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Labor Intensive or Labor Expensive?

Changing Staffing and Compensation Patterns in Higher Education

Overview

Skyrocketing college tuitions and trillion-dollar student loan debt have put college and university spending in the spotlight. Policymakers, parents, and students are asking why tuitions at public four-year colleges and universities have soared nearly 160 percent since 1990[1] and whether excessive spending is at fault.

The rise in college spending has been blamed on factors ranging from broad economic trends outside higher education's control that drive up the price of highly educated workers to an all-out competition among colleges vying for prestige, excellence, and high rankings (Archibald & Feldman, 2011; Bowen, 1980; Baumol & Bowen, 1966). Many also point to declining faculty workloads, generous salaries and perks for top university employees, wasteful spending, and growing "administrative bloat" (Ginsburg, 2011a; Vedder, Matgouranis, & Robe, 2011; Greene, Kisida, & Mills, 2010; Belkin & Thurm, 2012; Hechinger, 2012).

Whatever role these factors play, higher education's workforce must be considered in any analysis of rising costs. The higher education workforce—from tenured professors to part-time adjuncts, and from executives and professionals to support staff—is changing rapidly.

This report looks at long-term employment changes on college and university campuses during the past two decades and examines fluctuations in faculty staffing patterns, growth in administrative positions, and the effects of the recent recession on long-standing employment trends. It goes beyond other studies (Zaback, 2011; Bennett, 2009) to explore the effects of these staffing changes on total compensation, institutional spending patterns, and ultimately tuitions.

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The overarching trends show that between 2000 and 2012, the public and private nonprofit higher education workforce grew by 28 percent, more than 50 percent faster than the previous decade. But the proportion of staff to students at public institutions grew slower in the 2000s than in the 1990s because the recent expansion in new positions largely mirrored rising enrollments as the Millennial Generation entered college. By 2012, public research universities and community colleges employed 16 *fewer* staff per 1,000 full-time equivalent (FTE) students compared with 2000, while the number of staff per student at public master's and bachelor's colleges remained unchanged.

Data

The data in this report come from the Delta Cost Project Database, 1987–2010. It includes data reported by institutions to the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS), and has been harmonized (when possible) to account for survey changes over time. Staffing and faculty salary data from the 2011 Fall Staff Survey (e.g., 2011–12 school year, or 2012 academic year) were appended onto the Delta Cost Project Database to show the most current staffing data available. All spending data are shown in 2010 dollars and were adjusted using the Consumer Price Index for All Urban Consumers (CPI-U), on a fiscal-year basis.

The report focuses primarily on the 12-year period from 2000 to 2012, although it also extends back to 1990 on many measures to provide additional context. Data on staffing and labor costs may be shown for different periods depending on data availability and reliability.

Findings are presented for public and private, nonprofit four-year institutions and public community colleges, organized by 2005 Carnegie Classification. Institutions may award many types of degrees and certificates, although the Carnegie Classification denotes the highest type of degree typically offered as follows:

- 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.

Source: Carnegie Foundation for the Advancement of Teaching, 2013.

At private colleges, in the wake of accelerated hiring, the proportion of staff to students rose. Private institutions employed, on average, 15 to 26 *additional* workers per 1,000 FTE students between 2000 and 2012. And even during the Great Recession, many public and private colleges kept hiring in response to the uptick in new students.

Other Key Findings

- **Growth in administrative jobs was widespread across higher education—but creating new professional positions, rather than executive and managerial positions, is what drove the increase.** Professional positions (for example, business analysts, human resources staff, and admissions staff) grew twice as fast as executive and managerial positions at public nonresearch institutions between 2000 and 2012, and outpaced enrollment growth.

- **Colleges and universities have invested in professional jobs that provide noninstructional *student* services, not just business support.** Across all educational sectors, wage and salary expenditures for student services (per FTE staff) were the fastest growing salary expense in many types of institutions between 2002 and 2012.

- **Part-time faculty/graduate assistants typically account for at least half of the instructional staff in most higher education sectors.** Institutions have continued to hire full-time faculty, but at a pace that either equaled or lagged behind student enrollments; these new hires also were likely to fill non-tenure-track positions.

- **Part-time faculty (and graduate assistants) provided additional capacity at well-funded research universities and private colleges, but replaced new, full-time positions at broadly accessible, public master's and bachelor's institutions.**

- **As the ranks of managerial and professional administrative workers grew, the number of faculty and staff per administrator continued to decline.** The average number of faculty and staff per administrator declined by roughly 40 percent in most types of four-year colleges and universities between 1990 and 2012, and now averages 2.5 or fewer faculty and staff per administrator.

Hiring at colleges and universities increased briskly during the past decade, but so did enrollments. As public institutions sought to balance hiring against rising enrollments, private institutions added new employees much faster than new students.

- **Faculty salaries were not the leading cause of rising college tuitions during the past decade. Increased benefits costs, nonfaculty positions added elsewhere on campus, declines in state and institutional subsidies, and other factors all played a role.** The average salary outlay per full-time faculty member has stayed essentially flat from 2002 to 2010. But additional savings from shifting to part-time instructors have not been enough to offset the costs associated with continued hiring and rising benefits expenditures. Compensation costs per FTE student have continued to rise modestly at most four-year institutions as a consequence of these staffing, salary, and benefits changes. Tuition prices increased even faster, however, as tuition dollars replaced revenue lost from other sources.

Where's the Job Growth in Higher Education?

As the rest of the economy plunged into the Great Recession of 2008, higher education continued to hire new workers amid a surge of new students enrolling in college. But the hiring surge began nearly a decade before, when schools ramped up for the Millennials enrolling in college.

Total Employment

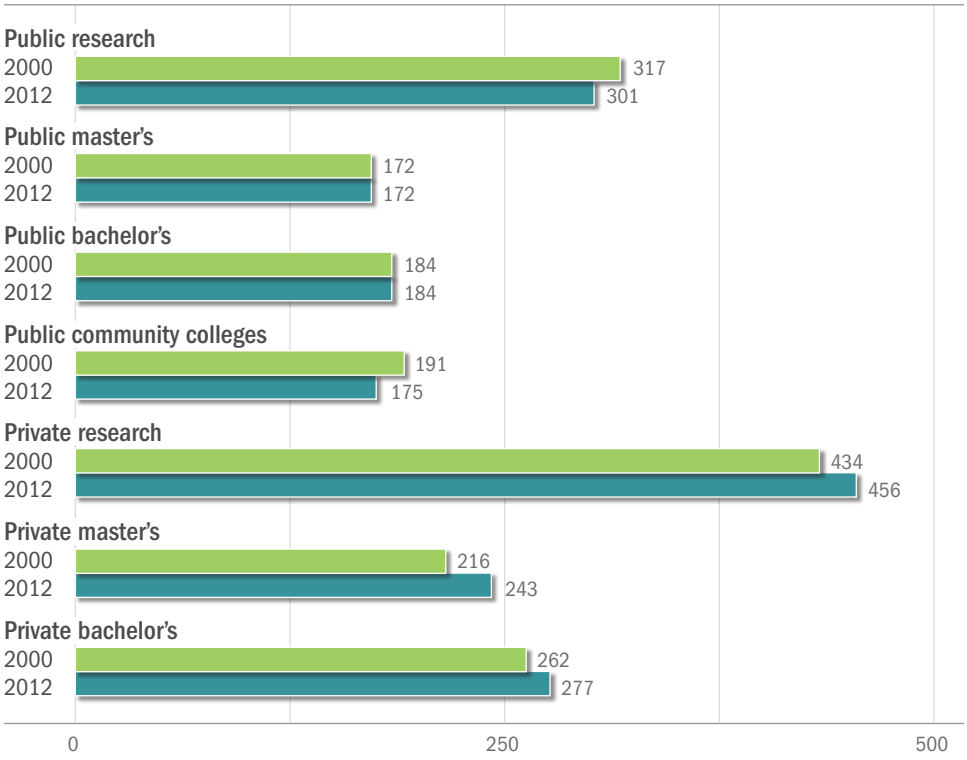
Total employment rose by more than 25 percent between 2000 and 2012, expanding faster than the previous decade (16 percent). But student enrollment also increased as the Millennials entered college. For most of this period, the combination of rising enrollments and two economic recessions blunted any significant increase in the ratio of employees to students at public institutions, but did not deter growth at private institutions. Public institutions already experienced an earlier surge in the 1990s, when the number of staff expanded relative to the number of students (see Appendix Table 1).

Unlike many other sectors of the economy hit hard by the 2008 recession, higher education continued to add new workers. As the recession took hold, rising student enrollments—rather than a slowdown in hiring—led to the first declines in the number of employees per FTE students at public institutions since 2008. By 2012, public research universities and community colleges had 16 fewer workers for every 1,000 FTE students (a decline of 5 to 9 percent), while the number of staff per FTE student at public master's and bachelor's colleges remained unchanged compared with 2000 (see Figure 1).

Figure 1

Private institutions have added employees faster than students, while public institutions have struggled to keep pace

Average headcount employees per 1,000 FTE students, FY 2000 and FY 2012



Note: Includes graduate assistants.
Source: Delta Cost Project IPEDS Database, 1987–2010, 24-year matched set; IPEDS Fall Staff Survey, 2011.

Private colleges avoided similar declines during the 2008 recession. By 2012, they had added 15 to 26 more workers per 1,000 FTE students compared with 2000 (growing 5 to 12 percent). Many of these new private-sector hires filled part-time positions. But even after adjusting for these differences, the number of private-college employees per student still increased 3 to 5 percent, while the number of public-college employees per student declined by 3 to 12 percent (see Appendix Table 1).

