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Trends in College Spending: 2003–2013

Where Does the Money Come From? Where Does It Go? What Does It Buy?

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Trends in College Spending: 2003–2013 examines college and university finances during one of the most turbulent economic periods in decades. The financial ramifications of the 2008 recession were vast, affecting students' ability to pay for college, lawmakers' prioritization of public resources, and the budgetary environment facing higher education leaders. The challenges brought by the fiscal crisis also provided colleges and universities with an opportunity to reevaluate how they allocated resources and rethink how to manage costs and improve student outcomes.

Like previous *Trends in College Spending* reports, this update is meant to aid readers in developing a deeper understanding of how colleges collect and spend money and the outcomes they produce. Financial and performance trends during the 2003–2013 decade suggest that, five years after the onset of the recession, higher education finally began to show signs of a fiscal recovery.

Spending increases were widespread in 2013, with all types of public and private institutions spending, on average, more per student than the year before. Public and private research and master's institutions experienced the strongest resurgence, as educational spending per student returned near the peak levels observed before the recession. The strongest revenue growth occurred among public research universities and private institutions. Public community colleges also saw a particularly strong financial turnaround in 2013, aided by sharp enrollment declines that eased strained budgets and boosted per-student financial measures, although they remained well below their prerecession operating levels.

Nonetheless, the growth in revenue and spending within a decade overshadow two dispiriting—and related—changes. First, although after half a decade of state disinvestment in higher education, per-student funding levels looked better in 2013, they were nevertheless well below levels seen earlier in the decade and unlikely to fully recover soon. Second, as a result of lower public support, students now pay a majority of education-related institutional costs—indicating that even when faced with significant revenue constraints, colleges and universities were unwilling or unable to make drastic spending cuts. Instead, they turned to students to increasingly finance their operations, further reinforcing the notion of education as a private, rather than a public, good.

There were some encouraging trends as educational outcomes saw sustained improvement in the decade. Colleges and universities awarded more degrees and certificates, and degree productivity rose sharply at the end of the decade. The institutional cost of producing those credentials also declined during the decade, suggesting that gains in degree productivity and cost efficiency are not necessarily opposite sides of the same coin. But upticks in the cost per degree in 2013 suggest these advances may be short-lived.

HIGHLIGHTS

- **Spending increased across all types of public and private institutions from 2012 to 2013.** Among public four-year colleges and universities, education and related (E&R) spending[1] rose, on average, by 2 to 3 percent, the largest such increase since the start of the recession in 2008. Public and private research universities and master's institutions had largely rebounded from recession-related spending cuts by 2013.

- **The financial position of community colleges showed significant improvement in 2013 as enrollment continued to decline.** Stretched thin by a rapid 25 percent rise in full-time equivalent (FTE) enrollment from 2007 to 2011, community colleges saw a boost in average total revenues per FTE student for the first time since 2008 (3 percent), thanks to a second consecutive year of enrollment declines (–4 percent). E&R spending per FTE student rose substantially (5 percent) for the second consecutive year. Despite these improvements, community colleges' financial position remained far below levels observed at the beginning of the recession.

- **After four years of significant declines, sharp cuts in state and local appropriations subsided in 2013.** Aided by falling enrollments, state and local funding per FTE student increased at community colleges (5 percent) and public bachelor's colleges (1 percent) from 2012 to 2013. Even the one-year decline of nearly 2 percent at public research universities was an improvement over recent years, when appropriations fell as much as 9 percent in a single year; appropriations were unchanged at public master's institutions. But state and local funding per student remained 20 to 30 percent lower than in 2008 at all types of public institutions, on average.

- **Colleges and universities no longer shifted additional operating costs onto students in 2013, but tuition revenue still financed a majority of education-related spending at public and private four-year institutions.** The share of educational costs paid by student tuitions—ranging from roughly 50 to 62 percent, on average—did not change at public four-year institutions from 2012 to 2013; at public community colleges, it declined by 1 percentage point to 38 percent. Private institutions lowered the average tuition share of costs for a second straight year. These recent changes were not enough, however, to offset years of sustained increases across higher education, including an approximate 10 percentage point rise among public institutions since 2008.

- **Degree and certificate production grew throughout the decade amid steadily declining costs in the recession's aftermath; in 2013, however, a reversal occurred at some types of institutions.** Degree productivity increased progressively in the decade, with the sharpest growth beginning in 2011 at most types of institutions, even amid tight budgets. Colleges and universities showed efficiency improvements, for these increases successfully drove down the average production cost per completion after the recession, particularly at public colleges and universities, where average production costs were lower in 2013 than in 2003. But in 2013, these gains appeared in jeopardy at private institutions and public research universities as costs per completion began to rise.

[1] Education and related spending includes expenditures related only to the core academic mission: instruction, student services, and a prorated share of administration and operations and maintenance. E&R excludes spending on sponsored research, public service, auxiliaries, and other operations.

Introduction

In this year's *Trends in College Spending*, information for public and private nonprofit colleges and universities is shown from academic years 2003 to 2013. Observations on financial patterns and trends are organized around four key questions:

- Where does the money come from?
- Where does the money go?
- Why are prices going up?
- What does the money buy?

Data in this report were drawn from the Delta Cost Project Database, 1987–2013. The Delta database was compiled from publicly available data reported to the federal government through the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS), administered by the National Center for Education Statistics. The database includes transformations that resolve differences in IPEDS reporting requirements and allow comparable analyses over time and across different types of higher education institutions. Financial metrics include only operating budgets and are shown per FTE student. Metrics are adjusted for inflation using the Consumer Price Index (CPI); all financial data are shown in 2013 dollars.

Findings are presented as institutional averages for public and private nonprofit four-year institutions and public community colleges, organized on the basis of the 2010 Carnegie Classification. Institutions may award many types of degrees and certificates, although the highest type of degree typically offered follows these criteria:

- Research institutions: Award at least 20 research doctoral degrees a year.
- Master's institutions: Award at least 50 master's degrees and fewer than 20 doctoral degrees per year.
- Bachelor's institutions: Bachelor's degrees represent at least 10 percent of undergraduate degrees; fewer than 50 master's or 20 doctoral degrees are awarded per year.
- Public community colleges: Award associate's degrees or certificates requiring two or fewer years of study; bachelor's degrees account for less than 10 percent of degrees per year.

Revenues: Where Does the Money Come From?

Colleges and universities receive revenues from a number of sources (see Box 1). Their educational mission is typically funded with revenue from tuition and state and local appropriations and income from endowments or investment returns. Colleges and universities also may receive grants and contracts for research and training, or revenue from "auxiliary" services such as bookstores and dining halls.

Box 1. Revenue Sources

- **Net tuition revenue.** Total revenue from tuition and fees (including grant and loan aid used by students to pay tuition); institutional student aid that is applied to tuition and fees is excluded.
- **State and local appropriations.** Revenues received through state or local legislative organizations (except grants, contracts, and capital appropriations).
- **Private gifts, investment returns, and endowment income (PIE).** Private gifts include revenues received from private donors or 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 revenues are from interest income, dividend income, rental income, or royalty income. Endowment income is 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 are reimbursable under a contract or grant.
- **Federal appropriations, grants, and contracts.** The total amount of revenue coming from federal appropriations, grants, and contracts (excluding Pell grants).
- **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 intercollegiate 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 are revenues associated with operations independent of or unrelated to instruction, research, or public services and generally include only revenues from major, federally funded research and development centers. Other sources include educational sales and services and miscellaneous revenues not covered elsewhere.

Revenues improved across most types of public and private four-year colleges and universities from 2012 to 2013, with research universities showing the greatest resurgence.

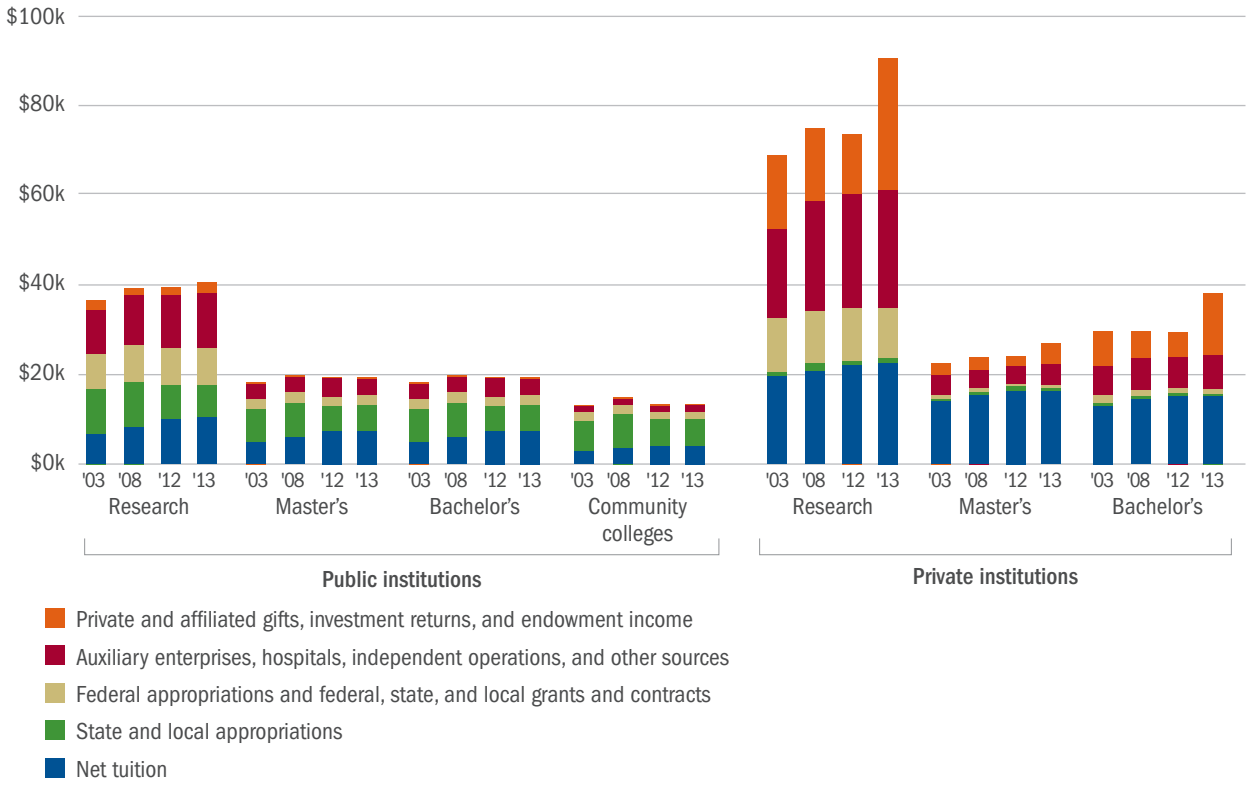
College and university revenues in the postrecession years were unsteady and often declined, as in 2012, when average revenues (excluding private gifts, investment returns, and endowment income) per FTE student[2] declined across all types of public and private colleges and universities. In 2013, however, most types of postsecondary institutions showed signs of improvement, as revenues per FTE student rose by nearly 2 percent at private research universities and roughly 1 percent at public research, private master's, and private bachelor's institutions. Revenues at public master's and bachelor's institutions were largely unchanged (see Figure 1 and Appendix Figure A2).

[2] The changes in total revenue described throughout the revenue section exclude private gifts, investment returns, and endowment income (PIE). These revenues can be quite volatile because institutions report the value of these funds, which are subject to fluctuation in the financial markets. For example, the financial markets were rising in fiscal year (FY) 2012, but a market correction in fall 2011 resulted in diminished PIE increases when comparing portfolio values at the beginning and end of the period. As a result, the change in FY 2012 PIE revenue was much lower than the growth shown for FY 2011.

Increases in net tuition revenue continued to be the most significant source of new funding at public four-year college and universities, although the one-year increases in 2013 (2 to 3 percent, on average) were some of the smallest in a decade. Per-student funding from other federal, state, and local sources stabilized or declined less than in previous postrecession years, requiring fewer tuition dollars to offset such revenue losses. Public research universities also benefited from an increase in auxiliary revenues, which rose an average of 3 percent.

