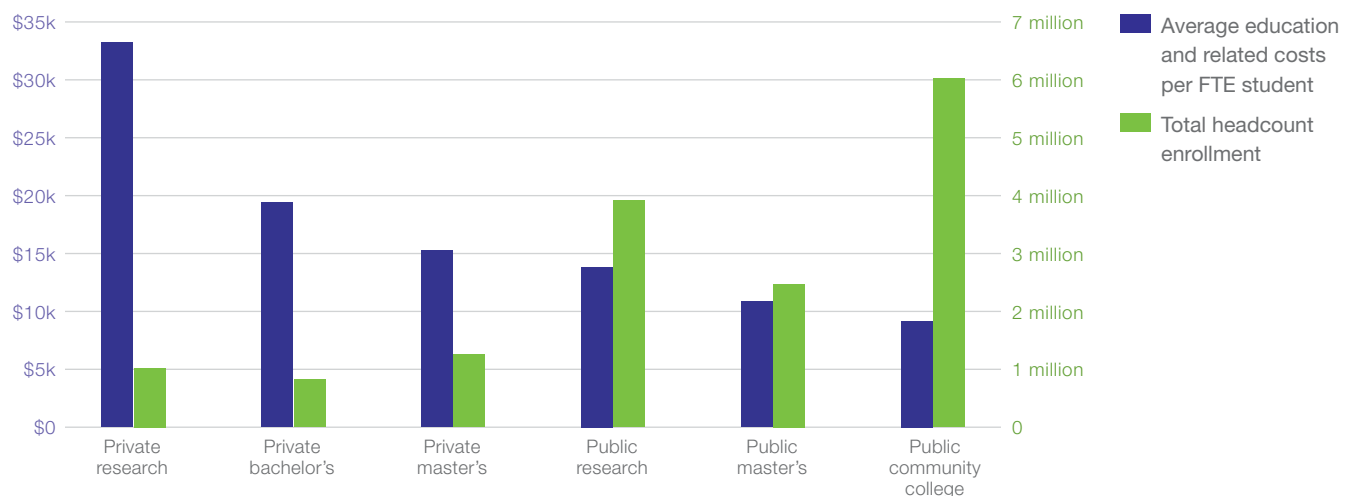
colleges are likely to face midyear reductions in their appropriations;⁶ the same economic crisis behind these reductions is also increasing demand on community colleges as students are pushed out of higher-priced institutions.

- **Revenues and spending.** The tuition share of revenues continues to increase in public institutions. Increases were steepest between 2002 and 2005, when state funds per student declined. In 2006, state and local appropriations per student in public institutions increased by at least 4 percent. Tuitions still increased, although at a rate comparable to private institutions. Outside of tuition revenues, the largest growth in revenues has been for research, public service, and auxiliary enterprises—categories that benefit the research universities and, to a lesser extent, private bachelor’s institutions. Along with shifting revenue sources, there has been a change in functionality—away from education and related services, toward contracted research and service.
- **Instructional and operational spending.** The education and related share of total operating spending has increased in public and private non-research institutions since 2002, although it has decreased slightly in the public research sector and has remained steady in private research institutions. Direct instruction expenses have consistently declined as a proportion of education and related spending, relative to spending increases in student services, academic support, administration and maintenance. The deepest reductions in spending

Figure 14

Money vs. students

Average education and related spending per student vs. enrollment, by institutional group, 2006



Source: Delta Cost Project IPEDS database (education and related spending from 20-year matched set; enrollment from unmatched set).

⁶ Selingo, Jeffrey. "State Budgets Are Likely to Squeeze 2-Year Colleges." *Chronicle of Higher Education*, November 7, 2008.

for instruction occurred among the “teaching” institutions in the public sector – e.g., public and private master’s institutions, private bachelor’s institutions, and community colleges.

- **Spending and tuition increases.** The primary cause of tuition increases in public institutions is *not* increased spending, but rather cost shifting to replace losses in state appropriations and other revenues. In public research institutions, 92 percent of revenues from tuition increases since 2002 have resulted from shifts in costs. In other public institutions, costs are declining even as prices are increasing. Private institutions are both raising tuition and increasing spending. Only about 30 percent of revenues from tuition increases in the private research universities can be attributed to cost shifts, though in private master’s and bachelor’s institutions, about 85 percent of tuition are from cost shifts rather than spending increases.
- **Spending and subsidies.** All institutions can still claim that, on average, students pay less than the full cost of their education. However, the student share of costs is increasing relative to declines from institutional sources in all sectors except private research universities. Subsidies for students in all types of public institutions declined between 2002 and 2006. By 2006, students in public research universities were covering close to half of their educational costs, up from about 39 percent just four years earlier. The share of educational costs covered by tuition increased more slowly in the private institutions. Even so, students who pay the full sticker prices in these institutions, on average, are paying very close to the full cost of their education.
- **Spending and results.** Costs per degree or completion in the public institutions tended to increase between 1995 and 2002 but declined between 2002 and 2006. This is not the case in the private institutions, where costs per degree or completion tended to increase fairly steadily across the entire time period. In both the public and private sectors, the master’s institutions have the lowest relative cost per degree. Recognizing that these figures encompass all types of degrees, from undergraduate to credentials to graduate degrees, the mission of the master’s institutions does translate to greater cost/degree efficiency. Without benchmarks about quality, however, the cost-degree metrics cannot be equated with a measure of productivity.