Public institutions have traditionally displayed the leanest staff-to-student ratios in higher education. Research institutions (both public and private) consistently show higher relative staffing levels, which reflects the additional staff needed to run and support their research missions. Private institutions average higher staffing ratios, in part, because they tend to have more resources. Economy of scale also is a factor; in smaller private institutions, fixed administrative and overhead costs must be spread across a smaller student population.

Definitions

The faculty and staffing categories used in this report follow the federal IPEDS reporting categories and definitions.

Instructional staff

- **Full-time faculty:** Staff whose primary responsibility is instruction, research, public service, or a combination of these roles. Faculty may hold the rank of professor, associate professor, assistant professor, instructor, lecturer, or equivalent; faculty may be on tenure track, not on tenure track, or "without faculty status."
- **Part-time faculty:** Staff whose primary responsibility is instruction, research, public service, or a combination of these roles; part-time designation is determined by the institution.
- **Graduate assistants/instructors:** Students employed part time to assist with classroom or laboratory instruction, or to conduct research.

Administrative staff

- **Executive, administrative, and managerial (EAM):** Positions where work is directly related to management policies or general business operations of the university. Examples include presidents, vice presidents, managers, provosts, and deans. Assistant and associate positions (e.g., assistant deans, associate department heads) also are included if their principal activity is administration, not instruction. (Deans and department heads whose principal activity is instruction, research, or public service are classified as faculty/instructors.)
- **Professional (support and service):** Positions that provide student services, academic, or professional support and generally require a bachelor's degree. Examples include business/financial analysts, human resources staff, computer administrators, counselors, lawyers, librarians, athletic staff, and health workers.

Nonprofessional support staff

- **Technical and paraprofessional:** Positions that require specialized knowledge but provide support to professional staff. Examples include math, science, and health technicians, and paralegals.
- **Clerical and secretarial:** Examples include secretaries, administrative assistants, and office clerks.
- **Skilled crafts:** Positions that require specialized manual skills, such as plant and system operators and system engineers.
- **Service and maintenance:** Examples include police officers, food service workers, building and grounds employees, and maintenance workers.

Source: National Center for Education Statistics, 2011.

"Administrative bloat" is a rising concern across higher education, as nonfaculty staffing has grown considerably—but this growth stems largely from an increase in professional support jobs rather than high-level executives and administrators.

Managerial and Professional Jobs

The explosion of new workers attending to the noninstructional side of higher education has not gone unnoticed on college and university campuses. Although the most visible positions—such as newly hired executives, managers, and administrators—tend to draw the greatest attention, most hiring has occurred within the administrative offices they often oversee. Professional employees—such as business analysts, human resources staff, admissions staff, computer administrators, counselors, athletic staff, and health workers—are the largest group of noninstructional staff on campus.[2] These positions typically either support the business functions of colleges and universities or provide noninstructional services to students.

Professional positions increased, on average, by 2.5 to 5 percent per year between 2000 and 2012. Executive and managerial positions grew by 2.5 percent or less in public institutions; growth was faster in the private sector but still lower than for professional positions. Across most types of four-year institutions, the number of new professional jobs was second only to the number of new part-time faculty positions added during the previous decade (see Appendix Table 2).

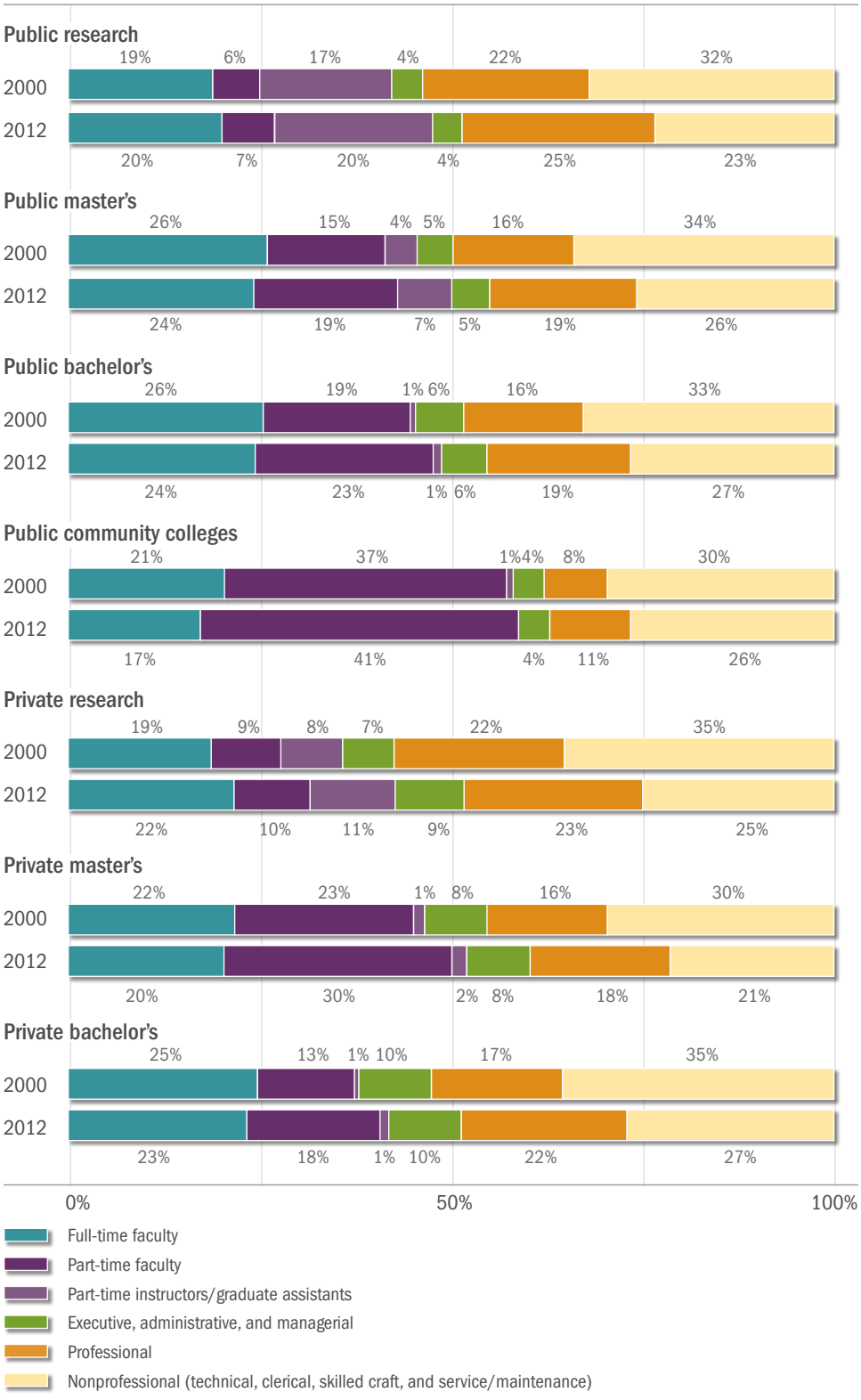
Professional workers now account for approximately 20 to 25 percent of on-campus jobs, increasing by 2 to 5 percentage points between 2000 and 2012 (except at private research institutions where increases were smaller; see Figure 2). At research institutions, professional staff even outnumbered full-time faculty. The number of professional positions has increased much faster than student enrollment—adding, on average, between 5 and 10 new positions per 1,000 FTE students at most types of four-year institutions since 2000 (outpaced only by the increase in part-time instructors; see Appendix Table 3). This represents a 10 to 18 percent increase, except at public master's and bachelor's colleges where the increase was at least double.

Executive-level positions represent a small share of jobs on campus, between 4 and 6 percent at public institutions in 2012, changing little in more than a decade (see Figure 2). Private institutions have a more substantial investment in these types of positions, but when accounting for changes in enrollments over time, only private research universities showed significant expansion. In all other sectors, executive hiring has largely kept pace with student enrollment growth since 2000 (see Figure 3 and Appendix Table 3).

Figure 2

All types of colleges and universities have added professional staff while increasing reliance on part-time faculty/instructors

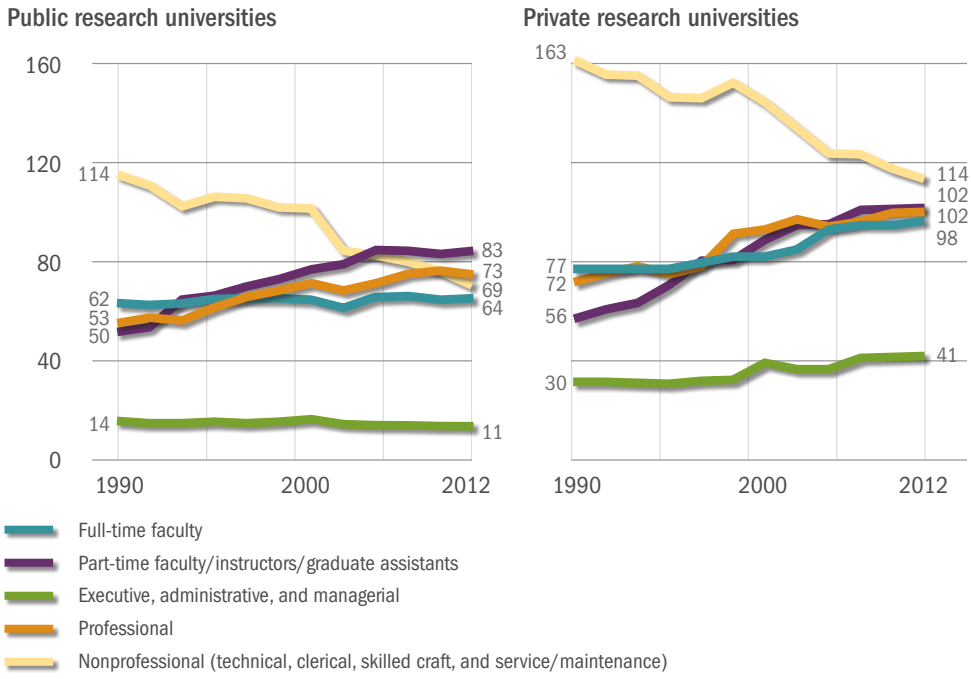
Distribution of headcount employees by type of job, FY 2000 and FY 2012



Source: Delta Cost Project IPEDS Database, 1987–2010, 11-year matched set; IPEDS Fall Staff Survey, 2011.