The primary sources of rising revenues in the private sector (except at private bachelor's colleges) were auxiliary services and net tuition. At private bachelor's colleges, average net tuition revenue per student was virtually unchanged for three consecutive years, leaving fluctuations in other revenue sources to affect their overall budget. The financial portfolios of private colleges and universities improved in 2013, with the value of private gifts, investment returns, and endowment income increasing, on average, across the private sector.

Figure 1.
Total Revenues per FTE Student, FY 2003–2013 (in 2013 Dollars)



Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

Community college revenues per student increased in 2013 after declining every year since the 2008 recession.

A second year of sharp declines in the number of community college FTE students (–4 percent; see Appendix Figure A1) boosted the financial position of community colleges in 2013. Large enrollment increases during and after the 2008 recession were accompanied by sizable declines in revenue per FTE student. In 2013, however, community colleges posted their first increase in average revenues per FTE student in five years (3 percent).

State and local appropriations to community colleges contributed the most to their one-year increase in revenues, as appropriations per FTE student rose by 5 percent. Similarly, per-student revenues from net tuition and other federal, state, and local grants and contracts increased by 2 percent or more, further boosting revenues at community colleges.

Across higher education, revenues per FTE student were higher in 2013 than a decade earlier, but only private institutions and public research universities had fully recovered revenue losses experienced since the 2008 recession.

Across the decade, public flagship and comprehensive institutions showed more robust financial growth than regional four-year and community colleges. In comparison with 2003, average total revenue per FTE student (excluding private gifts, investment returns, and endowment income) in 2013 was 11 percent higher at public research universities, 6 percent higher at public master's institutions, and 3 percent higher at public bachelor's institutions (see Appendix Figure A4). Contrasting 2013 revenues against prerecession levels in 2008, however, shows that only public research universities had recovered from the recession-related downturn (2 percent increase). Average revenues per FTE student at public master's and bachelor's institutions remained 3 to 6 percent lower.

The 2013 per-FTE-student revenue increase at community colleges was not enough to offset sustained declines in recent years. Average community college revenues per student were still 9 percent lower than at the start of the recession in 2008 and only 1 percent higher than a decade earlier in 2003.

Despite short-term postrecession setbacks, per-student revenues at private colleges and universities remained significantly higher in 2013 than 5 and 10 years earlier. Average revenues per student were 17 percent higher at private research universities in 2013 than in 2003, and at private master's and bachelor's institutions were 14 and 11 percent higher, respectively.

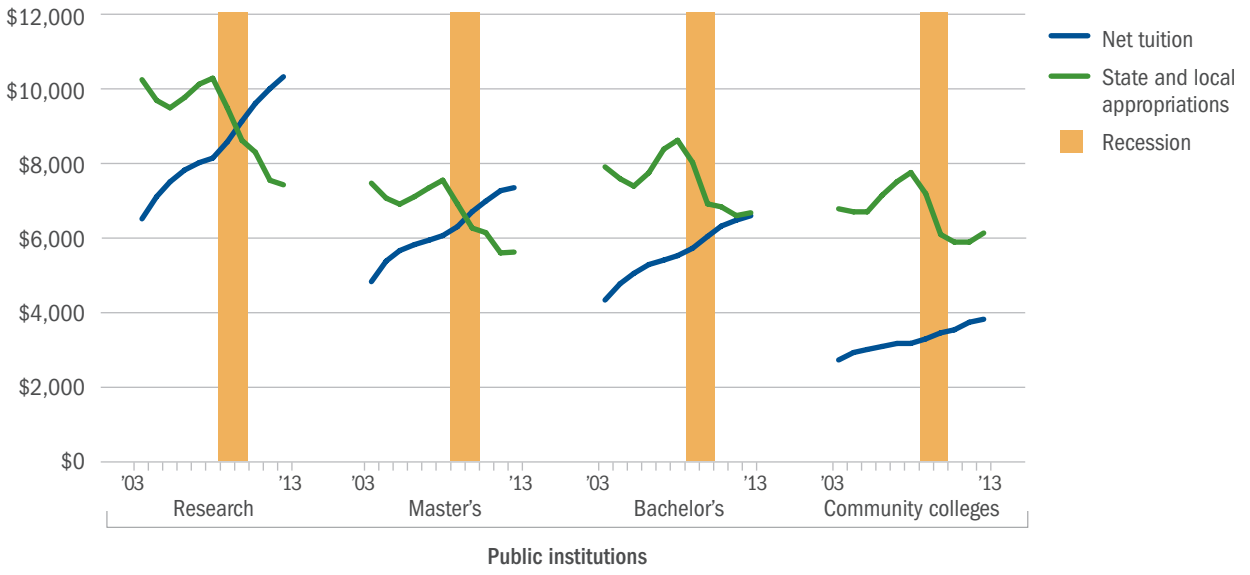
Sharp cuts in state and local funding per FTE student abated at public colleges and universities in 2013, but funding remained well below prerecession levels.

The sharp and persistent declines in state and local funding per FTE student experienced since the 2008 recession finally tapered off in 2013. Among those colleges with the largest one-year enrollment declines—public community colleges (–4 percent) and public bachelor's (–2 percent)—the amount of public funding per student increased, rising by 5 percent at community colleges (to $6,100) and by 1 percent at public bachelor's colleges (to $6,700). Funding remained essentially unchanged at public master's institutions ($5,600; see Figure 2 and Appendix Figure A2). At public research universities, state and local funding did not keep pace with modest enrollment increases; per-student revenue declined for the fifth consecutive year (to $7,400); however, the one-year decline of nearly 2 percent was the smallest since the declines began.

State and local funding per FTE student remains well below prerecession levels. The largest recession-related declines occurred at public research universities, where funding was 28 percent lower in 2013 than in 2008, reflecting a loss of $2,900 per student in revenue. At public nonresearch colleges, state and local revenue per student declined by at least 20 percent, on average, with revenue declines averaging $1,600 to $2,000 per student.

These severe and sustained losses of public funding contributed to the rapid increase in net tuition revenue observed since the recession. Colleges and universities continued to raise new revenue from students across the decade, however, even during periods when public funding per student was rising (although to a lesser extent). As a result, by 2013, revenue from state and local appropriations at public bachelor's institutions nearly equaled that from net tuition revenue, and the increases in public funding at public research and master's universities were not enough to reverse the growing gap between that funding and funding that comes from net tuition.

Figure 2.
Net Tuition Revenue and State and Local Appropriations at Public Institutions per FTE Student, FY 2003–2013 (in 2013 Dollars)



Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

Expenditures: Where Does the Money Go?

The primary mission of colleges and universities is academic; nevertheless, institutional budgets reflect the broader set of institutional activities that support or supplement instruction. For example, noninstructional services help students navigate course selection, financial obligations, and career opportunities, and general administrative and academic services (e.g., human resources, legal and financial operations, libraries, and information technology) provide broad organizational support (see Box 2). Some colleges and universities also engage in research and public service activities and may offer self-financed auxiliary services such as bookstores, dining halls, and residential housing.

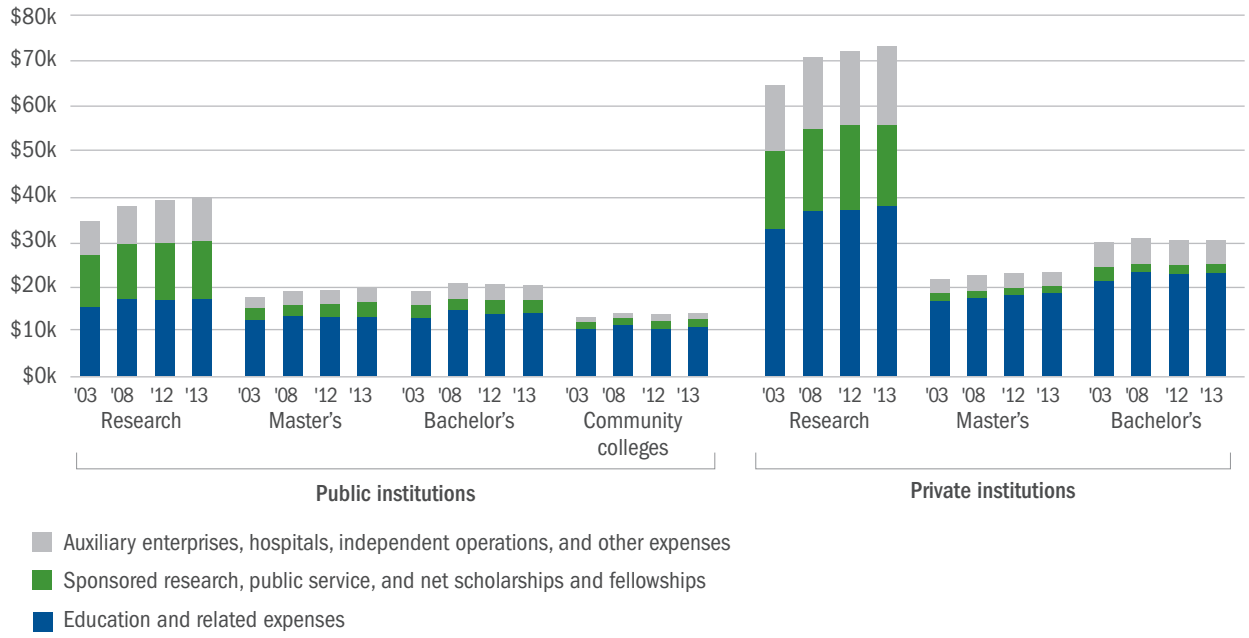
Box 2. Standard Expense Categories

- **Instruction.** Activities directly related to instruction, including faculty salaries and benefits, office supplies, the 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 also are budgeted separately and include conferences, reference bureaus, cooperative extension services, and public broadcasting.
- **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 example, are typically embedded within student services.
- **Academic support.** Activities that support instruction, research, and public service, including libraries, academic computing, museums, central academic administration (deans' 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 measure 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.
- **Auxiliary enterprises, hospitals and clinics, and independent and other operations.** User fee activities that do not receive general support. Auxiliary enterprises include dormitories, bookstores, and meal services.

To minimize spending differences that often result from these diverse activities, the Delta Cost Project compares aggregate spending across institutions using the education and related spending (E&R) measure. Unlike other aggregated measures of college or university spending, E&R includes only direct and indirect spending related to the academic mission.[3]

[3] Other aggregate spending measures include (1) *total expenditures*, which reflects spending in all standard expense categories shown in Box 2, and (2) *education and general spending (E&G),* which includes all standard expense categories except auxiliary enterprises, hospitals, and independent and other operations.

Figure 3.
Total Expenditures per FTE Student by Grouped Expense Categories, FY 2003–2013 (in 2013 Dollars)



Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

Education and related spending rose across all types of public and private institutions from 2012 to 2013, and public four-year institutions had their largest increase in five years.

E&R spending per FTE student increased an average of 2 to 3 percent at public four-year institutions in 2013, the largest such increase since 2008 and a sharp uptick from just one year earlier, when spending was unchanged or declining (see Figure 3 and Appendix Figure A3). In 2013, public research institutions spent about $17,300 per student, and public bachelor's institutions spent $14,000 per student and public master's institutions spent $13,300 per student. On average, E&R spending accounted for roughly 70 percent of total spending per student at public nonresearch universities in 2013, in comparison with 43 percent at public research universities (a result of their expanded research function).

Community colleges spent $10,800 per student on E&R activities in 2013—*growing* by 5 percent and rising for the second consecutive year since the 2008 recession. On average, E&R spending accounted for more than 75 percent of total spending at these two-year colleges.

Spending at private institutions increased for the second consecutive year. E&R spending per student rose by about 2 percent at private research and master's institutions (to $37,800 and $18,800, respectively), and by about 1 percent at private bachelor's institutions (to $23,100). More than one-half of total average spending by private research universities was dedicated to E&R functions, and at private nonresearch colleges, E&R accounted for approximately 80 percent of total expenditures.