Conclusion: Using data to connect to policy decisions

For far too long, higher education finance has been a black box. In state legislatures, in institutional governing boards, and inside most institutions, the focus instead is on finding ways to raise the revenues needed to sustain annual increases in the operating budget. The trends documented in this report show that the incremental approach to budget balancing has put our nation on a path of disinvestment in core capacity in much of higher education – a pattern that is only revealed by looking at broad metrics that examine revenues in relation to spending, enrollments, and results.

We are not going to get the performance we need in higher education without better strategic financial decision-making, by state legislatures as well as within institutions, to invest increasingly scarce discretionary resources in essential priorities. To do that, we need

regular, simple, metrics that show how spending matches up with goals and performance. The metrics presented in this report are a starting place for this discussion, and can be readily adapted both by institutions and by states. By putting information into context, they allow decision-makers to see trends in spending that can be the basis for benchmarking, scenario forecasting, and strategic financial planning. If used, they will raise a number of questions that individual states, governing boards and institutions themselves need to ask if costs are indeed going to be contained, tuition increases minimized, and productivity increased.

For measures to make a difference they need to be used to make decisions about spending and performance. That will not happen just because of better national data; it will happen because decision makers use that data to make better decisions. To advance that discussion, we conclude with recommendations to states, boards and institutions about questions they should be asking themselves to make those connections.

Questions for states

1. What are the state's needs for postsecondary access, certificate and degree completion over the next 15 years? What are the gaps between future needs and current production capacity?
2. Do state subsidy patterns align with strategic priorities for degree attainment? Where is the state subsidy per student the greatest, and how does cost per degree or certificate compare across sectors or to other states?
3. Are there ways to reassign future enrollment growth across sectors in ways that will enhance cost effectiveness for state subsidies?
4. Are public institutions participating in effectiveness and efficiency initiatives? If so, what cost savings are accruing on an annual basis?
5. Has the state reviewed policies on the student share of cost, and set goals for appropriate student share of costs for lower-division, upper-division, graduate and professional education?
6. How is institutional aid being awarded (including discounts, grant awards, or tuition waivers) among public institutions? What are the criteria for deciding who gets the aid?
7. Where is student attrition greatest by level of instruction, including lower division, upper division, professional, and graduate? What does this mean about the cost of attrition—to the state and to the students?
8. Does the state provide fiscal or other incentives to institutions or systems to increase student degree attainment?
9. How can cost data be improved, and how can it be embedded within state accountability reports, strategic plans, or other appropriate venues?

Questions for system governing boards

1. How do spending and subsidy patterns differ across campuses within the system?
2. Which campuses seem to be doing the best job of controlling administrative costs, and are there any lessons from them that could be promoted within the system?
3. How do the campuses compare in student attrition by level of instruction? What fiscal incentives do trustees provide to reduce attrition and increase degree attainment?
4. How is evidence about effective cost management used in evaluations of campus-level leadership?
5. What system-level initiatives are underway to increase degree productivity? What are the results, and how are savings being used to fund new priorities?
6. What are system-level policies on institutional grant aid, tuition discounts, and tuition waivers? How are these monitored and publicly reported?
7. How is information about spending communicated within the system, and to public stakeholders?

Questions for campus leadership

1. How do spending and subsidy patterns for your campus compare to relevant comparison institutions, either within the system or region?
2. Are you able to explain why certain categories of expenses are changing (e.g., energy costs, replacement of full-time faculty with part-time faculty, etc.)? Are these consistent with institutional priorities?
3. Are there academic program areas that are increasing spending more rapidly than others, and are these consistent with institutional priorities?
4. What policies are in place to identify low-performing and high-cost programs, and to increase spending effectiveness, whether through consolidation, closure or new investments in areas that are high public priorities?
5. At public institutions, who gets institutional aid, including discounts, grant awards, or tuition waivers? What are the criteria for awarding aid?

Data appendix

Figure A1

Total headcount enrollment by Carnegie Sector, 2002–2006

Sector	2002	2003	2004	2005	2006
Public research	3,679,764	3,802,321	3,860,884	3,886,981	3,911,193
Public master's	2,298,487	2,386,440	2,429,325	2,443,878	2,472,460
Public community college	5,676,536	5,959,773	5,943,316	6,035,652	6,021,767
Private research	961,105	985,259	1,005,590	1,018,483	1,022,677
Private master's	1,129,446	1,173,201	1,200,746	1,241,227	1,258,873
Private bachelor's	737,273	774,277	797,319	811,725	820,539
Private for-profit sector (4-year & 2-year institutions only)	611,899	687,314	799,772	965,281	1,110,291
Other	1,393,720	1,463,885	1,463,555	1,482,836	1,488,090
Total enrollment	16,488,230	17,232,470	17,500,507	17,886,063	18,105,890

Note: "Other" institutions include public baccalaureate, private associate's, specialty, tribal, and all less than 2-year institutions

Source: Delta Cost Project IPEDS database, unmatched set.