Figure 3 **New full-time faculty and executive positions primarily accommodated growing enrollments; only private research universities expanded these positions**

Headcount employees per 1,000 FTE students, FY 1990–FY 2012



Source: Delta Cost Project IPEDS Database, 1987–2010, 24-year matched set; IPEDS Fall Staff Survey, 2011.

Faculty Jobs

On most college campuses, the majority of workers are not teaching students. Less than half of employees at four-year, nonresearch institutions are faculty (full- or part-time), and at research institutions faculty account for only 25 to 30 percent of all jobs (see Figure 2). Although there are more faculty members on campus, most of the increase is from the growing use of part-time faculty. With the exception of research universities, the proportion of all employees who were full-time faculty declined 5 to 7 percent at four-year colleges and 16 percent at community colleges between 2000 and 2012.

Colleges and universities have continued to hire new full-time faculty members, but largely to accommodate the natural growth in student enrollment. The ratio of full-time faculty to students was steady or slightly declining in most sectors between 2000 and 2012 (see Figure 4). Only private research universities, on average, made significant investments in full-time faculty. They added 16 full-time faculty per 1,000 FTE students from 2000 to 2012 (a 19 percent increase), boosting the share of full-time faculty positions on campus.

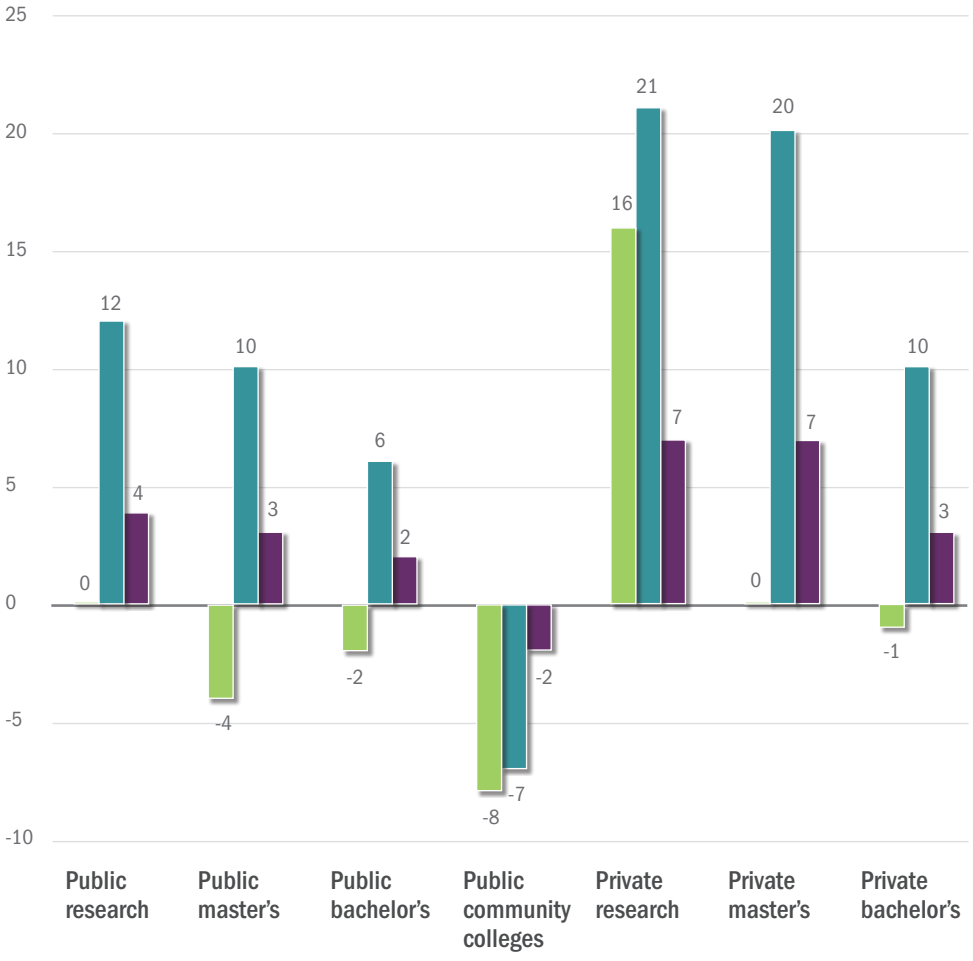
But the number of contingent faculty members is growing—even among professors with full-time appointments.[3] From 2004 to 2012, the number of full-time professors

on short-term contracts increased by 30 to 50 percent.[4] Nevertheless, the share of full-time contract faculty increased less than 1 percentage point in a decade, although shifts were larger at master's and bachelor's institutions (American Federation of Teachers, 2009; Curtis & Thornton, 2013).

Colleges and universities have continued to rely on part-time faculty to meet instructional demands while reining in costs; these part-time positions are among the fastest growing on campus. Unlike other institutions, research universities depend heavily on their graduate assistants to provide part-time instruction; public research institutions, in particular, now employ as many graduate assistants as full-time professors.[5]

Figure 4 **Part-time faculty have added instructional capacity in some sectors while substituting for full-time faculty in other sectors**

Change in average number of full- and part-time faculty per 1,000 FTE students, FY 2000–FY 2012



Source: Delta Cost Project IPEDS Database 1987–2010, 11-year matched set; IPEDS Fall Staff Survey, 2011.

Relying on part-time faculty as a cost-savings measure continues to be the largest change in the higher education employment landscape. Although the full-time, tenure-track professoriate endures, contingent workers have increasingly infiltrated its ranks.

Since 2000, four-year institutions averaged about 10 to 20 additional part-time faculty/instructors per 1,000 FTE students (see Figure 4). This represents a 15 to 25 percent increase at most types of four-year institutions, except master's colleges where growth was 35 percent. Private master's institutions have made some of their biggest investments in part-time faculty, who have become their largest group of employees, representing 30 percent of all campus workers in 2012.

Only community colleges had declines in the number of both full- and part-time faculty per FTE student between 2000 and 2012. But the number of professional positions per student continued to rise during this time, and declines in the proportion of nonprofessional jobs were smaller than at four-year institutions; community colleges appear to be protecting these jobs at the expense of faculty positions.

Although part-time professors are less expensive, concerns remain about whether they offer the same quality instruction as full-time professors or whether they adversely affect student outcomes. There is some evidence that increased reliance on part-time faculty can reduce graduation rates and persistence to the second year, particularly at comprehensive institutions (Ehrenberg & Zhang, 2005). But other research has shown that adjuncts have a positive or indifferent impact on their students' subsequent interest in those fields (Bettinger & Long, 2010; Figlio, Schapiro, & Soter, 2013).

As the number of part-time instructors grows, job security continues to erode among full-time faculty. Academics today are less likely than a decade ago to have tenure, hold a tenure-track position, or be full professors. Although tenure systems are a mainstay at research universities and public master's institutions, they have become less prevalent at other public and private institutions. The proportion of tenured faculty has declined across the board, even in sectors with nearly universal access to tenure systems. In 2012, less than half of full-time instructional staff at public and private four-year institutions held tenure, a decline of 4 to 5 percentage points since 2000 (National Center for Education Statistics, 2013a). And among full-time faculty, the share of "professors" declined by more than 4 percentage points since 2003, as adjuncts and other contingent faculty were increasingly at the lectern[6] (National Center for Education Statistics, 2007, 2013b).

Nonprofessional Jobs

As in the broader economy, the middle-skilled jobs—those providing clerical, technical, skilled craft, and service/maintenance services—represented a smaller share (about one quarter) of jobs on campus in 2012 compared with 30 to 35 percent of campus jobs more than a decade earlier.

Middle-skilled jobs continue to represent the largest group of workers on most types of campuses—exceeding the number of workers in professional or full-time faculty positions. The *number* of workers in these jobs remained fairly

The number of middle-skilled jobs is largely unchanged, but they now represent a smaller share of campus employment and serve larger numbers of staff and students—these workers continue to outnumber staff in professional positions.

steady during the decade, but they comprised a smaller *share* of jobs because of job creation elsewhere on campus.[7] As both total employment and student enrollment grow, these workers are serving greater numbers of staff and students. As in other sectors of the economy, technology has led productivity improvements in many of these types of jobs.

Balancing Hiring Between Faculty and Administrators

Amid the significant shifts in campus employment, there is tension in balancing new administrative and academic positions. And although the use of adjunct faculty is often unpopular, growing reliance on part-time faculty is more prevalent in certain types of institutions.

Full- Versus Part-Time Faculty Jobs

Public master's and bachelor's colleges, as well as community colleges that collectively serve large numbers of students at low cost, are most vulnerable to making part-time faculty substitutions. Public master's and bachelor's colleges lost between two and four full-time faculty per 1,000 FTE students from 2000 to 2012, mirroring the increase in "full-time equivalent" part-time faculty (relative to student enrollment; see Figure 4). This suggests that part-time instead of full-time faculty were hired to accommodate growing enrollments.