Education and related spending by public and private research and master's institutions had largely rebounded from recession-related cuts by 2013, surpassing 2008 spending levels.

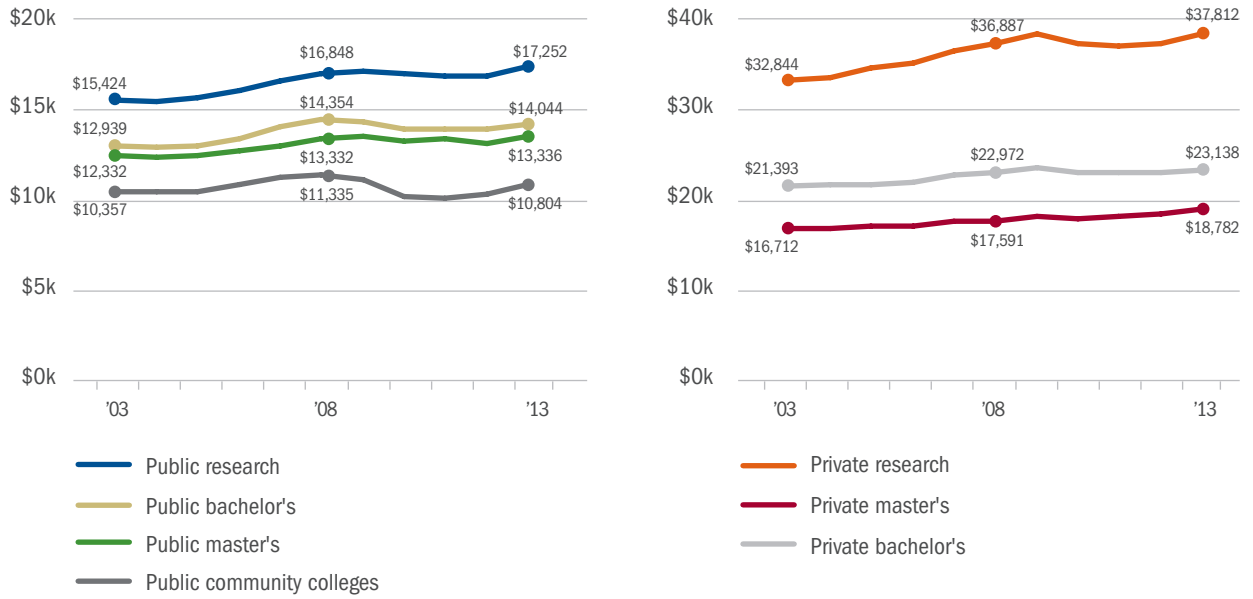
Despite the 2008 recession, average E&R spending per FTE student declined only 2 to 4 percent at public and private four-year institutions during the postrecession years. By 2013, signs of a recovery were evident.

Public research universities had fully recovered from recession-related cuts in 2013, and E&R spending per student was about 2 percent higher than five years earlier (see Figure 4 and Appendix Figure A4). Public master's institutions also had largely recovered, averaging roughly the same E&R spending per student in 2013 as in 2008. Average E&R spending per student also rose at public bachelor's colleges in 2013 but remained 2 percent below its prerecession high.

Declining community college enrollments were favorable to budgets, but average E&R spending per student remained 5 percent lower than its prerecession peak in 2008.

The turnaround at private four-year institutions began a year earlier but gained momentum in 2013. Average E&R spending per student at private research and bachelor's institutions remained slightly below their 2009 peak. In comparison with 2008, however, E&R spending per student was 3 percent higher at private research universities, 7 percent higher at private master's institutions, and 1 percent higher at private bachelor's colleges.

Figure 4.
Average Education and Related Spending per FTE Student, FY 2003–2013 (in 2013 Dollars)



Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

Figure 5.

Spending per FTE Student by Standard Expense Categories, FY 2003–2013 (in 2013 Dollars)

					10-year change		1-year change	
Public research	2003	2008	2012	2013	$	%	$	%
Instruction	$9,860	$10,453	$10,547	$10,783	$924	9.4%	$236	2.2%
Research	$5,672	$5,857	$6,243	$6,213	$540	9.5%	-$31	-0.5%
Student services	$1,300	$1,427	$1,528	$1,590	$290	22.3%	$62	4.1%
Public service	$2,020	$2,110	$2,084	$2,062	$41	2.0%	-$23	-1.1%
Academic support	$2,509	$2,974	$3,047	$3,150	$640	25.5%	$103	3.4%
Institutional support	$2,335	$2,676	$2,599	$2,695	$360	15.4%	$96	3.7%
Operation and maintenance	$2,023	$2,321	$1,905	$1,932	-$92	-4.5%	$27	1.4%
Public master's	**2003**	**2008**	**2012**	**2013**	**$**	**%**	**$**	**%**
Instruction	$6,400	$6,789	$6,791	$6,879	$479	7.5%	$88	1.3%
Research	$403	$431	$439	$426	$23	5.7%	-$13	-2.9%
Student services	$1,329	$1,508	$1,580	$1,636	$307	23.1%	$56	3.6%
Public service	$750	$700	$607	$610	-$140	-18.7%	$3	0.5%
Academic support	$1,496	$1,603	$1,604	$1,670	$174	11.6%	$66	4.1%
Institutional support	$2,129	$2,210	$2,176	$2,212	$82	3.9%	$36	1.7%
Operation and maintenance	$1,547	$1,800	$1,433	$1,460	-$87	-5.6%	$26	1.8%
Public bachelor's	**2003**	**2008**	**2012**	**2013**	**$**	**%**	**$**	**%**
Instruction	$6,091	$6,565	$6,534	$6,599	$509	8.4%	$66	1.0%
Research	$510	$452	$455	$466	-$45	-8.8%	$10	2.2%
Student services	$1,720	$1,819	$1,843	$1,911	$191	11.1%	$67	3.7%
Public service	$747	$596	$539	$536	-$211	-28.3%	-$3	-0.6%
Academic support	$1,496	$1,597	$1,563	$1,638	$142	9.5%	$75	4.8%
Institutional support	$2,401	$2,729	$2,692	$2,669	$268	11.2%	-$23	-0.8%
Operation and maintenance	$1,830	$2,186	$1,680	$1,740	-$90	-4.9%	$60	3.6%
Public community colleges	**2003**	**2008**	**2012**	**2013**	**$**	**%**	**$**	**%**
Instruction	$5,238	$5,662	$5,157	$5,402	$163	3.1%	$245	4.7%
Research	$62	$46	$54	$58	-$4	-6.6%	$4	7.7%
Student services	$1,272	$1,363	$1,286	$1,360	$88	6.9%	$74	5.7%
Public service	$423	$389	$324	$330	-$92	-21.8%	$7	2.1%
Academic support	$1,011	$1,092	$998	$1,052	$42	4.1%	$54	5.4%
Institutional support	$1,805	$2,042	$1,854	$1,971	$166	9.2%	$117	6.3%
Operation and maintenance	$1,194	$1,343	$1,098	$1,145	-$48	-4.1%	$47	4.3%

Figure 5.
Spending per FTE Student by Standard Expense Categories, FY 2003–2013 (in 2013 Dollars)

					10-year change		1-year change	
Private research	2003	2008	2012	2013	$	%	$	%
Instruction	$19,370	$20,981	$21,200	$21,410	$2,039	10.5%	$210	1.0%
Research	$11,790	$12,182	$12,851	$12,249	$459	3.9%	-$602	-4.7%
Student services	$3,003	$3,512	$3,748	$3,901	$897	29.9%	$153	4.1%
Public service	$1,663	$1,412	$1,368	$1,238	-$425	-25.6%	-$130	-9.5%
Academic support	$5,091	$5,855	$6,002	$6,232	$1,141	22.4%	$230	3.8%
Institutional support	$6,502	$7,433	$7,176	$7,223	$721	11.1%	$47	0.7%
Operation and maintenance	$3,278	$4,294	$3,842	$4,101	$823	25.1%	$259	6.7%
Private master's	**2003**	**2008**	**2012**	**2013**	**$**	**%**	**$**	**%**
Instruction	$7,252	$7,529	$7,848	$7,995	$743	10.3%	$147	1.9%
Research	$660	$527	$494	$486	-$174	-26.4%	-$8	-1.6%
Student services	$2,601	$2,915	$3,211	$3,352	$750	28.8%	$141	4.4%
Public service	$683	$545	$450	$434	-$249	-36.4%	-$16	-3.6%
Academic support	$1,724	$1,822	$1,884	$1,932	$208	12.1%	$47	2.5%
Institutional support	$3,910	$4,106	$4,164	$4,180	$270	6.9%	$16	0.4%
Operation and maintenance	$1,502	$1,628	$1,512	$1,530	$28	1.9%	$18	1.2%
Private bachelor's	**2003**	**2008**	**2012**	**2013**	**$**	**%**	**$**	**%**
Instruction	$8,610	$9,112	$9,010	$9,060	$450	5.2%	$50	0.6%
Research	$860	$840	$838	$797	-$63	-7.3%	-$41	-4.9%
Student services	$3,657	$4,169	$4,345	$4,453	$796	21.8%	$108	2.5%
Public service	$840	$610	$692	$746	-$94	-11.2%	$54	7.7%
Academic support	$2,111	$2,252	$2,199	$2,217	$107	5.0%	$18	0.8%
Institutional support	$5,303	$5,640	$5,453	$5,456	$153	2.9%	$3	0.1%
Operation and maintenance	$2,101	$2,466	$2,257	$2,347	$246	11.7%	$90	4.0%

Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

Public and private institutions increased spending on instruction from 2012 to 2013, but spending on noninstructional student services and many administrative functions grew faster.

Public and private four-year colleges and universities boosted spending on student services per FTE student by 2 to 4 percent in 2013, outpacing the instructional spending in terms of average growth (1 to 2 percent), but not the dollar amount invested (see Figure 5). This reflects a positive shift at public institutions from a year earlier, when student services spending was financed with cuts in instructional spending.

The rise in student services spending is an ongoing trend. On many college campuses, the growth may reflect a greater emphasis on career counseling and academic advising by professional staff, as well as students' expectations about access to campus mental health services. Student services was among the fastest growing spending categories during the prior decade—particularly at private institutions and selective public institutions, where spending per student increased by more than 20 percent between 2003 and 2013.