Figure A2

Total headcount enrollment by race/ethnicity, 2002–2006

Sector	2002	2003	2004	2005	2006
White	10,281,952	10,582,292	10,711,666	10,824,322	10,861,623
Black	1,805,735	1,921,327	2,007,402	2,087,940	2,132,833
Hispanic	1,739,530	1,844,502	1,891,070	1,978,438	2,053,423
Asian	959,439	1,010,343	1,011,803	1,039,358	1,061,446
American Indian	153,361	160,299	166,862	170,657	170,652
Non-resident	569,755	595,390	603,177	594,759	590,509
Unknown	978,458	1,118,317	1,108,527	1,190,589	1,235,404
Total enrollment	16,488,230	17,232,470	17,500,507	17,886,063	18,105,890

Source: Delta Cost Project fall enrollment by race/ethnicity IPEDS database, unmatched set.

Figure A3

Average revenues per FTE student, 1995 and 2002–2006 (in 2006 dollars)

Public research sector	1995	2002	2003	2004	2005	2006
Net tuition	\$4,532	\$5,322	\$5,628	\$6,120	\$6,472	\$6,741
State and local appropriations	\$9,220	\$9,712	\$8,921	\$8,393	\$8,227	\$8,556
Federal appropriations, grants, and contracts; state and local grants and contracts	\$4,781	\$7,373	\$7,787	\$7,993	\$8,381	\$8,320
Federal appropriations, grants, and contracts	\$4,050	\$5,266	\$5,593	\$5,758	\$6,058	\$5,907
State and local grants and contracts	\$731	\$2,107	\$2,193	\$2,235	\$2,323	\$2,413
Private gifts, grants, investment returns, and endowment earnings	\$1,590	\$1,231	\$1,841	\$1,936	\$2,024	\$2,208
Operating revenue subtotal	\$20,123	\$23,638	\$24,177	\$24,441	\$25,105	\$25,595
Auxiliary enterprises, hospitals, independent and other operations	\$7,106	\$8,397	\$8,215	\$8,491	\$8,835	\$9,068
Total operating revenue	\$27,229	\$32,035	\$32,391	\$32,933	\$33,940	\$34,663
Public master's sector	1995	2002	2003	2004	2005	2006
Net tuition	\$3,350	\$3,931	\$4,231	\$4,644	\$4,869	\$5,004
State and local appropriations	\$6,292	\$7,065	\$6,538	\$6,171	\$6,008	\$6,236
Federal appropriations, grants, and contracts; state and local grants and contracts	\$1,904	\$2,734	\$2,860	\$2,862	\$2,807	\$2,799
Federal appropriations, grants, and contracts	\$1,427	\$1,967	\$2,022	\$2,007	\$1,989	\$1,900
State and local grants and contracts	\$485	\$770	\$841	\$858	\$825	\$907
Private gifts, grants, investment returns, and endowment earnings	\$321	\$345	\$328	\$320	\$353	\$426
Operating revenue subtotal	\$11,855	\$14,076	\$13,957	\$13,997	\$14,038	\$14,386
Auxiliary enterprises, hospitals, independent and other operations	\$2,221	\$2,672	\$2,608	\$2,669	\$2,781	\$2,731
Total operating revenue	\$14,076	\$16,748	\$16,565	\$16,666	\$16,818	\$17,117
Public community college sector	1995	2002	2003	2004	2005	2006
Net tuition	\$1,908	\$2,246	\$2,398	\$2,553	\$2,618	\$2,693
State and local appropriations	\$5,655	\$6,198	\$5,779	\$5,677	\$5,683	\$6,117
Federal appropriations, grants, and contracts; state and local grants and contracts	\$1,955	\$2,784	\$2,960	\$3,039	\$2,871	\$2,841
Federal appropriations, grants, and contracts	\$1,482	\$1,955	\$2,087	\$2,147	\$2,066	\$1,986
State and local grants and contracts	\$505	\$853	\$898	\$921	\$827	\$880
Private gifts, grants, investment returns, and endowment earnings	\$142	\$188	\$178	\$155	\$216	\$268
Operating revenue subtotal	\$9,601	\$11,390	\$11,290	\$11,407	\$11,367	\$11,771
Auxiliary enterprises, hospitals, independent and other operations	\$996	\$1,236	\$1,146	\$1,173	\$1,100	\$1,106
Total operating revenue	\$10,598	\$12,602	\$12,416	\$12,566	\$12,453	\$12,869