New part-time faculty have effectively replaced additional full-time faculty positions in education sectors with the fewest resources and neediest students; in wealthier educational sectors, however, part-time faculty have provided additional capacity.

But among their private-sector counterparts, part-time faculty have provided additional capacity rather than serving as full-time faculty replacements; these institutions added three to seven "full-time equivalent" part-time faculty per 1,000 FTE students. Public and private research institutions also have relied heavily on part-time faculty and graduate assistants to expand their teaching capacity, although the private research institutions also have invested heavily in new full-time faculty.

In those sectors adding capacity, it is unclear how these changes have affected faculty course loads. Expansion may have allowed colleges and universities to add new courses or course sections, decrease the course load of existing part-time instructors, or offload full-time faculty course loads onto part-timers.

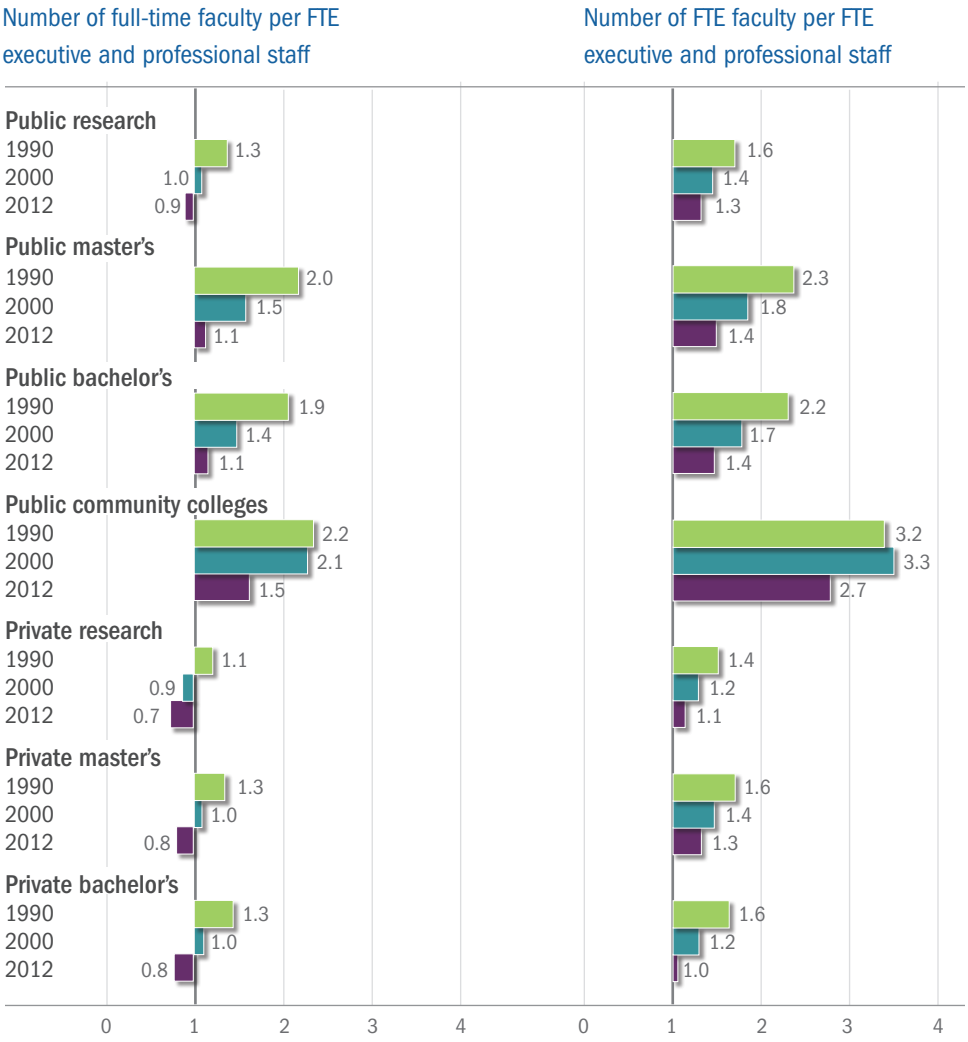
What is clear, however, is that community colleges have fared worse than four-year institutions in faculty hiring. In 2012, as their enrollments surged because of the recession, community colleges employed fewer full- *and* part-time faculty per FTE student compared with more than a decade earlier. At the same time, the proportion of full-time community college faculty dropped sharply as the schools increasingly employed more—but not necessarily enough—part-time instructors.

Faculty Versus Administrator Jobs

Growing numbers of administrative positions (executive and professional) and changes in faculty composition represent long-standing trends. The shifting balance among these positions has played out steadily over time in favor of administrators, and it is unclear when a tipping point may be near. Whether this administrative growth constitutes unnecessary "bloat" or is justified as part of the complexities involved in running a modern-day university remains up for debate.

Back in 1990, all types of public and private colleges and universities averaged more full-time faculty positions than administrative positions (see Figure 5a). Public nonresearch institutions in 1990 averaged roughly twice as many full-time faculty as administrators—more than 20 years later, the two were almost equal.

Figure 5a | **The number of faculty per administrator has declined across higher education**



Note: "FTE" is full-time equivalent; FTE faculty includes research assistants.
Source: Delta Cost Project IPEDS Database, 1987–2010, 24-year matched set; IPEDS Fall Staff Survey, 2011.

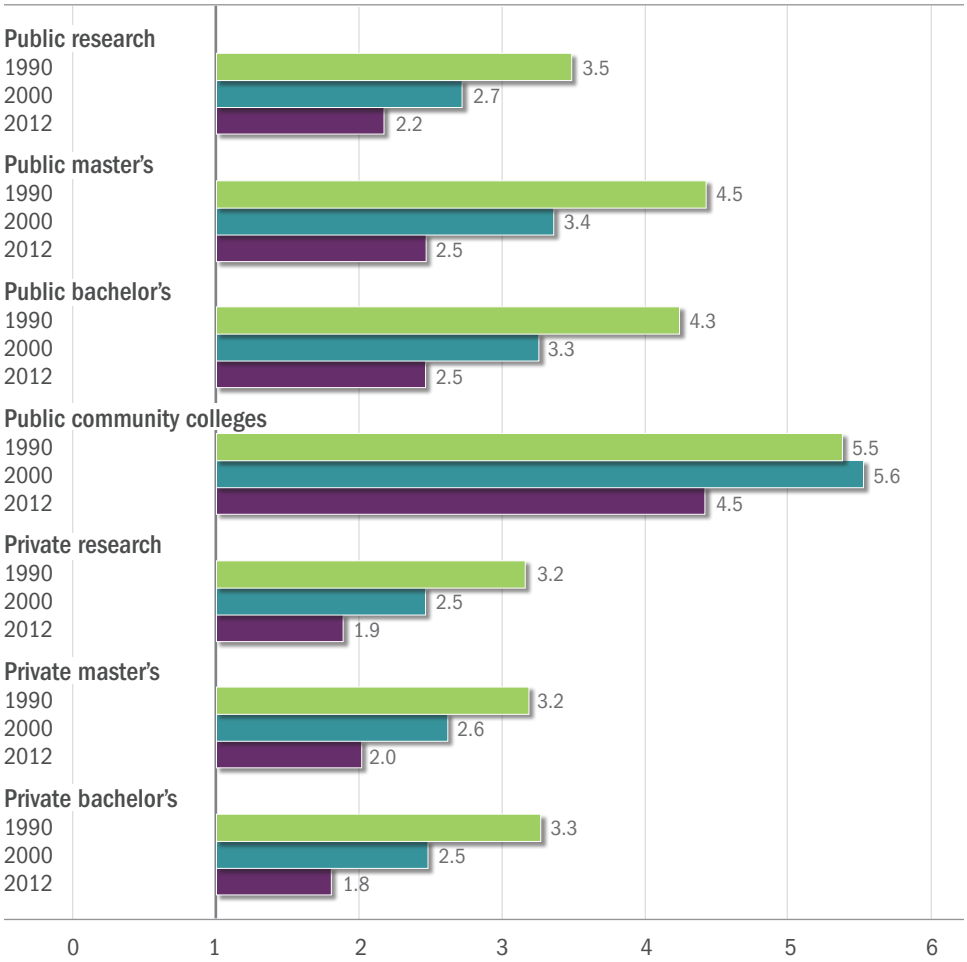
By 2012, the pendulum had swung at private nonprofit colleges and public research universities, which averaged less than one full-time faculty member (.75 to .90) for every administrator.

However, the rapid growth in part-time faculty during the past two decades has expanded the total number of "full-time equivalent" faculty. The pendulum has swung back, showing there were between 1 and 1.5 full-time equivalent faculty members per administrator at public four-year institutions.

A comprehensive look at all campus employment also shows the familiar shift toward administrative positions (see Figure 5b). There were at least three times as many FTE faculty and staff for every administrative position in 1990. By 2012, this figure had declined by roughly 40 percent, to an average of 2.2 to 2.5 faculty and staff per administrator at public institutions, and two or fewer faculty and staff positions per administrator at private institutions.

Figure 5b | The number of faculty and staff per administrator has declined across higher education

Number of FTE faculty and staff per FTE executive and professional staff



Note: "FTE" is full-time equivalent; FTE faculty includes research assistants.
Source: Delta Cost Project IPEDS Database, 1987–2010, 24-year matched set; IPEDS Fall Staff Survey, 2011.

The growth in nonfaculty positions—whether justifiable or excess "bloat"—is not a recent occurrence, but represents a continuing trend toward jobs that provide business services or noninstructional student services.