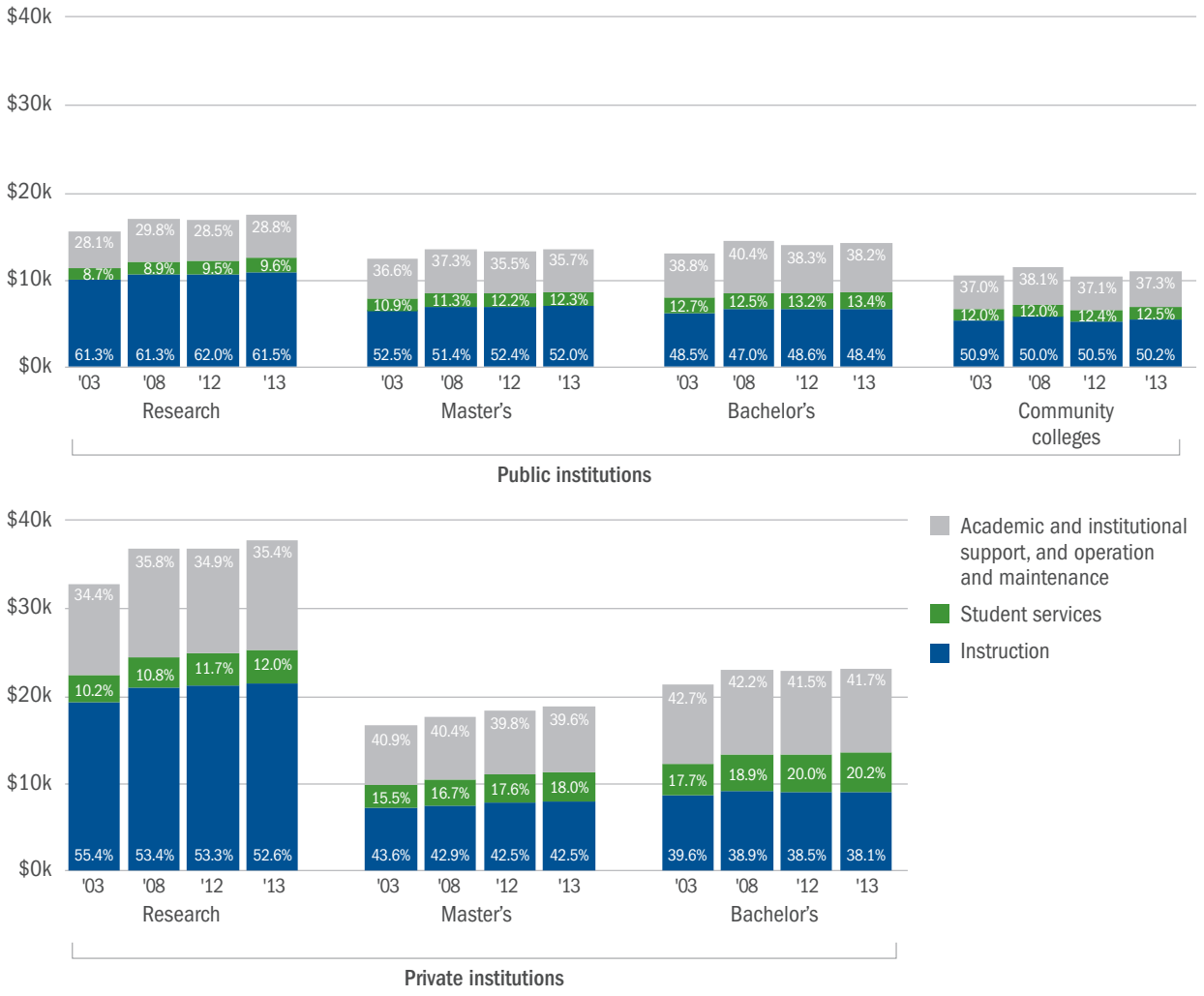
Spending on administrative and maintenance functions increased faster than instructional spending at many four-year institutions in 2013. In particular, academic support expenditures per student (e.g., libraries, information technology, deans' offices) rose by an average of 3 percent or more across most types of four-year colleges and universities, and per-student spending on more general institutional support (e.g., finance, legal, human resources) varied by type of institutions. Although most types of public and private institutions cut their operations and maintenance budgets in 2012, there were modest funding increases in 2013.

Community colleges posted widespread spending increases across all campus functions, exceeding 4 percent in most expenditure categories in 2013. This represents a sharp reversal from just two years earlier, when spending declined in all expenditure categories. Spending per student also was higher in most areas than in 2003 but showed the most growth in administrative costs, with a 9 percent rise in per-student spending on institutional support services.

Public and private universities and colleges have increasingly dedicated more of their budgets to noninstructional student services, but instruction and administration still account for most of their spending.

Although spending on noninstructional student services has grown sharply in the past decade, it accounted for only 10 to 13 percent of E&R spending per FTE student at public institutions and private research universities in 2013 (see Figure 6). Private master's and bachelor's institutions have invested much more in these services, averaging 18 to 20 percent of spending. These private nonresearch institutions also spent a larger share of their overall E&R budget on administration and maintenance activities, dedicating only about 40 percent of their budget to instructional spending. Public institutions, however, typically dedicate about 50 percent or more of their budget to instructional activities.

Figure 6.
Average Education and Related Spending per FTE Student by Component, FY 2003–2013 (in 2013 Dollars)



Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

Spending, Tuitions, and Subsidies: Why Are Prices Going Up?

Students typically do not pay the full cost incurred by institutions to provide their education. Tuition revenue pays a portion of education-related costs, but most public and private colleges and universities provide institutional subsidies to finance the remainder. At public institutions these subsidies are primarily funded from state appropriations, and at private institutions they usually are underwritten from investment and endowment returns or other revenues and profits.

Subsidy patterns are important for understanding one of the most misunderstood trends in higher education—the relationship between tuition prices and spending. For many years, tuition prices rose sharply and colleges brought in significantly more tuition revenue, but during the great recession and recovery, this new money was increasingly used to replace other lost revenues instead of financing new spending.

For the first time in four years, public four-year colleges and universities did not shift additional educational costs onto students in 2013. And at public community colleges, the student's share of costs actually declined.

At public four-year colleges and universities, the proportion of educational costs paid for with student tuitions was approximately the same in 2013 as the year before (see Figure 7). Student tuitions paid for 62 percent of total E&R costs, on average, at public research universities, and 57 percent at public master's institutions. At public bachelor's institutions, student tuitions and institutional subsidies each contributed about one-half of total E&R costs.

This recent stabilization, however, comes in the wake of four years of sharp increases in the portion of college costs financed by student tuitions. Since 2008, the share of E&R budgets paid by student tuitions rose approximately 10 percentage points at public four-year colleges and universities, outpacing the increase during the first half of the decade.

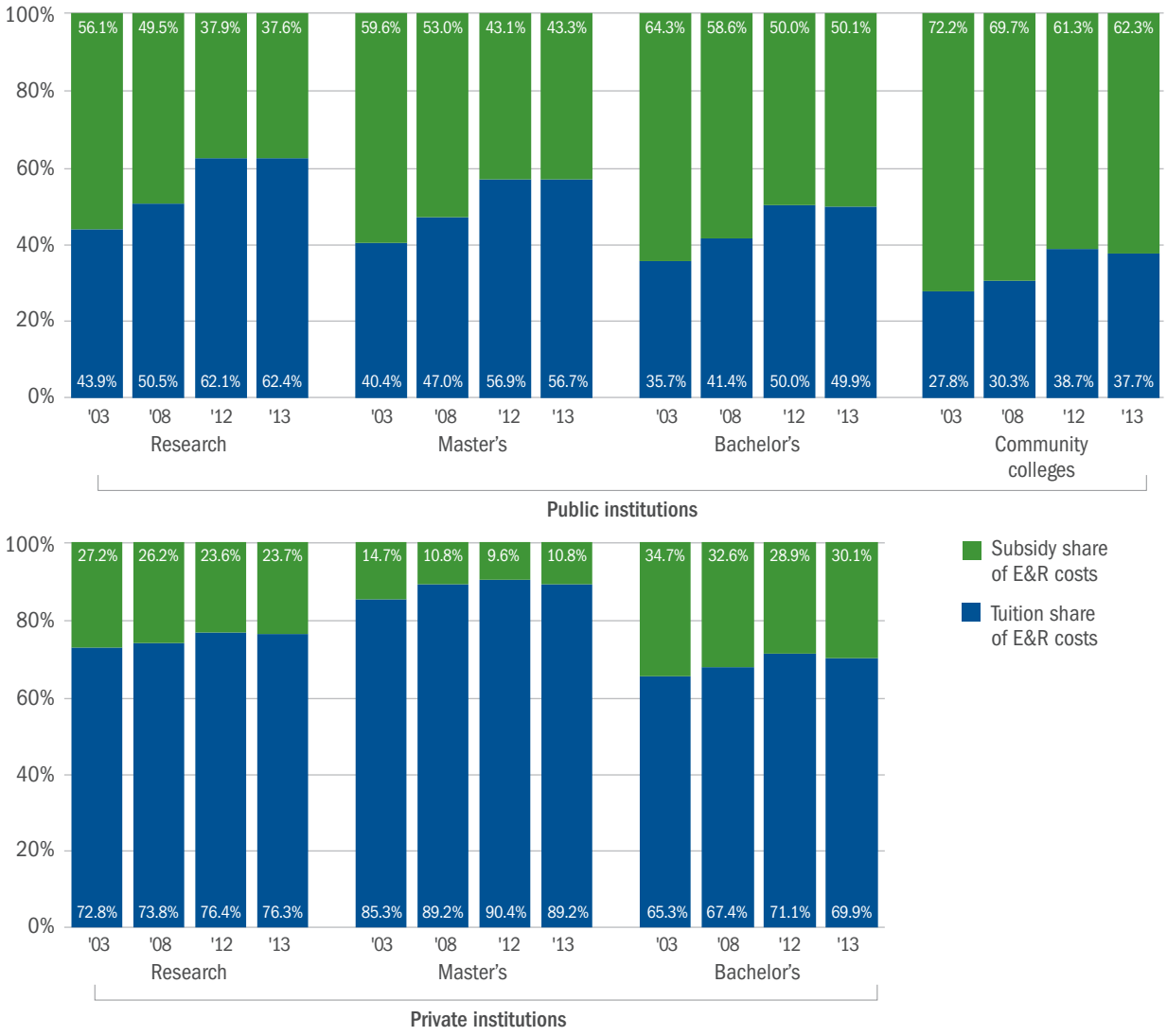
At public community colleges, the tuition share of E&R costs *declined* by 1 percentage point from 2012 to 2013 to 38 percent. Tuition from community college students, however, covered about 30 percent of the cost in 2008, which represents an 8 percentage point increase in five years.

A slight reversal occurred at private college and universities in the past two years, with student tuitions financing a smaller share of educational costs in 2013 than in 2011.

Private institutions tend to rely heavily on tuition dollars. Without the benefit of state appropriations, subsidies must come from other institutional revenues or profits. In 2013, student tuitions at private research and master's institutions paid for 76 and 89 percent of E&R costs, respectively, and at private bachelor's colleges they covered 70 percent of the costs.

For the second consecutive year, private nonresearch college and university students financed a smaller share of E&R costs, showing a 1 percentage point decline. At private research universities, the proportion of E&R budgets paid by student tuitions was unchanged in 2013 after declining in 2012 (see Figure 7). During 2012 and 2013, average declines totaling 1 to 3 percentage points shifted the portion of costs paid by tuition dollars back to levels last observed in 2010 or before. But the tuition share of E&R costs remained about 4 to 5 percentage points higher in 2013 than they were a decade earlier.

Figure 7.
Net Tuition and Subsidy Shares of Education and Related Costs, FY 2003–2013 (in 2013 Dollars)



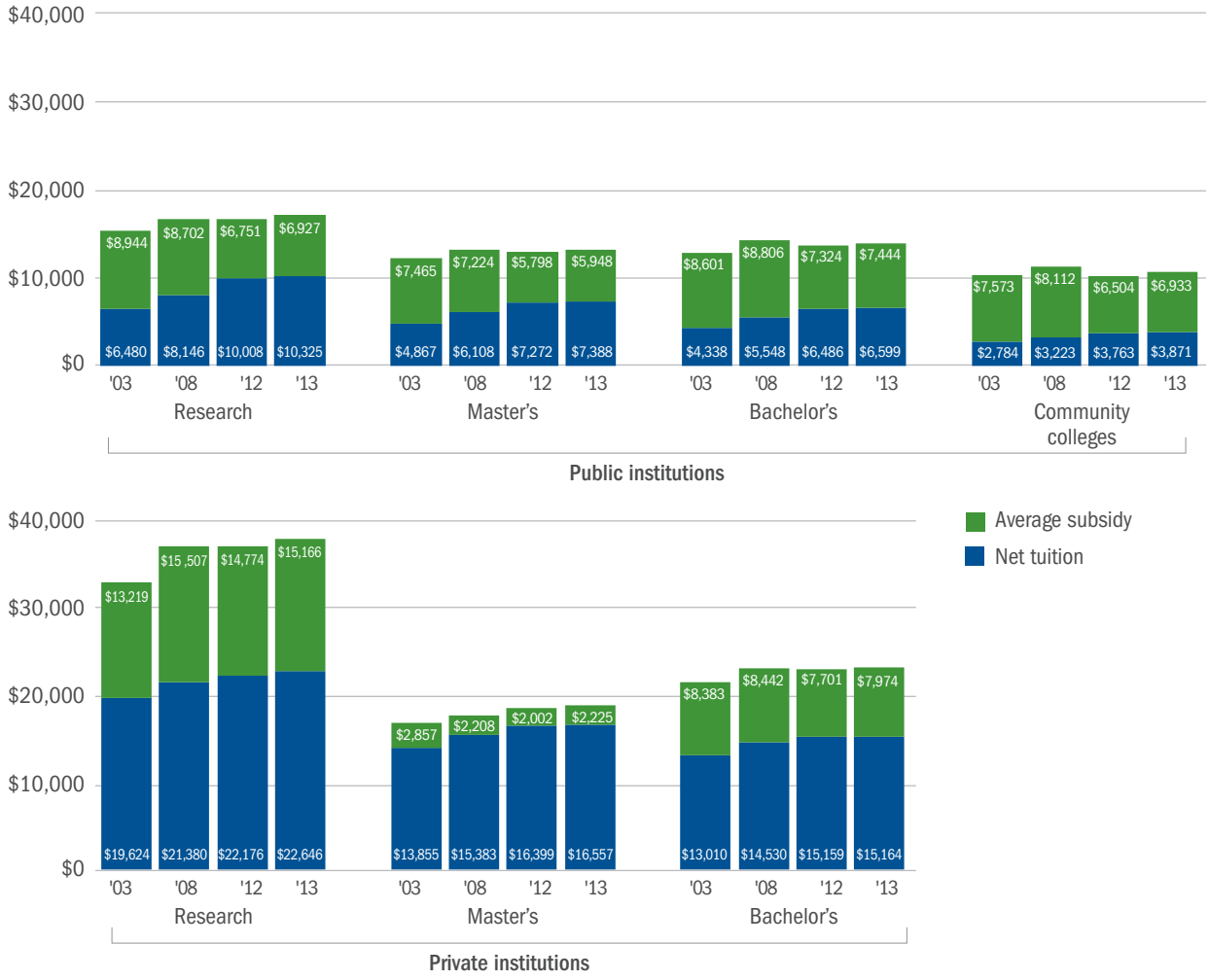
Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