Private research sector	1995	2002	2003	2004	2005	2006
Net tuition	\$15,281	\$17,570	\$17,849	\$18,064	\$18,456	\$18,555
State and local appropriations	\$523	\$489	\$976	\$759	\$671	\$744
Federal appropriations, grants, and contracts; state and local grants and contracts	\$9,059	\$10,897	\$11,595	\$12,397	\$12,832	\$12,463
Federal appropriations, grants, and contracts	\$7,949	\$9,919	\$10,628	\$11,407	\$11,821	\$11,466
State and local grants and contracts	\$1,226	\$1,093	\$1,054	\$1,107	\$1,146	\$1,130
Private gifts, grants, investment returns, and endowment earnings	\$7,946	\$4,730	\$16,333	\$32,241	\$32,541	\$35,755
Operating revenue subtotal	\$32,422	\$33,347	\$46,075	\$62,917	\$64,026	\$66,983
Auxiliary enterprises, hospitals, independent and other operations	\$17,058	\$17,181	\$17,685	\$18,475	\$19,353	\$19,869
Total operating revenue	\$49,479	\$50,528	\$63,760	\$81,392	\$83,379	\$86,851
Private master's sector	1995	2002	2003	2004	2005	2006
Net tuition	\$10,077	\$11,766	\$12,080	\$12,346	\$12,635	\$12,736
State and local appropriations	\$405	\$472	\$455	\$438	\$429	\$435
Federal appropriations, grants, and contracts; state and local grants and contracts	\$1,897	\$1,198	\$1,150	\$1,128	\$1,049	\$1,013
Federal appropriations, grants, and contracts	\$1,330	\$883	\$861	\$872	\$804	\$750
State and local grants and contracts	\$712	\$473	\$437	\$382	\$364	\$390
Private gifts, grants, investment returns, and endowment earnings	\$1,811	\$1,965	\$2,695	\$4,414	\$3,885	\$4,267
Operating revenue subtotal	\$13,827	\$14,947	\$15,965	\$17,946	\$17,582	\$18,047
Auxiliary enterprises, hospitals, independent and other operations	\$3,301	\$3,713	\$3,777	\$3,895	\$3,839	\$4,036
Total operating revenue	\$17,128	\$18,660	\$19,711	\$21,771	\$21,394	\$22,030
Private bachelor's sector	1995	2002	2003	2004	2005	2006
Net tuition	\$9,801	\$11,279	\$11,465	\$11,842	\$12,097	\$12,307
State and local appropriations	\$359	\$434	\$331	\$325	\$297	\$369
Federal appropriations, grants, and contracts; state and local grants and contracts	\$2,160	\$1,498	\$1,483	\$1,378	\$1,354	\$1,263
Federal appropriations, grants, and contracts	\$1,522	\$1,111	\$1,131	\$1,108	\$1,085	\$1,000
State and local grants and contracts	\$792	\$645	\$617	\$499	\$496	\$486
Private gifts, grants, investment returns, and endowment earnings	\$4,446	\$3,298	\$6,728	\$13,396	\$10,972	\$12,862
Operating revenue subtotal	\$16,394	\$15,946	\$19,566	\$26,521	\$24,295	\$26,296
Auxiliary enterprises, hospitals, independent and other operations	\$4,946	\$5,354	\$5,319	\$5,857	\$5,397	\$5,606
Total operating revenue	\$21,340	\$21,314	\$24,862	\$32,343	\$29,719	\$31,935

Source: Delta Cost Project IPEDS database, 20-year matched set.

Note: Data may not sum to totals because component data were summed at the institution level prior to calculating aggregate category averages.

Figure A4

Average sticker price, gross and net tuition revenue, and average subsidy per FTE student, 1995 and 2002–2006 (in 2006 dollars)