A number of explanations have been advanced for the growth in campus administrators. Chief among them is the rise in government mandates, followed by oversight of more complex administrative requirements (e.g., information technology, enhanced student services), redefined faculty and administrator responsibilities, reliance on fundraising revenues and the staff to generate them, and simply expanding bureaucratic fiefdoms (Leslie & Rhoades, 1995; Greene et al., 2010; Archibald & Feldman, 2008; Ginsburg, 2011b; Martin & Carter Hill, 2013). Regardless of the reason—whether justified or not—college administrators have assumed a much larger presence on college campuses than ever before.

Staff Compensation and Spending

Spending on employee compensation—salaries and benefits—is a major component of higher education costs. Although higher education's primary mission is teaching, faculty compensation represents only about one half of total compensation costs. Full-time faculty salaries have grown little in recent years, making them an unlikely culprit behind rising higher education costs. Other personnel costs, including employee benefits and compensation for staff providing noninstructional services, have grown faster. Although reliance on adjunct faculty has held down instructional costs, it has not been enough to offset these other costs.

Despite increased spending by colleges and universities, compensation costs generally have not consumed a larger share of institutional budgets.

Total Compensation

Colleges and universities devote an average of 60 to 70 percent of their total spending (excluding auxiliaries, hospitals, and other independent operations)[8] to employee compensation; instructional faculty and staff account for about half of those compensation costs. Despite rising expenditures since 2002,[9] the proportion of spending dedicated to compensation remained steady across most types of institutions, with noticeable increases only in the private master's and bachelor's colleges. Although changes in data collection prevent direct comparisons with earlier years, trends in the 1990s show that the compensation share and instructional share of compensation both declined as a share of total spending during this time. Although this appears at odds with the overall staffing trends (which showed growth across both decades, accelerating during the 2000s), a shift in the composition of jobs appears to have saved money during the 1990s, but the uptick in hiring during the 2000s eventually offset any cost savings.[10]

Faculty salaries are an unlikely cause of rising spending and tuitions in higher education; rather, cost-shifting and spending on noninstructional services have led to the increases.

Faculty Salaries

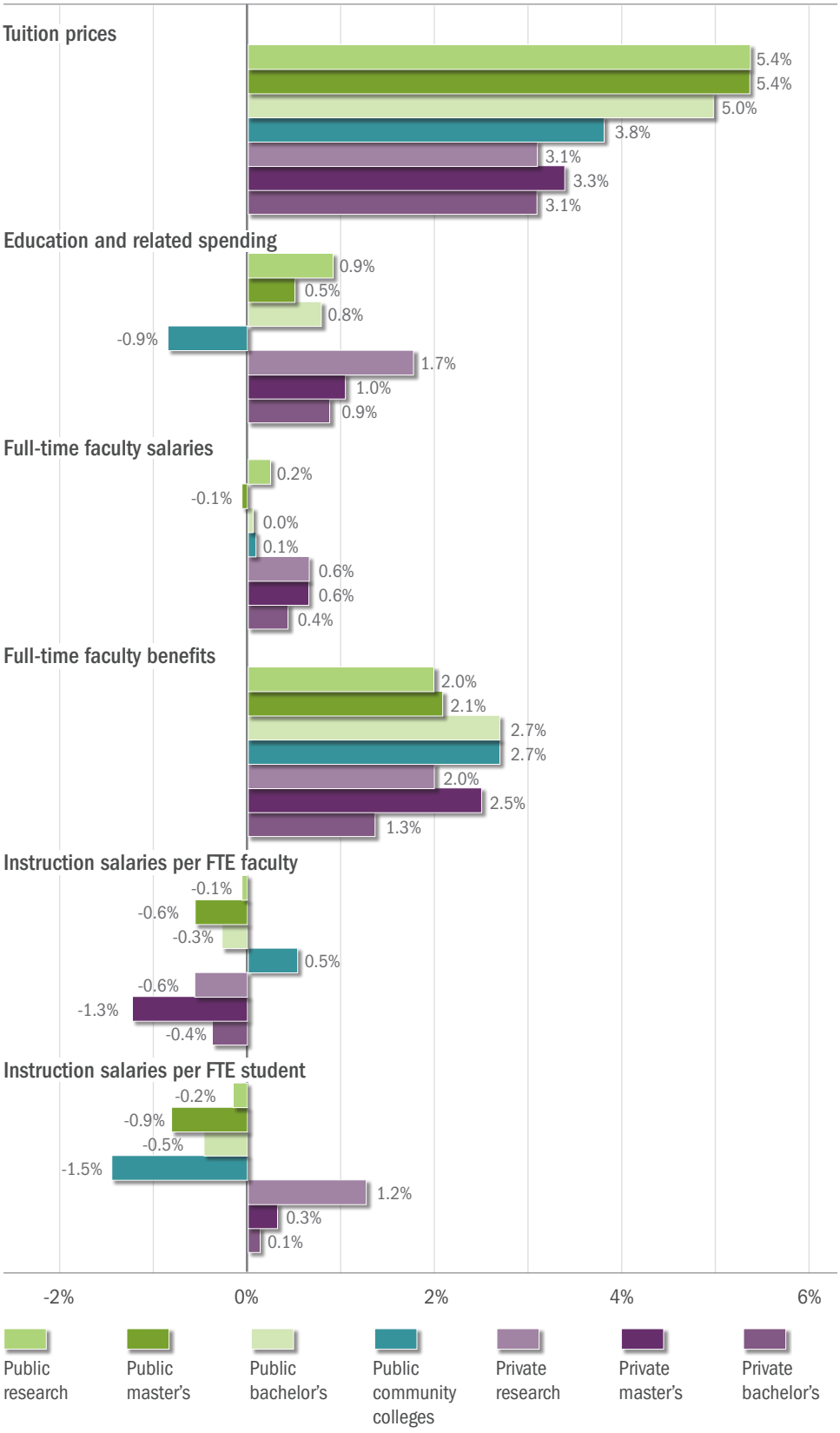
Despite public perceptions, there is little evidence that faculty salaries are the leading cause of rising spending or tuition costs in higher education. Education and related (E&R) spending[11]—the core measure of spending on academics (which includes instruction, student services, and a portion of overhead expenses)—increased at an inflation-adjusted, annual rate of roughly 1 percent or less per year at public four-year institutions during much of the past decade (see Figure 6). But various measures of spending on instruction show much slower growth: Average salary expenditures for full-time faculty increased a mere 0.2 percent per year since 2002 at public research institutions and were essentially flat elsewhere in the public sector. Instructional salary outlays per FTE faculty member (and per FTE student) generally declined. Although average full-time salary outlays grew slightly faster at private nonprofit institutions, they grew slower than overall E&R spending.[12]

Other salary surveys also have shown that the salaries of full-time faculty were essentially flat during the last decade after adjusting for inflation (Clery, 2013; Curtis & Thornton, 2013). But there are critical distinctions within the full-time faculty ranks, and not all have fared equally well. Established professors earned higher salaries—averaging $60,000 to $100,000 in 2012 depending on rank—and enjoyed larger salary increases than other faculty members during the past decade (Clery, 2013; College and University Professional Association for Human Resources, 2013a). The growing number of full-time—but non-tenure-track—faculty earned significantly less ($47,500, on average) than established professors and have not enjoyed the same salary increases over time (Curtis & Thornton, 2013; Clery, 2013). Most salary savings come from adjunct faculty who earn, on average, $2,700 per course, which for a full eight-course load over a year would pay just more than $21,000, without benefits.[13]

Looking beyond faculty salaries, prior analyses by the Delta Cost Project have shown that tuition prices grew much faster than E&R spending (and faculty salaries) because of declining revenues, particularly state appropriations in the public sector.[14] Institutions have increasingly relied on tuition dollars to offset declining institutional subsidies[15] and pay for modest spending increases; students now cover a much larger share of their educational costs than ever before.

Figure 6 Expenditures for academic functions and faculty salaries have not increased as fast as tuition prices

Average annual percent change across various spending measures, FY 2002–FY 2010



Note: Data show change in inflation-adjusted dollars.
Source: Delta Cost Project IPEDS Database, 1987–2010, 11-year matched set; IPEDS Fall Staff and Salary Survey, 2001 and 2009.

Growing personnel expenditures within student services suggest that some of the "administrative bloat" reflects widespread investments in midlevel professionals providing noninstructional student assistance; some sectors, including research universities, also have increased spending on institutional support staff.