New spending in 2013 was funded with a fairly equal contribution of student and institutional resources across most public and private four-year institutions.

The expansion in spending per FTE student at public and private four-year colleges and universities was financed in part from rising institutional subsidies. At private research and bachelor's institutions, average subsidy levels increased by approximately 3 percent from 2012 to 2013, to $15,200 and $8,000 per student, respectively (see Figure 8). Private master's institutions, which tend to run on much thinner subsidies, averaged $2,200 per student in 2013—a reversal to historical subsidy levels after two consecutive years of sharp increases.

Figure 8.

Average Education and Related Spending per FTE Student, by Net Tuition and Subsidies, FY 2003–2013 (in 2013 Dollars)



Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

At public four-year colleges and universities, institutional subsidies rose an average of 2 to 3 percent from 2012 to 2013, the first increase since 2008. In 2013, public master's institutions had the smallest average subsidy level in the public sector ($5,900 per student), followed by public research institutions ($6,900 per student); public bachelor's institutions provided the highest subsidies ($7,400 per student).

The 2013 increases, however, were not enough to offset annual declines sustained during the prior four years. Average subsidy levels declined between 13 and 23 percent from 2003 to 2013, which translates into institutions providing, on average, $1,200 and $2,000 less funding per student than a decade earlier. Public research universities absorbed the largest declines among all public two- and four-year institutions. At community colleges, the average subsidy rose for a second year to $6,900 per student in 2013, representing a 7 percent increase. However, it was not enough to fully offset losses sustained during the recession.

Spending and Results: What Does the Money Buy?

Evaluating higher education performance and its relationship to spending helps identify whether colleges and universities are become more productive or efficient. Degree and completion ratios (awards per 100 FTE students), or throughput ratios, show the conversion of enrollments into degrees and certificates. They paint a broader—and more timely—picture of student success than frequently used graduation rates, which often capture only full-time, first-time students earning bachelor's degrees within six years of initial enrollment (or associate's degrees within four years). Throughput ratios include all students (full- and part-time, undergraduate and graduate) and all credentials awarded from subbaccalaureate degrees and certificates to postsecondary degrees and certificates. Comparisons between types of institutions show how successfully each moves students to completion, whereas trends identify which types of institutions have improved most over time.

Normalizing E&R spending by outputs—the number of completions (degrees and certificates)—allows comparisons of institutional efficiency. Declines in cost per completion indicate that institutions are producing more degrees at lower cost. And, although this measure does not account for differences in quality or degree mix, when observed over time, they provide an indication of whether institutions are becoming more efficient in degree production.

Across higher education, degree productivity was up sharply for the third consecutive year and reached a decade-long high in 2013.

Although record enrollments and tight budgets strained institutions during the 2008 recession and recovery, colleges and universities successfully moved students through programs and converted new students into new certificate and degree holders. Degree (and completion) productivity—the number of degrees (or degrees and certificates) awarded per 100 FTE student enrolled—increased across public and private institutions in 2013, marking the third year of increases across most types of institutions.

At public institutions, the increase in degree productivity came from a combination of higher than usual degree and certificate awards and a slowdown in FTE enrollment growth since 2010. At private institutions, degrees and certificates grew more slowly, but when combined with modest enrollment growth, the number of completions per 100 FTE also increased, most sharply in 2012.[4]

The number of completions per 100 students reached a decade-long high in 2013 at public and private institutions alike (see Figure 9). Public institutions showed the greatest improvement, producing three more credentials per 100 FTE students than a decade earlier, and public bachelor's institutions added one more credential per 100 FTE students. Community colleges had the largest boost in degree productivity, adding seven more credentials per 100 FTE students than in 2003, arising from both new degrees and certificates.

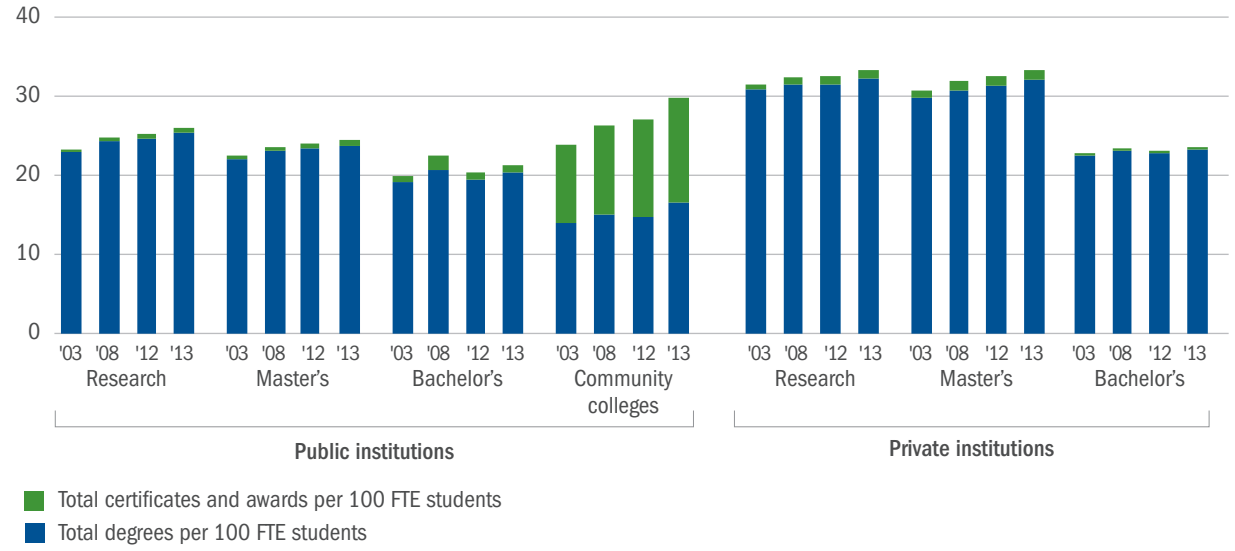
Institutions that are selective in their admissions and enroll highly motivated students, such as private research and master's universities, tend to have the highest degree productivity rates. Even with these already high initial rates, private research and master's institutions still produced two more credentials per FTE student in 2013 than in 2003.

[4] Public research universities and community colleges showed a significant increase in the number of credentials awarded beginning in 2010. Other public four-year institutions showed a higher than usual number of credentials awarded in 2011, and private institutions showed an uptick in 2012. By 2013, the number of degrees awarded had slowed across most types of institutions but continued to exceed enrollment growth.

Rising enrollments were first noticeable at open-access institutions such as public community colleges (2008) and public bachelor's colleges (2009). At other institutions, enrollment rose sharply in 2010. In 2012, enrollment slowed across all types of institution (averaging 1 percent or less, except at public master's institutions) and declined in community colleges; in 2013, enrollment growth slowed again and declined at open-access public institutions (see Appendix Figure A1).

Admission policies as well as the types of credentials offered also can influence degree productivity. Community colleges have high overall throughput rates partly as a consequence of many students completing short-term certificate programs. Since 2011, however, increases in community college completions were largely attributable to increases in degree productivity (although certificate productivity continued to increase as well). In addition, public bachelor's and community colleges, which typically have open-access admission policies, showed more change after the recession than other institutions did.

Figure 9.
Total Degrees and Completions per 100 FTE Students, FY 2003–2013



Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

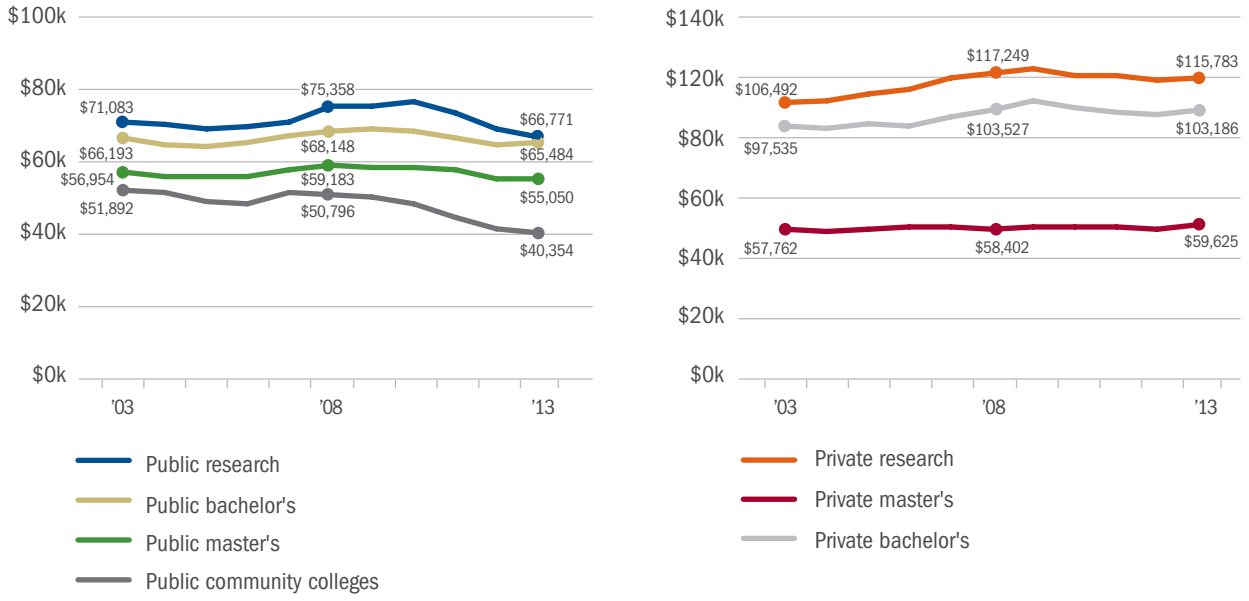
Public nonresearch colleges exhibited the lowest E&R cost per completion in a decade, but in all other types of institutions, costs per completion began to rise again in 2013.

Both public- and private-sector colleges and universities improved cost efficiency during the latter half of the 2003–2013 decade. The average E&R cost per completion continued to decline in public nonresearch institutions from 2012 to 2013 (see Figure 10). Average reductions at public master's, bachelor's, and community colleges ranged from 1 to 3 percent in 2013, with all posting the lowest cost per completion in a decade. At community colleges, the average cost per completion decreased 22 percent since 2003. At public research universities, in contrast, the cost per completion rose 1 percent from 2012 to 2013; nevertheless, spending remained 1 percent lower than a decade earlier. This one-year increase, paired with recent efficiency declines across the private sector, indicate that a broader reversal may be underway.