Public research sector	1995	2002	2003	2004	2005	2006
Sticker price	\$3,750	\$4,486	\$4,752	\$5,295	\$5,661	\$5,825
Gross tuition revenue	\$5,247	\$6,456	\$6,832	\$7,428	\$7,864	\$8,199
Net tuition revenue	\$4,532	\$5,322	\$5,628	\$6,120	\$6,472	\$6,741
Average subsidy	\$7,897	\$8,348	\$7,693	\$7,021	\$6,929	\$7,078
Public master's sector	1995	2002	2003	2004	2005	2006
Sticker price	\$3,112	\$3,652	\$3,900	\$4,327	\$4,545	\$4,710
Gross tuition revenue	\$3,670	\$4,501	\$4,796	\$5,212	\$5,462	\$5,644
Net tuition revenue	\$3,350	\$3,931	\$4,231	\$4,644	\$4,869	\$5,004
Average subsidy	\$6,250	\$6,902	\$6,422	\$5,881	\$5,744	\$5,831
Public community college sector	1995	2002	2003	2004	2005	2006
Sticker price	\$1,997	\$2,218	\$2,335	\$2,465	\$2,556	\$2,619
Gross tuition revenue	\$2,031	\$2,454	\$2,589	\$2,754	\$2,811	\$2,911
Net tuition revenue	\$1,908	\$2,246	\$2,398	\$2,553	\$2,618	\$2,693
Average subsidy	\$6,257	\$7,093	\$6,471	\$6,263	\$6,212	\$6,490
Private research sector	1995	2002	2003	2004	2005	2006
Sticker price	\$19,492	\$23,497	\$24,352	\$25,150	\$25,773	\$26,468
Gross tuition revenue	\$19,821	\$23,859	\$24,435	\$24,927	\$25,546	\$25,952
Net tuition revenue	\$15,281	\$17,570	\$17,849	\$18,064	\$18,456	\$18,555
Average subsidy	\$9,549	\$12,930	\$13,452	\$13,571	\$14,004	\$14,679
Private master's sector	1995	2002	2003	2004	2005	2006
Sticker price	\$13,282	\$16,429	\$17,013	\$17,637	\$18,070	\$18,571
Gross tuition revenue	\$12,720	\$15,572	\$16,065	\$16,537	\$16,916	\$17,197
Net tuition revenue	\$10,077	\$11,766	\$12,080	\$12,346	\$12,635	\$12,736
Average subsidy	\$1,988	\$2,865	\$2,858	\$2,606	\$2,473	\$2,502
Private bachelor's sector	1995	2002	2003	2004	2005	2006
Sticker price	\$14,285	\$17,162	\$17,749	\$18,312	\$18,787	\$19,301
Gross tuition revenue	\$13,868	\$16,614	\$17,130	\$17,755	\$18,193	\$18,636
Net tuition revenue	\$9,801	\$11,279	\$11,465	\$11,842	\$12,097	\$12,307
Average subsidy	\$5,105	\$7,178	\$7,414	\$7,014	\$6,929	\$7,085

Source: Delta Cost Project IPEDS database, 20-year matched set.

Figure A5

Average expenditures per FTE student, 1995 and 2002–2006 (in 2006 dollars)

Public research sector	1995	2002	2003	2004	2005	2006		
Instruction	\$8,007	\$8,722	\$8,526	\$8,378	\$8,554	\$8,711	Standard expense categories	
Research	\$4,183	\$4,949	\$5,058	\$5,276	\$5,377	\$5,297		
Public service	\$1,459	\$1,790	\$1,755	\$1,797	\$1,812	\$1,783		
Academic support	\$2,067	\$2,236	\$2,175	\$2,187	\$2,217	\$2,300		
Student services	\$975	\$1,173	\$1,151	\$1,153	\$1,168	\$1,202		
Institutional support	\$1,756	\$2,032	\$1,998	\$1,964	\$1,999	\$2,093		
Operations and maintenance	\$1,544	\$1,844	\$1,769	\$1,815	\$1,889	\$2,017		
Net scholarships and fellowships	\$1,607	\$1,092	\$1,028	\$973	\$1,015	\$1,021		
Education and general	\$21,561	\$23,812	\$23,445	\$23,530	\$24,016	\$24,411		
Auxiliary enterprises, hospitals, independent and other operations	\$6,351	\$6,380	\$6,439	\$6,348	\$6,713	\$6,877		
Total operating expenditures	\$27,912	\$30,192	\$29,884	\$29,878	\$30,729	\$31,288		
Education and related	\$12,429	\$13,670	\$13,320	\$13,141	\$13,402	\$13,819	Grouped expense categories	
Research and related	\$5,627	\$6,652	\$6,766	\$7,025	\$7,181	\$7,164		
Public service and related	\$1,948	\$2,398	\$2,345	\$2,405	\$2,433	\$2,420		
Net scholarships and fellowships	\$1,607	\$1,092	\$1,028	\$973	\$1,015	\$1,021		
Education and general	\$21,561	\$23,812	\$23,445	\$23,530	\$24,016	\$24,411		
Auxiliary enterprises, hospitals, independent and other operations	\$6,351	\$6,380	\$6,439	\$6,348	\$6,713	\$6,877		
Total operating expenditures	\$27,912	\$30,192	\$29,884	\$29,878	\$30,729	\$31,288		
Public master's sector	1995	2002	2003	2004	2005	2006		
Instruction	\$5,178	\$5,602	\$5,541	\$5,466	\$5,438	\$5,509		Standard expense categories
Research	\$341	\$436	\$426	\$422	\$434	\$426		
Public service	\$481	\$598	\$589	\$584	\$568	\$579		
Academic support	\$1,134	\$1,334	\$1,310	\$1,293	\$1,323	\$1,342		
Student services	\$947	\$1,179	\$1,148	\$1,142	\$1,175	\$1,185		
Institutional support	\$1,568	\$1,854	\$1,844	\$1,820	\$1,772	\$1,819		
Operations and maintenance	\$1,157	\$1,428	\$1,346	\$1,328	\$1,446	\$1,530		
Net scholarships and fellowships	\$1,424	\$1,063	\$920	\$850	\$827	\$815		
Education and general	\$12,106	\$13,425	\$13,056	\$12,834	\$12,919	\$13,141		
Auxiliary enterprises, hospitals, independent and other operations	\$1,989	\$1,974	\$1,964	\$1,987	\$2,016	\$2,029		
Total operating expenditures	\$14,086	\$15,400	\$15,020	\$14,821	\$14,935	\$15,170		
Education and related	\$9,600	\$10,833	\$10,653	\$10,524	\$10,613	\$10,835	Grouped expense categories	
Research and related	\$524	\$697	\$669	\$655	\$690	\$684		
Public service and related	\$739	\$928	\$907	\$901	\$881	\$903		
Net scholarships and fellowships	\$1,424	\$1,063	\$920	\$850	\$827	\$815		
Education and general	\$12,106	\$13,425	\$13,056	\$12,834	\$12,919	\$13,141		
Auxiliary enterprises, hospitals, independent and other operations	\$1,989	\$1,974	\$1,964	\$1,987	\$2,016	\$2,029		
Total operating expenditures	\$14,086	\$15,400	\$15,020	\$14,821	\$14,935	\$15,170		