Wage and Salary Expenses Within Spending Categories

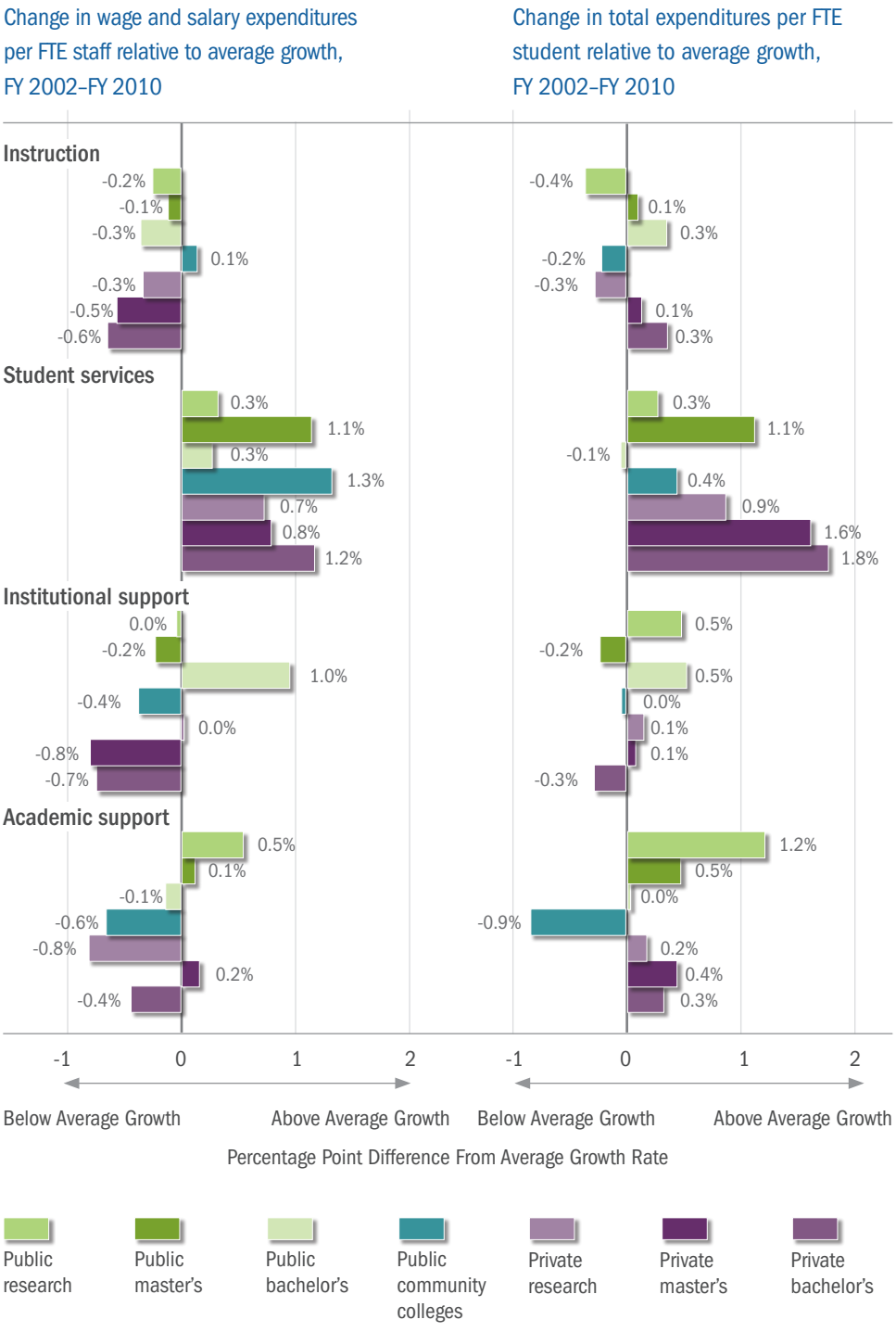
The many new professional positions that colleges and universities have added in recent decades provide support across a variety of university functions, including noninstructional academic support, general institutional support, and student services unrelated to instruction.[16] The limits of federal data collection prevent direct mapping between staff and spending categories, but trends in wage and salary expenditures during this time suggest that many new hires may be providing student-related services rather than just broad institutional support—particularly in private, nonresearch institutions.

Because student services is a broad category that includes a variety of activities—from recruitment, admissions, financial aid, and registrars, to student counseling, student organizations, and athletics—it is difficult to precisely determine the types of services that student support workers provide. But many student-related activities (ranging from course and career guidance to disciplinary actions) that were previously under the purview of faculty have been centralized, to free up faculty time and standardize the types and quality of services provided. Investments that directly support student success are wise if they lead to improved learning and degree outcomes.

Surveys that collect more detailed data on professional staff salaries show that these jobs typically pay less than full-time faculty positions (which reflect nine-month contracts). Median salaries for professional workers generally ranged between $55,000 and $60,000 in fiscal year 2013 and were quite similar across expenditure categories. New student services positions typically pay around $55,000—less than full-time professor positions, but significantly more than adjunct faculty appointments (College and University Professional Association for Human Resources, 2013b).

Wage and salary expenditures for student services (standardized by *total* FTE employment) increased faster than average wages and salaries across all types of institutions (see Figure 7 and Appendix Table 4). Although student service expenditures are not large compared with other expenditure categories, the increase is notable for its consistency and because salary expenditures per FTE staff in most other spending categories (including institutional and academic support where many other managerial and professional positions are located) grew slower than average at public master's and bachelor's colleges. Public research institutions, however, showed widespread increases across categories,

Figure 7 | Wage and salary expenditures for student services have grown faster than other spending categories



Note: Wage and salary expenditure categories were normalized using total FTE staff (excluding research assistants) because staffing data for each individual category are unavailable. Growth rates reflect the average annual percent change.
Source: Delta Cost Project IPEDS Database, 1987–2010; 11-year matched set.

Rising benefits costs remain a concern across all types of colleges and universities, and have emerged as the primary driver of increased compensation costs.

suggesting that their new professional staffs may have been broadly deployed. Only public and private research institutions and private bachelor's institutions showed larger new dollar investments in institutional support than in student services.

The relative growth in student services is not to downplay the role of other campus support functions in institutional cost increases. In previous Delta Cost Project reports, analyses that capture *all* spending showed above-average spending across campus support functions (student services, institutional and academic support; see Figure 8). This broader analyses captured not only wages and salaries, but also rising benefits costs and other noncompensation spending (e.g., computer and office equipment/supplies, library acquisitions, travel expenses), which together contributed to spending increases in each category.

Salaries, Benefits, and Compensation

As in other industries, benefits costs—including medical and dental plans, retirement contributions, Social Security and unemployment insurance taxes, life and disability insurance plans, and tuition and housing benefits—are rising rapidly across all sectors of higher education. Benefits paid to full-time faculty accounted for 21 to 23 percent of total compensation in 2010, rising more than 2 percentage points since 2002[17]; average benefits expenditures grew by more than 2 percent per year in most sectors, contributing to this increase[18] (see Figure 8).

However, there is conflicting evidence on whether benefits costs are rising at similarly rapid rates at public and private institutions. Measures of overall benefits expenditures for colleges and universities show that the benefits share of costs is higher at public institutions (23 to 24 percent versus 20 percent at private institutions) and also is growing much faster. But, by any measure, benefits costs are growing across all institutions and account for a rising share of compensation costs.

Although public-sector college and university benefits packages are typically more generous than those in the private sector, public institutions are less free to manage these costs, which are treated as "fixed" costs within the state budget and often are set by the state, not the institutions. Universities have managed to control some of their benefits costs by relying on part-time faculty positions, which usually do not come with benefits. Although this improves the financial picture for universities, it is at the expense of workers.

Figure 8 | **Benefits costs are driving increases in overall compensation costs, FY 2002–FY 2010**

Annual percent change in compensation measures, FY 2002–FY 2010

	Full-time Faculty Salaries	Full-time Faculty Benefits	Salary Outlay per FTE Employee	Benefit Outlay per Full-time Employee	Compensation per FTE Employee	Compensation per FTE Student
Public research	0.2%	2.0%	1.2%	4.2%	1.8%	1.1%
Public master's	-0.1%	2.1%	-0.1%	3.7%	0.7%	0.1%
Public bachelor's	0.0%	2.7%	0.3%	4.5%	1.2%	0.7%
Public community college	0.1%	2.7%	0.8%	4.3%	1.5%	-0.9%
Private research	0.6%	2.0%	0.6%	2.3%	1.0%	1.9%
Private master's	0.6%	2.5%	0.3%	2.5%	0.6%	0.9%
Private bachelor's	0.4%	1.3%	0.2%	1.3%	0.4%	0.7%

Note: All data were converted to 2010 dollars before the percent change was calculated. Salary and compensation outlays are reported per full-time equivalent (FTE) employee, but most part-time faculty/staff are not eligible for benefits, so benefit outlays are shown per full-time employee. Per FTE employee calculations exclude part-time graduate assistants/instructors.
Source: Delta Cost Project IPEDS database, 1987–2010, 11-year matched set; IPEDS Fall Staff and Salary Surveys, 2001 and 2009.

Total Compensation Costs per Employee and per Student

Reliance on part-time faculty has helped constrain institutional spending, but rising benefits costs and new hiring elsewhere on campus have offset these cost savings and contributed to rising costs per student across higher education institutions.

Total compensation costs per employee have continued to rise in public institutions, as increasing benefits expenses have offset savings gained by holding salary costs down (see Figure 8). Private institutions, however, have further limited growth in total compensation per employee with smaller benefit-cost increases and staffing shifts to keep increases in overall salary expenditures per employee low.

Employee compensation costs *per student* have increased across most four-year sectors, with declines at community colleges. Although private institutions had modest increases in compensation *per employee*, compensation costs grew somewhat faster per FTE student as hiring outpaced student enrollment increases. At public four-year institutions, compensation increased both on a per-employee and per-student basis, although staffing shifts and increases in student enrollments softened the per-student cost increases. Despite efforts to control staff costs, if the volume and/or cost of new hires outpace(s) student enrollments, employee compensation costs per student will continue to rise.

Conclusion

For more than a decade, colleges and universities have tried to manage costs by increasingly relying on part-time instructors. Wealthier institutions—such as research universities and private colleges—have been able to add instructional capacity at lower cost by hiring part-time faculty, while public nonresearch colleges have relied on these less-expensive instructors at the expense of full-time faculty. But at the same time, institutions have added new, nonfaculty professionals whose salary and benefits packages tend to be higher than those of part-time instructors (but less than full professors). Many of these new positions appear to be providing student services, but whether they represent justifiable expenses or unnecessary "bloat" is up for debate.

With benefits costs—rather than salaries—driving much of the increase in overall compensation costs, hiring part-time instructors has been the most common approach to trimming faculty compensation costs. However, as colleges have hired additional professional staff, they have eliminated much of the cost savings from using part-time instructors, although, for the most part, these shifts still limited increases in overall salary costs per employee (except at public research universities). Higher benefits costs, rather than rising salaries, led to moderate increases in overall compensation costs.