Among public institutions, the highest costs per completion were at bachelor's colleges ($66,800), which are usually smaller and thus do not benefit from economies of scale, and at research universities ($65,500), which have programs with higher costs. Costs per completion at public master's and community colleges averaged $55,100 and $40,600, respectively.

Modest efficiency improvements at some types of private institutions also appear to be ending. The average E&R cost per completion increased across all types of private institutions from 2012 to 2013. Private research and bachelor's institutions reduced costs per completion in recent years, which rose by only 1 percent in 2013; master's institutions showed little change during the economic recovery, but their spending per completion increased 2 percent in 2013. The average cost per completion, however, is substantially lower at private master's institutions ($59,600) than at private research universities ($115,800) and bachelor's colleges ($103,200).

Figure 10.
Average Education and Related Spending per Degree and Completion, FY 2003–2013 (in 2013 Dollars)



Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

Conclusions

Data from 2013 suggest that colleges and universities finally began to emerge from the financial ramifications of the 2008 recession. As enrollment growth moderated and even declined in institutions with less competitive admissions, colleges and universities spent more per student. Institutions continued to raise new revenue from student tuitions, but students were no longer paying higher tuition prices solely to offset other lost revenues. The proportion of the cost paid with student tuitions stabilized among public institutions and declined among private ones as institutions provided additional subsidies to help fund the spending expansion.

Public and private research universities and master's institutions were further ahead in the financial recovery than other types of institutions of higher education. Revenue and spending per student at other types of public institutions was still lower in 2013 than five years earlier in 2008. And although all types of institutions were raising more revenue and spending more money than they were a decade earlier, public nonresearch institutions had progressed the least.

One bright spot during the decade was the ability of colleges and universities to steadily turn new students into new graduates. Even as the recession brought a flood of new students who might otherwise not have enrolled, all types of colleges and universities increased degree (and certificate) productivity, with the sharpest increases a result of new students during the recession. And during this period, there were positive signs that when pressed, colleges could produce more with less as the cost per completion declined. Alas, cost per completion may again be on the rise.

More recent sources of information on revenues at public higher education institutions indicate their finances continued to improve in 2014.[5] Revenues per student rose once again, with contributions from both net tuition revenue and state and local appropriations. But students were provided a measure of relief with a decline in the proportion of revenues coming from net tuition. These revenue improvements suggest that spending also increased, but whether this new spending was invested in areas that benefit students, increase outcomes, and improve institutional efficiency remains to be seen.

[5] State Higher Education Executive Officers (SHEEO). (2015). *SHEF: FY2014: State higher education finance*. Boulder, CO: Author. Retrieved from http://www.sheeo.org/sites/default/files/project-files/SHEF FY 2014-20150410.pdf

Appendix

Figure A1.
FTE Enrollment, by Type of Institution, FY 2003–2013

	2003	2008	2012	2013	10-year change	1-year change
Public research	3,329,109	3,573,463	3,878,766	3,896,575	17.0%	0.5%
Public master's	1,869,070	2,034,231	2,213,088	2,209,770	18.2%	-0.1%
Public bachelor's	230,543	247,487	290,910	286,202	24.1%	-1.6%
Public community colleges	3,386,591	3,592,769	4,201,121	4,029,673	19.0%	-4.1%
Private research	883,236	958,182	1,031,815	1,037,001	17.4%	0.5%
Private master's	927,013	1,061,738	1,156,917	1,161,323	25.3%	0.4%
Private bachelor's	606,494	643,988	687,404	687,882	13.4%	0.1%

Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

Figure A2.

Average Revenues per FTE Student, FY 2003–2013 (in 2013 Dollars)

Public research institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Net tuition	$6,480	$7,090	$7,504	$7,793	$7,995	$8,146	$8,560	$9,110	$9,621	$10,008	$10,325
State and local appropriations	$10,253	$9,695	$9,484	$9,769	$10,129	$10,298	$9,470	$8,600	$8,269	$7,511	$7,395
Federal appropriations and federal, state, and local grants and contracts	$7,931	$8,177	$8,334	$8,355	$8,318	$8,217	$8,491	$8,721	$8,791	$8,228	$8,104
Auxiliary enterprises, hospitals, independent operations, and other sources	$9,704	$10,220	$10,307	$10,577	$10,919	$11,148	$11,617	$11,926	$12,204	$12,165	$12,546
Operating revenues (excluding PIE)	$34,368	$35,182	$35,629	$36,249	$37,105	$37,614	$37,959	$38,196	$38,729	$37,770	$38,278
Private and affiliated gifts, grants, contracts, investment returns, and endowment income (PIE)	$2,083	$2,199	$2,297	$2,497	$3,501	$1,661	-$349	$2,417	$2,927	$1,637	$2,468
Total operating revenue	$36,452	$37,382	$37,926	$38,746	$40,606	$39,275	$37,610	$40,612	$41,656	$39,407	$40,746

Public master's institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Net tuition	$4,867	$5,401	$5,685	$5,842	$5,982	$6,108	$6,336	$6,742	$6,993	$7,272	$7,388
State and local appropriations	$7,482	$7,105	$6,927	$7,132	$7,359	$7,582	$6,943	$6,309	$6,169	$5,633	$5,640
Federal appropriations and federal, state, and local grants and contracts	$2,228	$2,299	$2,129	$2,172	$2,201	$2,255	$2,178	$2,361	$2,321	$2,040	$2,047
Auxiliary enterprises, hospitals, independent operations, and other sources	$3,185	$3,284	$3,598	$3,483	$3,595	$3,627	$3,842	$4,014	$4,017	$3,888	$3,824
Operating revenues (excluding PIE)	$17,762	$18,089	$18,338	$18,538	$19,042	$19,475	$19,210	$19,346	$19,420	$18,761	$18,827
Private and affiliated gifts, grants, contracts, investment returns, and endowment income (PIE)	$356	$343	$379	$474	$643	$472	$278	$395	$406	$338	$407
Total operating revenue	$18,116	$18,430	$18,717	$19,012	$19,685	$19,945	$19,486	$19,742	$19,827	$19,098	$19,232

Public bachelor's institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Net tuition	$4,338	$4,784	$5,058	$5,280	$5,418	$5,548	$5,751	$6,071	$6,324	$6,486	$6,599
State and local appropriations	$7,938	$7,595	$7,415	$7,753	$8,423	$8,659	$8,031	$6,940	$6,845	$6,615	$6,689
Federal appropriations and federal, state, and local grants and contracts	$2,554	$2,491	$2,550	$2,690	$2,625	$2,694	$2,600	$2,840	$2,535	$2,374	$2,382
Auxiliary enterprises, hospitals, independent operations, and other sources	$3,793	$3,690	$3,694	$3,715	$3,977	$3,969	$4,102	$4,253	$4,419	$4,134	$3,835
Operating revenues (excluding PIE)	$18,622	$18,560	$18,717	$19,145	$20,015	$20,432	$20,077	$19,752	$19,776	$19,275	$19,167
Private and affiliated gifts, grants, contracts, investment returns, and endowment income (PIE)	$666	$642	$675	$738	$937	$721	$422	$667	$748	$534	$618
Total operating revenue	$19,280	$19,194	$19,383	$19,873	$20,940	$21,153	$20,499	$20,420	$20,514	$19,802	$19,778

Public community colleges	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Net tuition	$2,784	$2,978	$3,054	$3,125	$3,206	$3,223	$3,331	$3,482	$3,588	$3,763	$3,871
State and local appropriations	$6,765	$6,697	$6,704	$7,141	$7,500	$7,716	$7,181	$6,109	$5,905	$5,879	$6,148
Federal appropriations and federal, state, and local grants and contracts	$1,927	$1,963	$1,845	$1,883	$1,953	$1,996	$2,068	$1,942	$1,860	$1,725	$1,759
Auxiliary enterprises, hospitals, independent operations, and other sources	$1,378	$1,425	$1,325	$1,301	$1,331	$1,397	$1,334	$1,385	$1,368	$1,322	$1,286
Operating revenues (excluding PIE)	$12,795	$13,016	$12,891	$13,305	$13,849	$14,201	$13,792	$12,812	$12,618	$12,578	$12,948
Private and affiliated gifts, grants, contracts, investment returns, and endowment income (PIE)	$201	$184	$252	$321	$400	$321	$190	$164	$155	$152	$136
Total operating revenue	$12,987	$13,196	$13,139	$13,621	$14,242	$14,516	$13,979	$12,973	$12,770	$12,728	$13,082

Figure A2.

Average Revenues per FTE Student, FY 2003–2013 (in 2013 Dollars)

Private research institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Net tuition	$19,624	$19,930	$20,476	$20,439	$21,143	$21,380	$21,692	$21,861	$22,140	$22,176	$22,646
State and local appropriations	$1,085	$874	$774	$852	$893	$938	$792	$688	$859	$768	$760
Federal appropriations and federal, state, and local grants and contracts	$11,702	$12,565	$12,931	$12,507	$12,207	$11,980	$11,995	$12,335	$12,329	$11,777	$11,333
Auxiliary enterprises, hospitals, independent operations, and other sources	$20,097	$21,036	$22,022	$22,454	$23,709	$24,371	$23,467	$24,129	$26,095	$25,364	$26,361
Operating revenues (excluding PIE)	$51,366	$53,366	$55,364	$55,355	$57,029	$57,599	$56,986	$58,244	$60,604	$59,228	$60,259
Private and affiliated gifts, grants, contracts, investment returns, and endowment income (PIE)	$16,644	$32,726	$33,056	$36,065	$49,340	$16,588	-$32,149	$25,442	$41,120	$14,047	$30,182
Total operating revenue	$68,010	$86,092	$88,420	$91,420	$106,369	$74,187	$24,837	$83,686	$101,725	$73,275	$90,441

Private master's institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Net tuition	$13,855	$14,315	$14,695	$14,794	$15,255	$15,383	$15,933	$16,179	$16,313	$16,399	$16,557
State and local appropriations	$508	$481	$475	$460	$432	$465	$453	$345	$332	$329	$355
Federal appropriations and federal, state, and local grants and contracts	$1,069	$1,061	$960	$926	$862	$821	$859	$888	$847	$780	$743
Auxiliary enterprises, hospitals, independent operations, and other sources	$4,224	$4,377	$4,320	$4,507	$4,611	$4,376	$4,331	$4,348	$4,495	$4,518	$4,598
Operating revenues (excluding PIE)	$19,161	$19,728	$19,955	$20,218	$20,718	$20,587	$21,127	$21,415	$21,636	$21,682	$21,876
Private and affiliated gifts, grants, contracts, investment returns, and endowment income (PIE)	$3,174	$5,193	$4,576	$4,922	$6,221	$2,792	-$1,373	$3,739	$5,143	$1,814	$4,659
Total operating revenue	$22,335	$24,921	$24,531	$25,140	$26,939	$23,378	$19,754	$25,154	$26,778	$23,495	$26,535

Private bachelor's institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Net tuition	$13,010	$13,435	$13,743	$13,951	$14,329	$14,530	$14,944	$15,158	$15,182	$15,159	$15,164
State and local appropriations	$425	$376	$341	$466	$507	$607	$565	$436	$515	$394	$358
Federal appropriations and federal, state, and local grants and contracts	$1,806	$1,660	$1,650	$1,597	$1,546	$1,441	$1,486	$1,490	$1,413	$1,281	$1,280
Auxiliary enterprises, hospitals, independent operations, and other sources	$6,570	$7,896	$7,045	$7,210	$6,789	$6,811	$7,241	$6,935	$7,227	$7,128	$7,322
Operating revenues (excluding PIE)	$21,248	$22,850	$22,302	$22,648	$22,573	$22,698	$23,595	$23,505	$23,744	$23,477	$23,637
Private and affiliated gifts, grants, contracts, investment returns, and endowment income (PIE)	$8,115	$15,978	$13,326	$15,284	$22,055	$6,172	-$8,949	$13,194	$18,253	$5,410	$14,462
Total operating revenue	$29,345	$38,793	$35,599	$37,899	$44,628	$28,871	$14,666	$36,641	$41,917	$28,874	$38,068

Note. The federal grants category excludes Pell grants; they are included in net tuition revenue. Investment returns include unrealized gains/losses. Data may not sum to totals because revenues were summed at the institution level before calculating aggregate category averages.
Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

Figure A3.