(continued on next page)

Figure A5 (continued)

Average expenditures per FTE student, 1995 and 2002–2006 (in 2006 dollars)

		1995	2002	2003	2004	2005	2006
Public community college sector							
Standard expense categories	Instruction	\$4,314	\$4,746	\$4,511	\$4,471	\$4,460	\$4,609
	Research	\$97	\$65	\$57	\$36	\$43	\$66
	Public service	\$309	\$384	\$361	\$342	\$339	\$344
	Academic support	\$744	\$922	\$838	\$823	\$831	\$858
	Student services	\$920	\$1,106	\$1,081	\$1,065	\$1,079	\$1,110
	Institutional support	\$1,404	\$1,647	\$1,548	\$1,578	\$1,561	\$1,634
	Operations and maintenance	\$907	\$1,086	\$1,036	\$1,018	\$1,032	\$1,114
	Net scholarships and fellowships	\$1,186	\$1,297	\$1,128	\$1,041	\$957	\$894
	Education and general	\$9,700	\$11,068	\$10,345	\$10,180	\$10,105	\$10,416
	Auxiliary enterprises, hospitals, independent and other operations	\$763	\$896	\$923	\$976	\$965	\$961
	Total operating expenditures	\$10,406	\$11,911	\$11,218	\$11,099	\$11,019	\$11,317
Grouped expense categories	Education and related	\$8,169	\$9,339	\$8,869	\$8,816	\$8,830	\$9,184
	Research and related	\$152	\$101	\$88	\$60	\$73	\$109
	Public service and related	\$470	\$610	\$566	\$541	\$534	\$549
	Net scholarships and fellowships	\$1,186	\$1,297	\$1,128	\$1,041	\$957	\$894
	Education and general	\$9,700	\$11,068	\$10,345	\$10,180	\$10,105	\$10,416
	Auxiliary enterprises, hospitals, independent and other operations	\$763	\$896	\$923	\$976	\$965	\$961
	Total operating expenditures	\$10,406	\$11,911	\$11,218	\$11,099	\$11,019	\$11,317
Private research sector							
Standard expense categories	Instruction	\$15,476	\$18,765	\$18,636	\$18,774	\$19,182	\$19,251
	Research	\$6,948	\$10,311	\$10,543	\$11,004	\$11,278	\$11,110
	Public service	\$1,499	\$1,404	\$1,446	\$1,381	\$1,400	\$1,273
	Academic support	\$3,056	\$5,289	\$5,027	\$5,021	\$5,066	\$5,312
	Student services	\$1,883	\$2,875	\$2,712	\$2,724	\$2,859	\$3,037
	Institutional support	\$4,295	\$6,169	\$5,984	\$6,139	\$6,166	\$6,316
	Operations and maintenance	\$2,935	\$4,074	\$3,877	\$3,970	\$4,178	\$4,492
	Net scholarships and fellowships	\$5,472	\$1,322	\$1,413	\$1,515	\$1,509	\$1,198
	Education and general	\$40,726	\$45,647	\$47,249	\$48,119	\$49,307	\$49,801
	Auxiliary enterprises, hospitals, independent and other operations	\$14,034	\$13,609	\$13,562	\$13,714	\$13,785	\$13,984
	Total operating expenditures	\$54,759	\$58,936	\$60,652	\$61,511	\$62,768	\$63,456
Grouped expense categories	Education and related	\$24,830	\$30,500	\$31,301	\$31,635	\$32,460	\$33,234
	Research and related	\$9,528	\$14,208	\$14,934	\$15,559	\$15,929	\$15,974
	Public service and related	\$2,041	\$1,950	\$2,102	\$2,008	\$2,045	\$1,881
	Net scholarships and fellowships	\$5,472	\$1,322	\$1,413	\$1,515	\$1,509	\$1,198
	Education and general	\$40,726	\$45,647	\$47,249	\$48,119	\$49,307	\$49,801
	Auxiliary enterprises, hospitals, independent and other operations	\$14,034	\$13,609	\$13,562	\$13,714	\$13,785	\$13,984
	Total operating expenditures	\$54,759	\$58,936	\$60,652	\$61,511	\$62,768	\$63,456