Although private institutions were more successful than public institutions in controlling compensation costs per employee (in part, because benefits represent a smaller portion of their overall compensation packages), their compensation costs increased slightly faster when measured against student enrollment because new employee hiring outpaced growth in student enrollment. But in public institutions, rising student enrollments meant that compensation costs per student grew more slowly than compensation costs per employee, although institutions will still need to tackle rising benefits expenditures to control future costs.

There is no single, smoking gun responsible for rising higher education prices. Even though compensation costs have risen modestly across the higher education sector, these increases emanated from the combined effects of controlling full-time faculty costs, rising benefits costs, and hiring patterns that favor noninstructional professional positions, while offsetting the cost savings from using more part-time faculty. Although compensation is a major component of higher education costs, other noncompensation expenses and the decline of institutional subsidies, which shifted more costs onto students, also have contributed to rising costs and tuitions.

Appendix Table 1 Average headcount and full-time equivalent (FTE) employees per 1,000 FTE students, 1990–2012

					Absolute Change			Percent Change		
	1990	2000	2010	2012	1990–2000	2000–2012	1990–2012	1990–2000	2000–2012	1990–2012
Headcount employees per 1,000 FTE students										
Public research	291	317	307	301	26	-16	10	8.9%	-5.1%	3.4%
Public master's	159	172	172	172	14	0	14	8.7%	-0.1%	8.6%
Public bachelor's	166	184	183	184	18	1	18	10.8%	0.3%	11.1%
Public community colleges	174	191	170	175	17	-16	1	9.8%	-8.5%	0.5%
Private research	394	434	456	456	41	22	63	10.3%	5.1%	15.9%
Private master's	218	216	237	243	-2	26	24	-0.9%	12.2%	11.2%
Private bachelor's	255	262	274	277	6	15	21	2.4%	5.7%	8.3%
Full-time equivalent (FTE) employees per 1,000 FTE students										
Public research	244	251	240	234	6	-17	-10	2.6%	-6.7%	-4.2%
Public master's	138	145	142	140	7	-6	2	5.1%	-3.9%	1.1%
Public bachelor's	142	154	150	150	13	-4	8	8.9%	-2.7%	5.9%
Public community colleges	123	130	112	115	8	-16	-8	6.1%	-11.9%	-6.5%
Private research	333	352	369	370	19	18	37	5.9%	5.1%	11.3%
Private master's	173	170	175	179	-2	9	6	-1.4%	5.2%	3.7%
Private bachelor's	217	219	223	224	2	6	7	0.7%	2.6%	3.4%

Note: Includes graduate assistants.
Source: Delta Cost Project IPEDS Database, 1987–2010; 24-year matched set; IPEDS Fall Staff Survey, 2011.

Appendix Table 2 | Number of employees by job classification, 1990–2012

					Absolute Change			Percent Change		
	1990	2000	2010	2012	1990–2000	2000–2012	1990–2012	1990–2000	2000–2012	1990–2012
Public research										
Total headcount employees	910,234	1,026,059	1,211,852	1,225,456	115,825	199,397	315,222	12.7%	19.4%	34.6%
Full-time faculty	178,645	196,437	236,088	248,394	17,792	51,957	69,749	10.0%	26.4%	39.0%
Part-time faculty	155,100	236,701	320,487	334,022	81,601	97,321	178,922	52.6%	41.1%	115.4%
Part-time faculty	42,100	60,783	79,274	85,941	18,683	25,158	43,841	44.4%	41.4%	104.1%
Part-time instructors/ Graduate assistants	113,000	175,918	241,213	248,081	62,918	72,163	135,081	55.7%	41.0%	119.5%
Executive, administrative, and managerial	41,847	41,539	50,659	50,868	(308)	9,329	9,021	-0.7%	22.5%	21.6%
Professional	179,168	224,544	306,009	307,060	45,376	82,516	127,892	25.3%	36.7%	71.4%
Nonprofessional	355,474	326,838	298,609	285,112	(28,636)	(41,726)	(70,362)	-8.1%	-12.8%	-19.8%
Public master's										
Total headcount employees	250,681	294,197	364,316	371,212	43,516	77,015	120,531	17.4%	26.2%	48.1%
Full-time faculty	76,037	76,823	89,586	89,903	786	13,080	13,866	1.0%	17.0%	18.2%
Part-time faculty	38,380	57,386	87,962	96,352	19,006	38,966	57,972	49.5%	67.9%	151.0%
Executive, administrative, and managerial	14,412	14,562	18,107	18,049	150	3,487	3,637	1.0%	23.9%	25.2%
Professional	28,103	45,410	69,742	71,555	17,307	26,145	43,452	61.6%	57.6%	154.6%
Nonprofessional	93,749	100,016	98,919	95,353	6,267	(4,663)	1,604	6.7%	-4.7%	1.7%
Public bachelor's										
Total headcount employees	30,951	38,307	49,259	50,860	7,356	12,553	19,909	23.8%	32.8%	64.3%
Full-time faculty	9,047	9,741	12,038	12,489	694	2,748	3,442	7.7%	28.2%	38.0%
Part-time faculty	4,888	7,638	11,624	12,483	2,750	4,845	7,595	56.3%	63.4%	155.4%
Executive, administrative, and managerial	2,116	2,414	3,103	3,123	298	709	1,007	14.1%	29.4%	47.6%
Professional	3,627	6,040	8,908	9,509	2,413	3,469	5,882	66.5%	57.4%	162.2%
Nonprofessional	11,273	12,474	13,586	13,256	1,201	782	1,983	10.7%	6.3%	17.6%
Public community colleges										
Total headcount employees	347,491	425,612	576,196	588,370	78,121	162,758	240,879	22.5%	38.2%	69.3%
Full-time faculty	76,512	86,336	99,208	100,563	9,824	14,227	24,051	12.8%	16.5%	31.4%
Part-time faculty	123,809	158,617	237,293	244,428	34,808	85,811	120,619	28.1%	54.1%	97.4%
Executive, administrative, and managerial	16,135	17,831	24,152	24,012	1,696	6,181	7,877	10.5%	34.7%	48.8%
Professional	25,681	36,056	60,016	63,804	10,375	27,748	38,123	40.4%	77.0%	148.4%
Nonprofessional	105,354	126,772	155,527	155,563	21,418	28,791	50,209	20.3%	22.7%	47.7%

					Absolute Change			Percent Change		
	1990	2000	2010	2012	1990–2000	2000–2012	1990–2012	1990–2000	2000–2012	1990–2012
Private research										
Total headcount employees	343,203	401,370	505,728	524,957	58,167	123,587	181,754	16.9%	30.8%	53.0%
Full-time faculty	62,261	74,030	107,401	113,610	11,769	39,580	51,349	18.9%	53.5%	82.5%
Part-time faculty	49,009	69,195	105,175	110,664	20,186	41,469	61,655	41.2%	59.9%	125.8%
Part-time faculty	33,266	37,289	49,386	52,158	4,023	14,869	18,892	12.1%	39.9%	56.8%
Part-time instructors/ Graduate assistants	15,743	31,906	55,789	58,506	16,163	26,600	42,763	102.7%	83.4%	271.6%
Executive, administrative, and managerial	24,711	27,874	45,306	47,855	3,163	19,981	23,144	12.8%	71.7%	93.7%
Professional	64,287	89,367	116,720	122,630	25,080	33,263	58,343	39.0%	37.2%	90.8%
Nonprofessional	142,935	140,904	131,126	130,198	(2,031)	(10,706)	(12,737)	-1.4%	-7.6%	-8.9%
Private master's										
Total headcount employees	131,293	159,339	232,669	241,134	28,046	81,795	109,841	21.4%	51.3%	83.7%
Full-time faculty	31,010	35,046	45,431	49,033	4,036	13,987	18,023	13.0%	39.9%	58.1%
Part-time faculty	25,587	38,335	75,567	76,494	12,748	38,159	50,907	49.8%	99.5%	199.0%
Executive, administrative, and managerial	11,184	13,412	19,695	20,427	2,228	7,015	9,243	19.9%	52.3%	82.6%
Professional	17,709	25,077	40,696	44,362	7,368	19,285	26,653	41.6%	76.9%	150.5%
Nonprofessional	45,803	47,469	51,280	50,818	1,666	3,349	5,015	3.6%	7.1%	10.9%
Private bachelor's										
Total headcount employees	125,545	143,683	181,641	187,551	18,138	43,868	62,006	14.4%	30.5%	49.4%
Full-time faculty	32,537	35,634	42,703	43,849	3,097	8,215	11,312	9.5%	23.1%	34.8%
Part-time faculty	13,368	18,912	31,383	33,996	5,544	15,084	20,628	41.5%	79.8%	154.3%
Executive, administrative, and managerial	11,823	13,574	17,881	18,293	1,751	4,719	6,470	14.8%	34.8%	54.7%
Professional	15,594	24,738	38,761	41,140	9,144	16,402	25,546	58.6%	66.3%	163.8%
Nonprofessional	52,223	50,825	50,913	50,273	(1,398)	(552)	(1,950)	-2.7%	-1.1%	-3.7%

Source: Delta Cost Project IPEDS Database, 1987–2010; 24-year matched set; IPEDS Fall Staff Survey, 2011.