Average Expenditures per FTE Student, FY 2003–2013 (in 2013 Dollars)

Public research institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Instruction	$9,860	$9,740	$9,840	$9,994	$10,253	$10,453	$10,575	$10,660	$10,605	$10,547	$10,783
Research	$5,672	$5,808	$5,846	$5,786	$5,795	$5,857	$6,018	$6,289	$6,373	$6,243	$6,213
Student services	$1,300	$1,309	$1,324	$1,358	$1,391	$1,427	$1,466	$1,490	$1,495	$1,528	$1,590
Public service	$2,020	$2,072	$2,063	$2,029	$2,056	$2,110	$2,081	$2,143	$2,123	$2,084	$2,062
Academic support	$2,509	$2,522	$2,560	$2,643	$2,716	$2,974	$3,016	$3,094	$2,969	$3,047	$3,150
Institutional support	$2,335	$2,303	$2,339	$2,435	$2,548	$2,676	$2,682	$2,668	$2,630	$2,599	$2,695
Operations and maintenance	$2,023	$2,089	$2,160	$2,311	$2,352	$2,321	$2,289	$1,902	$1,923	$1,905	$1,932
Net scholarships and fellowships	$1,170	$1,094	$1,144	$1,151	$1,178	$1,200	$1,263	$1,509	$1,566	$1,477	$1,454
Education and general	$26,863	$26,912	$27,248	$27,679	$28,252	$28,983	$29,353	$29,713	$29,655	$29,403	$29,851
Auxiliary enterprises, hospitals, and independent and other operations	$7,517	$7,685	$7,768	$8,021	$8,221	$8,820	$9,035	$9,244	$9,498	$9,703	$9,942
Total operating expenditures	$34,380	$34,598	$35,016	$35,700	$36,473	$37,802	$38,388	$38,958	$39,153	$39,106	$39,793
Education and related	$15,424	$15,302	$15,502	$15,937	$16,397	$16,848	$17,021	$16,875	$16,753	$16,759	$17,252
Research and related	$7,601	$7,775	$7,860	$7,863	$7,910	$8,073	$8,269	$8,496	$8,530	$8,404	$8,396
Public service and related	$2,700	$2,772	$2,775	$2,761	$2,808	$2,903	$2,841	$2,880	$2,836	$2,791	$2,776
Net scholarships and fellowships	$1,170	$1,094	$1,144	$1,151	$1,178	$1,200	$1,263	$1,509	$1,566	$1,477	$1,454
Education and general	$26,863	$26,912	$27,248	$27,679	$28,252	$28,983	$29,353	$29,713	$29,655	$29,403	$29,851
Auxiliary enterprises, hospitals, and independent and other operations	$7,517	$7,685	$7,768	$8,021	$8,221	$8,820	$9,035	$9,244	$9,498	$9,703	$9,942
Total operating expenditures	$34,380	$34,598	$35,016	$35,700	$36,473	$37,802	$38,388	$38,958	$39,153	$39,106	$39,793

Public master's institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Instruction	$6,400	$6,349	$6,352	$6,398	$6,575	$6,789	$6,812	$6,851	$6,928	$6,791	$6,879
Research	$403	$403	$434	$439	$428	$431	$421	$458	$448	$439	$426
Student services	$1,329	$1,326	$1,363	$1,380	$1,429	$1,508	$1,532	$1,557	$1,581	$1,580	$1,636
Public service	$750	$737	$720	$730	$720	$700	$694	$673	$665	$607	$610
Academic support	$1,496	$1,494	$1,516	$1,526	$1,554	$1,603	$1,639	$1,628	$1,616	$1,604	$1,670
Institutional support	$2,129	$2,124	$2,048	$2,084	$2,144	$2,210	$2,179	$2,189	$2,154	$2,176	$2,212
Operations and maintenance	$1,547	$1,533	$1,654	$1,748	$1,750	$1,800	$1,778	$1,469	$1,464	$1,433	$1,460
Net scholarships and fellowships	$1,075	$1,039	$979	$935	$950	$996	$1,096	$1,364	$1,482	$1,352	$1,305
Education and general	$15,045	$14,916	$14,986	$15,165	$15,481	$15,955	$16,074	$16,129	$16,273	$15,923	$16,140
Auxiliary enterprises, hospitals, and independent and other operations	$2,588	$2,618	$2,646	$2,653	$2,740	$2,991	$3,080	$3,202	$3,243	$3,327	$3,170
Total operating expenditures	$17,633	$17,534	$17,632	$17,818	$18,221	$18,945	$19,154	$19,330	$19,516	$19,249	$19,310
Education and related	$12,332	$12,256	$12,359	$12,544	$12,873	$13,332	$13,372	$13,150	$13,223	$13,070	$13,336
Research and related	$616	$618	$670	$681	$668	$665	$649	$689	$671	$661	$645
Public service and related	$1,136	$1,122	$1,095	$1,113	$1,092	$1,067	$1,057	$1,011	$986	$920	$932
Net scholarships and fellowships	$1,075	$1,039	$979	$935	$950	$996	$1,096	$1,364	$1,482	$1,352	$1,305
Education and general	$15,045	$14,916	$14,986	$15,165	$15,481	$15,955	$16,074	$16,129	$16,273	$15,923	$16,140
Auxiliary enterprises, hospitalsm and independent and ther operations	$2,588	$2,618	$2,646	$2,653	$2,740	$2,991	$3,080	$3,202	$3,243	$3,327	$3,170
Total operating expenditures	$17,633	$17,534	$17,632	$17,818	$18,221	$18,945	$19,154	$19,330	$19,516	$19,249	$19,310

Figure A3.

Average Expenditures per FTE Student, FY 2003–2013 (in 2013 Dollars)

Public bachelor's institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Instruction	$6,091	$5,982	$5,971	$6,057	$6,365	$6,565	$6,542	$6,537	$6,596	$6,534	$6,599
Research	$510	$495	$518	$483	$470	$452	$443	$455	$430	$455	$466
Student services	$1,720	$1,691	$1,674	$1,682	$1,747	$1,819	$1,782	$1,806	$1,804	$1,843	$1,911
Public service	$747	$649	$691	$711	$619	$596	$577	$552	$575	$539	$536
Academic support	$1,496	$1,400	$1,408	$1,453	$1,536	$1,597	$1,570	$1,592	$1,578	$1,563	$1,638
Institutional support	$2,401	$2,419	$2,449	$2,512	$2,607	$2,729	$2,704	$2,619	$2,636	$2,692	$2,669
Operations and maintenance	$1,830	$1,865	$1,959	$2,126	$2,182	$2,186	$2,137	$1,662	$1,712	$1,680	$1,740
Net scholarships and fellowships	$1,241	$1,168	$1,118	$1,088	$1,084	$1,132	$1,076	$1,361	$1,427	$1,317	$1,369
Education and general	$15,743	$15,416	$15,487	$15,826	$16,370	$16,860	$16,621	$16,383	$16,577	$16,461	$16,769
Auxiliary enterprises, hospitals, and independent and other operations	$3,085	$2,927	$3,007	$3,123	$3,242	$3,818	$3,545	$3,929	$3,890	$3,941	$3,630
Total operating expenditures	$18,750	$18,344	$18,456	$18,909	$19,612	$20,678	$20,165	$20,263	$20,418	$20,352	$20,352
Education and related	$12,939	$12,806	$12,893	$13,238	$13,879	$14,354	$14,213	$13,733	$13,827	$13,810	$14,044
Research and related	$789	$769	$818	$768	$762	$725	$714	$713	$682	$718	$736
Public service and related	$1,242	$1,076	$1,140	$1,196	$1,030	$990	$951	$884	$917	$865	$864
Net scholarships and fellowships	$1,241	$1,168	$1,118	$1,088	$1,084	$1,132	$1,076	$1,361	$1,427	$1,317	$1,369
Education and general	$15,743	$15,416	$15,487	$15,826	$16,370	$16,860	$16,621	$16,383	$16,577	$16,461	$16,769
Auxiliary enterprises, hospitals, and independent and other operations	$3,085	$2,927	$3,007	$3,123	$3,242	$3,818	$3,545	$3,929	$3,890	$3,941	$3,630
Total operating expenditures	$18,750	$18,344	$18,456	$18,909	$19,612	$20,678	$20,165	$20,263	$20,418	$20,352	$20,352

Public community colleges	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Instruction	$5,238	$5,221	$5,235	$5,377	$5,575	$5,662	$5,491	$5,119	$5,065	$5,157	$5,402
Research	$62	$47	$56	$73	$55	$46	$75	$62	$68	$54	$58
Student services	$1,272	$1,252	$1,271	$1,297	$1,358	$1,363	$1,358	$1,269	$1,233	$1,286	$1,360
Public service	$423	$393	$391	$395	$378	$389	$374	$342	$323	$324	$330
Academic support	$1,011	$991	$1,002	$1,032	$1,059	$1,092	$1,060	$978	$962	$998	$1,052
Institutional support	$1,805	$1,853	$1,833	$1,891	$1,970	$2,042	$1,985	$1,802	$1,804	$1,854	$1,971
Operations and maintenance	$1,194	$1,179	$1,197	$1,285	$1,330	$1,343	$1,308	$1,110	$1,079	$1,098	$1,145
Net scholarships and fellowships	$1,303	$1,214	$1,115	$1,032	$991	$1,082	$1,247	$1,727	$1,860	$1,718	$1,634
Education and general	$12,028	$11,883	$11,834	$12,114	$12,479	$12,762	$12,605	$12,136	$12,132	$12,244	$12,707
Auxiliary enterprises, hospitals, and independent and other operations	$1,086	$1,168	$1,151	$1,132	$1,225	$1,333	$1,425	$1,449	$1,483	$1,471	$1,464
Total operating expenditures	$13,046	$12,992	$12,930	$13,186	$13,636	$14,035	$13,962	$13,528	$13,556	$13,654	$14,090
Education and related	$10,357	$10,335	$10,382	$10,720	$11,144	$11,335	$11,034	$10,142	$10,015	$10,267	$10,804
Research and related	$96	$75	$92	$117	$86	$73	$115	$95	$102	$83	$89
Public service and related	$661	$622	$614	$627	$599	$617	$595	$534	$504	$505	$516
Net scholarships and fellowships	$1,303	$1,214	$1,115	$1,032	$991	$1,082	$1,247	$1,727	$1,860	$1,718	$1,634
Education and general	$12,028	$11,883	$11,834	$12,114	$12,479	$12,762	$12,605	$12,136	$12,132	$12,244	$12,707
Auxiliary enterprises, hospitals, and independent and other operations	$1,086	$1,168	$1,151	$1,132	$1,225	$1,333	$1,425	$1,449	$1,483	$1,471	$1,464
Total operating expenditures	$13,046	$12,992	$12,930	$13,186	$13,636	$14,035	$13,962	$13,528	$13,556	$13,654	$14,090

Figure A3.