Private master's sector	1995	2002	2003	2004	2005	2006		
Instruction	\$5,424	\$6,890	\$6,554	\$6,521	\$6,520	\$6,545	Standard expense categories	
Research	\$726	\$889	\$756	\$770	\$717	\$631		
Public service	\$415	\$618	\$621	\$564	\$450	\$428		
Academic support	\$1,159	\$1,605	\$1,514	\$1,508	\$1,524	\$1,529		
Student services	\$1,683	\$2,398	\$2,273	\$2,283	\$2,311	\$2,381		
Institutional support	\$2,715	\$3,584	\$3,403	\$3,414	\$3,457	\$3,429		
Operations and maintenance	\$1,317	\$1,671	\$1,747	\$1,726	\$1,758	\$1,805		
Net scholarships and fellowships	\$3,851	\$1,314	\$1,202	\$1,144	\$1,112	\$829		
Education and general	\$16,567	\$15,773	\$16,050	\$16,014	\$16,061	\$16,037		
Auxiliary enterprises, hospitals, independent and other operations	\$2,279	\$2,764	\$2,459	\$2,451	\$2,420	\$2,402		
Total operating expenditures	\$18,809	\$18,482	\$18,469	\$18,401	\$18,409	\$18,383		
Education and related	\$12,065	\$14,631	\$14,937	\$14,952	\$15,108	\$15,238	Grouped expense categories	
Research and related	\$1,075	\$1,244	\$1,156	\$1,176	\$1,115	\$996		
Public service and related	\$683	\$925	\$983	\$906	\$754	\$730		
Net scholarships and fellowships	\$3,851	\$1,314	\$1,202	\$1,144	\$1,112	\$829		
Education and general	\$16,567	\$15,773	\$16,050	\$16,014	\$16,061	\$16,037		
Auxiliary enterprises, hospitals, independent and other operations	\$2,279	\$2,764	\$2,459	\$2,451	\$2,420	\$2,402		
Total operating expenditures	\$18,809	\$18,482	\$18,469	\$18,401	\$18,409	\$18,383		
Private bachelor's sector	1995	2002	2003	2004	2005	2006		
Instruction	\$6,074	\$7,830	\$7,535	\$7,530	\$7,529	\$7,534		Standard expense categories
Research	\$604	\$656	\$637	\$677	\$678	\$673		
Public service	\$513	\$681	\$678	\$635	\$606	\$567		
Academic support	\$1,439	\$1,989	\$1,894	\$1,882	\$1,879	\$1,893		
Student services	\$2,273	\$3,274	\$3,126	\$3,142	\$3,213	\$3,311		
Institutional support	\$3,541	\$4,756	\$4,490	\$4,421	\$4,446	\$4,607		
Operations and maintenance	\$1,863	\$2,812	\$2,580	\$2,587	\$2,606	\$2,661		
Net scholarships and fellowships	\$5,610	\$2,902	\$2,569	\$2,457	\$2,542	\$1,462		
Education and general	\$21,148	\$19,999	\$20,330	\$20,251	\$20,342	\$20,373		
Auxiliary enterprises, hospitals, independent and other operations	\$3,462	\$3,934	\$3,437	\$3,345	\$3,324	\$3,295		
Total operating expenditures	\$24,579	\$23,889	\$23,737	\$23,552	\$23,614	\$23,603		
Education and related	\$14,906	\$18,457	\$18,879	\$18,856	\$19,026	\$19,392	Grouped expense categories	
Research and related	\$1,014	\$1,095	\$1,128	\$1,206	\$1,185	\$1,177		
Public service and related	\$925	\$1,152	\$1,182	\$1,107	\$1,053	\$983		
Net scholarships and fellowships	\$5,610	\$2,902	\$2,569	\$2,457	\$2,542	\$1,462		
Education and general	\$21,148	\$19,999	\$20,330	\$20,251	\$20,342	\$20,373		
Auxiliary enterprises, hospitals, independent and other operations	\$3,462	\$3,934	\$3,437	\$3,345	\$3,324	\$3,295		
Total operating expenditures	\$24,579	\$23,889	\$23,737	\$23,552	\$23,614	\$23,603		

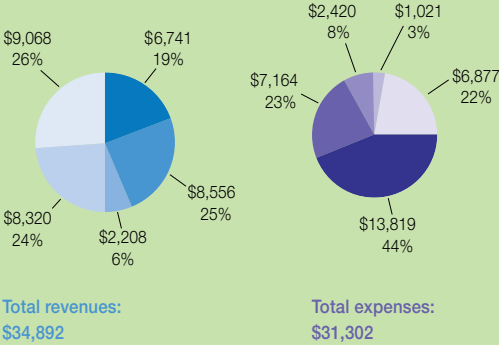
Source: Delta Cost Project IPEDS database, 20-year matched set.