Appendix Table 3

Average number of employees per 1,000 full-time equivalent (FTE) students, by job classification, 1990–2012

					Absolute Change			Percent Change		
	1990	2000	2010	2012	1990–2000	2000–2012	1990–2012	1990–2000	2000–2012	1990–2012
Public research										
Full-time faculty	62	64	63	64	2	0	2	3.5%	0.0%	3.5%
Part-time faculty	50	72	82	83	22	12	33	43.2%	16.1%	66.2%
Part-time faculty	15	19	21	23	5	3	8	30.6%	16.2%	51.7%
Part-time instructors/ Graduate assistants	43	60	62	62	18	1	19	41.4%	2.5%	44.9%
Executive, administrative, and managerial	14	13	12	11	-1	-2	-2	-4.7%	-12.9%	-17.1%
Professional	53	67	75	73	14	6	20	27.0%	8.6%	37.9%
Nonprofessional	114	101	75	69	-13	-32	-45	-11.1%	-31.8%	-39.4%
Public master's										
Full-time faculty	48	47	44	43	-1	-4	-5	-1.8%	-8.8%	-10.4%
Part-time faculty	21	29	37	40	8	10	19	39.7%	34.8%	88.3%
Executive, administrative, and managerial	11	10	9	9	-1	-1	-1	-5.3%	-8.7%	-13.5%
Professional	18	28	35	36	9	8	17	51.1%	28.7%	94.5%
Nonprofessional	62	60	48	45	-2	-15	-17	-3.4%	-24.7%	-27.3%
Public bachelor's										
Full-time faculty	48	48	46	46	1	-2	-1	1.2%	-4.2%	-3.0%
Part-time faculty	23	31	36	37	8	6	14	35.9%	19.8%	62.7%
Executive, administrative, and managerial	12	13	14	14	1	0	1	6.6%	3.5%	10.3%
Professional	20	30	35	35	10	5	15	49.1%	15.3%	71.8%
Nonprofessional	65	64	53	52	-1	-13	-13	-0.9%	-19.6%	-20.3%
Public community colleges										
Full-time faculty	40	39	31	31	-1	-8	-9	-3.1%	-19.8%	-22.3%
Part-time faculty	65	76	67	69	11	-7	4	16.4%	-9.3%	5.6%
Executive, administrative, and managerial	10	10	8	8	0	-1	-1	0.6%	-15.6%	-15.1%
Professional	14	19	21	22	4	3	8	30.6%	18.1%	54.2%
Nonprofessional	51	55	45	45	5	-10	-6	9.4%	-18.8%	-11.2%

					Absolute Change			Percent Change		
	1990	2000	2010	2012	1990–2000	2000–2012	1990–2012	1990–2000	2000–2012	1990–2012
Private research										
Full-time faculty	77	82	96	98	5	16	21	6.7%	19.4%	27.5%
Part-time faculty	56	81	102	102	25	21	46	43.9%	26.1%	81.4%
Part-time faculty	42	49	52	53	8	4	12	18.1%	8.2%	27.8%
Part-time instructors/ Graduate assistants	29	50	60	56	20	7	27	68.3%	13.7%	91.3%
Executive, administrative, and managerial	30	32	40	41	2	9	11	6.9%	28.8%	37.7%
Professional	72	92	100	102	20	10	30	28.3%	10.8%	42.2%
Nonprofessional	163	154	118	114	-9	-40	-49	-5.7%	-26.0%	-30.2%
Private master's										
Full-time faculty	52	49	47	49	-3	0	-3	-5.8%	-0.9%	-6.6%
Part-time faculty	50	58	76	78	8	20	28	15.8%	35.5%	56.9%
Executive, administrative, and managerial	20	20	21	21	1	1	2	3.8%	4.7%	8.7%
Professional	30	35	44	46	5	11	16	17.0%	30.4%	52.6%
Nonprofessional	74	63	50	48	-11	-15	-26	-14.6%	-23.5%	-34.7%
Private bachelor's										
Full-time faculty	65	65	64	64	0	-1	-1	-0.7%	-1.1%	-1.7%
Part-time faculty	33	41	47	51	8	10	18	25.7%	23.2%	54.9%
Executive, administrative, and managerial	26	26	28	28	1	2	2	2.3%	5.7%	8.1%
Professional	34	47	61	64	12	17	29	35.8%	36.0%	84.8%
Nonprofessional	103	88	74	71	-15	-17	-31	-14.2%	-19.0%	-30.5%

Source: Delta Cost Project IPEDS Database, 1987–2010; 24-year matched set; IPEDS Fall Staff Survey, 2011.

Appendix Table 4 | Change in wage and salary expenditures per total FTE staff, FY 2002–FY 2010

	Public research	Public master's	Public bachelor's	Public community colleges	Private research	Private master's	Private bachelor's
Average annual percent change (above average changes shown in bold)							
Total	0.8%	-0.2%	0.2%	0.6%	0.9%	0.4%	0.5%
Instruction	0.5%	-0.3%	-0.1%	**0.8%**	0.6%	-0.1%	-0.2%
Research	**1.9%**	-0.9%	**4.4%**	---	-0.4%	**0.7%**	0.3%
Public service	-0.1%	-0.4%	-2.9%	0.3%	-4.0%	-3.0%	-2.2%
Academic support	**1.3%**	**-0.1%**	0.1%	0.0%	0.1%	**0.6%**	0.0%
Institutional support	0.7%	-0.4%	**1.2%**	0.3%	0.9%	-0.3%	-0.3%
Student services	**1.1%**	**0.9%**	**0.5%**	**2.0%**	**1.6%**	**1.2%**	**1.6%**
Operations and maintenance	0.2%	**0.5%**	**1.7%**	0.6%	**3.1%**	-0.1%	-0.7%

Note: All of the expenditure categories were standardized using total FTE staff (excluding research assistants); staffing data for each expenditure category are unavailable. Data were adjusted for inflation before percent change was calculated.
Source: Delta Cost Project IPEDS Database, 1987–2010; 11-year matched set.

Endnotes

1 Increase reflects the change in inflation-adjusted tuition and fees between 1990–91 and 2012–13 (The College Board, 2012).

2 Although athletic staff are included within the professional staff category and the rise in athletic spending is well documented, it is unlikely that this is driving the increase in these types of staff positions. Growth in professional jobs is widespread across all sectors, including those with little or no presence in highly competitive college sports (see Desrochers, 2013).

3 Most contingent faculty members are part time, but about 15 percent of all faculty/instructors hold full-time, non-tenure-track appointments (American Federation of Teachers, 2009).

4 Among full-time faculty only, the share of non-tenure-track professors increased about 3 percentage points between 2004 and 2012. By 2012, these non-tenure-track positions represented more than one third of assistant professors, 18 percent of associate professors, and 12 percent of full professors (American Federation of Teachers, 2013).

5 It is difficult to determine how many graduate assistants are instructors and how many are serving as teaching or research assistants. But given the small share of part-time faculty (relative to total faculty) at research institutions compared with nonresearch institutions, a significant number of graduate assistants are likely providing instruction.

6 "Professors" include full professors, associate professors, and assistant professors. Lecturers and other faculty are full-time instructors who do not hold appointments as professors.

7 Clerical job cuts are evident in the research sectors.

8 Total "education and general" (E&G) spending captures the majority of expenditures in higher education, including spending on instruction, research, public service, student services, institutional support, academic support, operations and maintenance, and net scholarships and fellowships. Spending on auxiliary services, such as dining halls and bookstores, hospitals, and other independent operations, is excluded.

9 Across public institutions, average E&G spending per FTE student declined after the 2001 recession and then began to rebound in the middle of the decade.

10 During the 1990s, slower overall employment growth was comprised of rapid growth in cost-saving part-time positions and less rapid growth in more expensive professional positions, which may have resulted in a net cost savings. During the 2000s, when overall employment growth increased, the expanded growth in part-time positions may no longer have been enough to offset the more moderate (but still expanded) growth in more expensive professional positions, thereby eliminating any cost savings during this period.

11 "Education and related" (E&R) spending captures expenditures related to the academic mission of higher education and excludes spending on sponsored research and public service. E&R spending includes instruction, student services, and a pro rata share of spending on academic support, institutional support, and operations and maintenance.

12 Instructional spending per FTE faculty declined in most sectors, notably among private institutions. This may appear at odds with the full-time faculty salary data that show modest growth in the private sector, but increases in part-time faculty (equated to an FTE) help lower overall instructional spending per FTE faculty member.

13 Average pay per course varies considerably by sector and type of institution, ranging from $2,250 at public associate colleges to $3,800 at private research universities (Curtis & Thornton, 2013, Table B).

14 For a full explanation of cost shifting in higher education, see Desrochers & Wellman, 2011.

15 In the public sector, state appropriations account for most institutional subsidies; in the private, not-for-profit sector, subsidies generally come from endowment or investment returns.

16 Academic support includes activities that support instruction, research, and public service—such as libraries, academic computing, museums, and deans' offices. Institutional support includes general administrative services, executive management, legal and fiscal operations, and similar activities. Student services include noninstructional student-related activities, such as admissions, registrar, career counseling, financial aid, student organizations, and intramural athletics.

17 Between 2002 and 2010, the benefits share of full-time faculty costs rose slightly faster in community colleges, by 3.5 percentage points, while increasing less at private bachelor's institutions, by 1.6 percentage points.

18 Industrywide data show that the benefits share of compensation is nearly 20 percent in private industries and 25 percent in state and local government (excluding vacation, sick leave, and supplemental pay, which are not captured in IPEDS benefits data). In the early 2000s, benefits costs were rising by 2 to 4 percent per year industrywide, after adjusting for inflation. Since 2005, private-industry benefits costs rose by less than 2 percent per year (declining in some years), while benefit cost increases slowed in state and local government, but still increased by 1 percent and 3 percent, respectively, in most years (Employee Benefit Research Institute 2009; U.S. Department of Labor, 2012).

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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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