Average Expenditures per FTE Student, FY 2003–2013 (in 2013 Dollars)

Private research institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Instruction	$19,370	$19,577	$20,079	$19,993	$20,872	$20,981	$21,457	$21,027	$21,038	$21,200	$21,410
Research	$11,790	$12,263	$12,619	$12,344	$12,246	$12,182	$12,380	$12,734	$13,169	$12,851	$12,249
Student services	$3,003	$3,039	$3,179	$3,320	$3,445	$3,512	$3,668	$3,657	$3,678	$3,748	$3,901
Public service	$1,663	$1,517	$1,548	$1,396	$1,387	$1,412	$1,412	$1,383	$1,391	$1,368	$1,238
Academic support	$5,091	$5,117	$5,199	$5,407	$5,590	$5,855	$6,046	$5,905	$5,977	$6,002	$6,232
Institutional support	$6,502	$6,649	$6,736	$6,832	$7,075	$7,433	$7,549	$7,262	$7,153	$7,176	$7,223
Operations and maintenance	$3,278	$3,701	$3,849	$4,171	$4,064	$4,294	$4,539	$4,237	$3,914	$3,842	$4,101
Net scholarships and fellowships	$1,506	$1,630	$1,447	$1,298	$1,343	$1,368	$1,491	$1,484	$1,426	$1,646	$1,687
Education and general	$48,297	$49,265	$50,544	$50,767	$52,064	$53,156	$54,524	$53,644	$53,761	$53,664	$54,097
Auxiliary enterprises, hospitals, and independent and other operations	$14,779	$14,906	$15,145	$15,353	$15,522	$15,754	$16,541	$16,792	$16,739	$17,104	$17,675
Total operating expenditures	$62,930	$63,876	$65,389	$65,816	$67,432	$68,598	$70,901	$70,270	$70,335	$70,599	$71,597
Education and related	$32,844	$33,178	$34,128	$34,605	$36,041	$36,887	$37,870	$36,934	$36,670	$36,950	$37,812
Research and related	$16,598	$17,177	$17,625	$17,599	$17,402	$17,681	$18,099	$18,440	$18,886	$18,530	$17,941
Public service and related	$2,385	$2,182	$2,234	$2,039	$2,049	$2,098	$2,099	$2,037	$2,050	$2,030	$1,862
Net scholarships and fellowships	$1,506	$1,630	$1,447	$1,298	$1,343	$1,368	$1,491	$1,484	$1,426	$1,646	$1,687
Education and general	$48,297	$49,265	$50,544	$50,767	$52,064	$53,156	$54,524	$53,644	$53,761	$53,664	$54,097
Auxiliary enterprises, hospitals, and independent and other operations	$14,779	$14,906	$15,145	$15,353	$15,522	$15,754	$16,541	$16,792	$16,739	$17,104	$17,675
Total operating expenditures	$62,930	$63,876	$65,389	$65,816	$67,432	$68,598	$70,901	$70,270	$70,335	$70,599	$71,597

Private master's institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Instruction	$7,252	$7,336	$7,381	$7,420	$7,575	$7,529	$7,715	$7,663	$7,731	$7,848	$7,995
Research	$660	$652	$625	$546	$539	$527	$504	$538	$504	$494	$486
Student services	$2,601	$2,659	$2,712	$2,794	$2,893	$2,915	$3,003	$3,021	$3,093	$3,211	$3,352
Public service	$683	$642	$577	$551	$548	$545	$544	$509	$520	$450	$434
Academic support	$1,724	$1,778	$1,784	$1,771	$1,812	$1,822	$1,848	$1,807	$1,842	$1,884	$1,932
Institutional support	$3,910	$3,936	$3,989	$3,969	$4,107	$4,106	$4,197	$4,071	$4,066	$4,164	$4,180
Operations and maintenance	$1,502	$1,542	$1,555	$1,571	$1,581	$1,628	$1,624	$1,536	$1,504	$1,512	$1,530
Net scholarships and fellowships	$1,472	$1,373	$1,459	$1,015	$1,132	$1,026	$1,043	$1,150	$1,042	$673	$559
Education and general	$17,752	$17,766	$17,907	$17,880	$18,340	$18,356	$18,740	$18,599	$18,720	$19,020	$19,362
Auxiliary enterprises, hospitals, and independent and other operations	$3,379	$3,358	$3,285	$3,340	$3,341	$3,424	$3,505	$3,318	$3,314	$3,368	$3,371
Total operating expenditures	$21,081	$21,063	$21,133	$21,180	$21,631	$21,728	$22,151	$21,836	$21,964	$22,317	$22,662
Education and related	$16,712	$16,747	$16,941	$17,085	$17,543	$17,591	$17,989	$17,833	$17,987	$18,401	$18,782
Research and related	$1,025	$1,014	$992	$880	$852	$847	$817	$855	$808	$793	$783
Public service and related	$1,119	$1,047	$956	$922	$926	$904	$906	$867	$872	$747	$706
Net scholarships and fellowships	$1,472	$1,373	$1,459	$1,015	$1,132	$1,026	$1,043	$1,150	$1,042	$673	$559
Education and general	$17,752	$17,766	$17,907	$17,880	$18,340	$18,356	$18,740	$18,599	$18,720	$19,020	$19,362
Auxiliary enterprises, hospitals, and independent and other operations	$3,379	$3,358	$3,285	$3,340	$3,341	$3,424	$3,505	$3,318	$3,314	$3,368	$3,371
Total operating expenditures	$21,081	$21,063	$21,133	$21,180	$21,631	$21,728	$22,151	$21,836	$21,964	$22,317	$22,662

Figure A3.

Average Expenditures per FTE Student, FY 2003–2013 (in 2013 Dollars)

Private bachelor's institutions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Instruction	$8,610	$8,729	$8,792	$8,782	$8,969	$9,112	$9,227	$9,016	$8,979	$9,010	$9,060
Research	$860	$891	$921	$887	$864	$840	$839	$855	$833	$838	$797
Student services	$3,657	$3,727	$3,813	$3,932	$4,077	$4,169	$4,298	$4,190	$4,250	$4,345	$4,453
Public service	$840	$735	$674	$653	$671	$610	$629	$623	$654	$692	$746
Academic support	$2,111	$2,155	$2,153	$2,184	$2,236	$2,252	$2,312	$2,254	$2,208	$2,199	$2,217
Institutional support	$5,303	$5,319	$5,277	$5,389	$5,533	$5,640	$5,691	$5,453	$5,404	$5,453	$5,456
Operations and maintenance	$2,101	$2,308	$2,339	$2,363	$2,447	$2,466	$2,467	$2,275	$2,298	$2,257	$2,347
Net scholarships and fellowships	$2,896	$2,946	$2,961	$1,846	$1,716	$1,718	$1,902	$1,823	$1,599	$1,365	$1,136
Education and general	$23,082	$23,183	$23,241	$23,149	$23,699	$24,066	$24,473	$23,873	$23,819	$23,926	$24,157
Auxiliary enterprises, hospitals, and independent and other operations	$5,510	$5,541	$5,511	$5,711	$5,731	$5,752	$5,614	$5,383	$5,350	$5,365	$5,357
Total operating expenditures	$28,508	$28,639	$28,644	$28,748	$29,318	$29,718	$30,001	$29,198	$29,122	$29,244	$29,479
Education and related	$21,393	$21,452	$21,639	$21,905	$22,526	$22,972	$23,344	$22,767	$22,734	$22,860	$23,138
Research and related	$1,410	$1,487	$1,522	$1,468	$1,453	$1,413	$1,420	$1,433	$1,427	$1,434	$1,349
Public service and related	$1,449	$1,243	$1,142	$1,101	$1,129	$1,018	$1,060	$1,041	$1,109	$1,149	$1,220
Net scholarships and fellowships	$2,896	$2,946	$2,961	$1,846	$1,716	$1,718	$1,902	$1,823	$1,599	$1,365	$1,136
Education and general	$23,082	$23,183	$23,241	$23,149	$23,699	$24,066	$24,473	$23,873	$23,819	$23,926	$24,157
Auxiliary enterprises, hospitals, and independent and other operations	$5,510	$5,541	$5,511	$5,711	$5,731	$5,752	$5,614	$5,383	$5,350	$5,365	$5,357
Total operating expenditures	$28,508	$28,639	$28,644	$28,748	$29,318	$29,718	$30,001	$29,198	$29,122	$29,244	$29,479

Note. The federal grants category excludes Pell grants; they are included in net tuition revenue. Investment returns include unrealized gains/losses. Data may not sum to totals because revenues were summed at the institution level before calculating aggregate category averages.
Source: Delta Cost Project IPEDS Database 1987–2013 (11-year matched set).

Figure A4-1.

One-Year Change in Key Financial Metrics, FY 2012–2013

	Revenue per FTE student[1] (percent)	State and local appropriations per FTE student (percent)	Education and related (E&R) spending per FTE student (percent)	Net tuition share of E&R spending (percentage point)	Completions per 100 FTE student (number)	E&R cost per completion (percent)
Public research institutions	1.3%	-1.5%	2.9%	0.3	0.36	1.4%
Public master's institutions	0.4%	0.1%	2.0%	-0.2	0.68	-0.6%
Public bachelor's institutions	-0.6%	1.1%	1.7%	-0.1	0.94	-3.0%
Public community colleges institutions	2.9%	4.6%	5.2%	-1.0	1.93	-2.7%
Private research institutions	1.7%	---	2.3%	-0.1	0.53	0.9%
Private master's institutions	0.9%	---	2.1%	-1.2	0.16	1.9%
Private bachelor's institutions	0.7%	---	1.2%	-1.2	0.05	1.2%

[1] Operating revenue, excluding private and affiliated gifts, grants, contracts, investment returns, and endowment income (PIE)
Note. Green shading indicates an increase of 0.5 percent or higher; orange shading indicates a decrease of 0.5 percent or lower; gray shading indicates a change between 0.5 and -0.5.

Figure A4-2.

Five-Year Change in Key Financial Metrics, FY 2008–2013

	Revenue per FTE student[1] (percent)	State and local appropriations per FTE student (percent)	Education and related (E&R) spending per FTE student (percent)	Net tuition share of E&R spending (percentage point)	Completions per 100 FTE student (number)	E&R cost per completion (percent)
Public research institutions	1.8%	-28.2%	2.4%	11.9	1.47	-3.9%
Public master's institutions	-3.3%	-25.6%	0.0%	9.7	1.47	-7.0%
Public bachelor's institutions	-6.2%	-22.7%	-2.2%	8.5	0.62	-11.4%
Public community colleges institutions	-8.8%	-20.3%	-4.7%	7.4	4.44	-20.6%
Private research institutions	4.6%	---	2.5%	2.5	1.33	-1.3%
Private master's institutions	6.3%	---	6.8%	0.0	1.26	2.1%
Private bachelor's institutions	4.1%	---	0.7%	2.5	0.36	-0.3%

[1] Operating revenue, excluding private and affiliated gifts, grants, contracts, investment returns, and endowment income (PIE)
Note. Green shading indicates an increase of 0.5 percent or higher; orange shading indicates a decrease of 0.5 percent or lower; gray shading indicates a change between 0.5 and –0.5.

Figure A4-3.

Ten-Year Change in Key Financial Metrics, FY 2003–2013

	Revenue per FTE student[1] (percent)	State and local appropriations per FTE student (percent)	Education and related (E&R) spending per FTE student (percent)	Net tuition share of E&R spending (percentage point)	Completions per 100 FTE student (number)	E&R cost per completion (percent)
Public research institutions	11.4%	-27.9%	11.9%	18.5	2.90	-1.1%
Public master's institutions	6.0%	-24.6%	8.1%	16.3	2.55	-3.3%
Public bachelor's institutions	2.9%	-15.7%	8.5%	14.2	2.37	-6.1%
Public community colleges institutions	1.2%	-9.1%	4.3%	9.9	7.07	-22.2%
Private research institutions	17.3%	---	15.1%	3.5	1.94	8.7%
Private master's institutions	14.2%	---	12.4%	3.9	2.29	3.2%
Private bachelor's institutions	11.2%	---	8.2%	4.6	0.54	5.8%

[1] Operating revenue, excluding private and affiliated gifts, grants, contracts, investment returns, and endowment income (PIE)
Note. Green shading indicates an increase of 0.5 percent or higher; orange shading indicates a decrease of 0.5 percent or lower; gray shading indicates a change between 0.5 and –0.5.

About the Delta Cost Project

The Delta Cost Project at American Institutes for Research provides data and tools to help higher education administrators and policymakers improve college affordability by controlling institutional costs and increasing productivity. The work is animated by the belief that college costs can be contained without sacrificing access or educational quality through better use of data to inform strategic decision making. For more information about the Delta Cost Project, visit **www.deltacostproject.org.**

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