Note: Data may not sum to totals because component data were summed at the institution level prior to calculating aggregate category averages.

A visual review—revenues and expenses in 2006

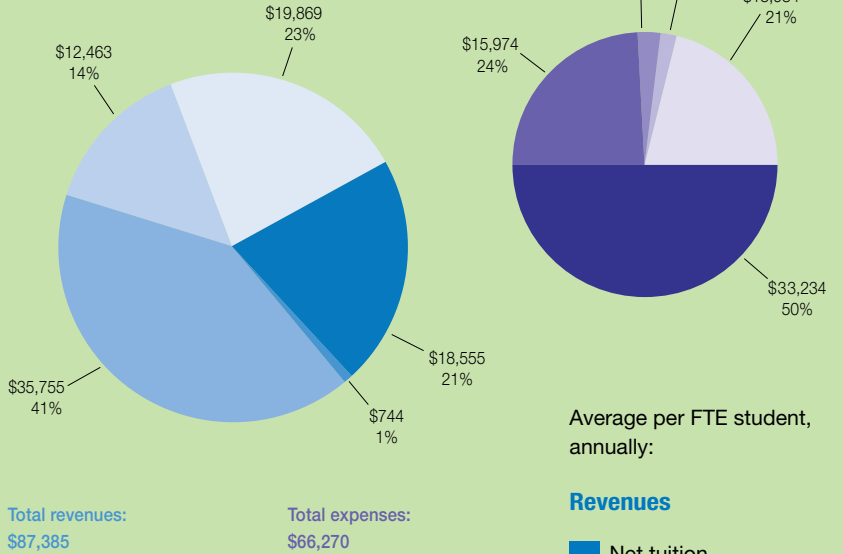
Public sector

Public research



Private sector

Private research

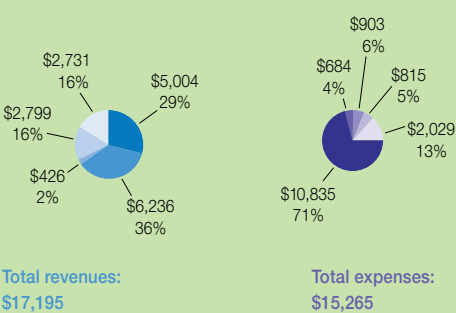


Average per FTE student, annually:

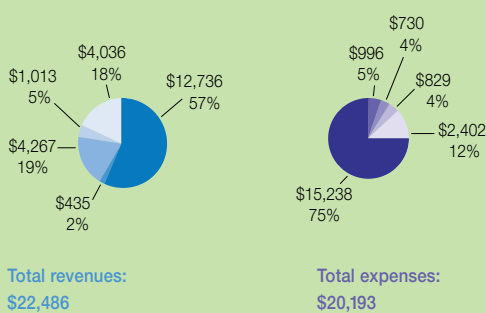
Revenues

- Net tuition
- State/local appropriations
- Private gifts, investment returns, and endowment income
- Federal appropriations, grants & contracts and state/local grants & contracts
- Auxiliary enterprises, hospitals, independent operations and other sources

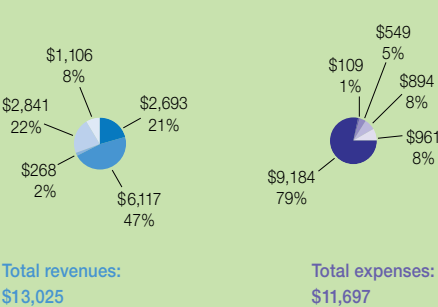
Public master's



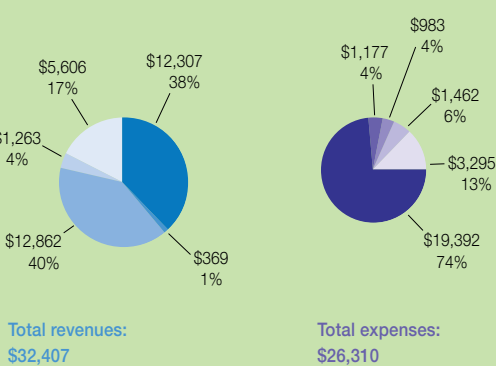
Private master's



Public community college



Private bachelor's



Expenses

- Education and related expenses
- Research and related expenses
- Public service and related expenses
- Scholarships and fellowships
- Auxiliary enterprises, hospitals, independent operations and other expenses

Source: Delta Cost Project IPEDS database, 20-year matched set.

