



Financing Public Higher Education: Short-Term and Long-Term Challenges

Public higher education is in crisis—again. Between 2002 and 2004, state governments reduced appropriations for higher education from \$62.8 billion to \$60.2 billion—a reduction of 4 percent in nominal terms and almost 10 percent after inflation (CSEP 2003). In a half dozen states, the reduction exceeded 10 percent, even in nominal terms.

With the economy showing signs of improvement, public university presidents (at least the optimists among them) might be tempted to think that the present difficulties will soon pass. Yet although an economic recovery will relieve the short-term pressure, public higher education faces serious challenges ahead.

Curiously, the biggest challenge casting a shadow on public higher education's future—the Medicaid program—is not yet on the agenda for most university administrators. The evidence suggests that rapid growth in state Medicaid obligations over the past few decades has crowded out public higher education expenditures, and state Medicaid obligations are expected to continue to grow rapidly over the coming decade. As a result, state support for public higher education is likely to come under increasing pressure, even as state revenues recover. Because roughly three-quarters of all college students in the United States attend public institutions, the implications for the nation's higher education system are potentially profound.

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The Business Cycle and the Medicaid Crowd-Out

Historically, higher education spending has been sensitive to the business cycle. Over the period 1977–2001, a one-point increase in unemployment was associated with a \$3.96 decline in state higher education appropriations per capita in the average state (Kane, Orszag, and Gunter 2003). Only capital spending programs have been more cyclical. In contrast, state correctional spending has been fairly insensitive to the business cycle, and state Medicaid spending has tended to *increase* when unemployment increases, as more families qualify for the means-tested benefits.

Tuition hikes are the most visible result of hard times for public higher education. According to the College

from 2001–02). In the budget proposal, only slightly more than half of the cut this year (\$205 million) would be offset by tuition increases.

Unfortunately, it has become a common pattern in tough budget times to cut spending and not fully offset the reduction with tuition increases. Despite large tuition increases, inflation-adjusted educational and general expenditures per student at public colleges and universities declined during the recession in the early 1980s and again in the early 1990s (NCES 1999, tables 349 and 350).

After the recession in the early 1980s, state governments quickly made up lost ground. By 1985, real state appropriations per capita had returned to their pre-recession peak. However, the recovery was much slower following the recession of the early 1990s. Real state appropriations per capita for higher education did not reach their pre-recession peak until 2001, despite a more than 10 percent increase in enrollment at public colleges and universities.

A primary reason for the slow recovery in state support following the 1990s recession was the dramatic growth in state Medicaid obligations in the intervening years. Between 1985 and 2000, the share of state budgets devoted to means-tested benefits (including Medicaid) grew from 17 percent to 22 percent, whereas the share devoted to higher education declined from 12 percent to 11 percent (Kane, Orszag, and Gunter 2003). The rapid increase in state Medicaid expenses during the early 1990s was due to an expansion in eligibility as well as an increase in cost per enrollee. There were three primary reasons for expanded eligibility:

Expansions in the Supplemental Security Income (SSI) program. States are generally required to provide Medicaid coverage to SSI recipients.¹ Expansions in SSI coverage therefore automatically trigger expansions in Medicaid coverage. SSI coverage for the disabled rose rapidly in the late 1980s and early 1990s: The number of disabled SSI beneficiaries rose from 2.4 million in 1984 to 4.7 million in 1994 (U.S. House 2000, 214, table 3-1). This expansion reflects the 1990 Supreme Court ruling in *Sullivan v. Zebley*, which broadened eligibility to the SSI program for disabled children, increased state outreach efforts to enroll individuals in SSI rather than in state-level cash assistance programs, and expanded SSI to cover Acquired Immunodeficiency Syndrome (AIDS).²

Expansions in Medicaid coverage for low-income mothers and children. Federal legislation in the late 1980s and early 1990s required states to cover certain categories of low-income pregnant women and children. By 1992,

...when they emerged from the recession of the early 1990s, many state governments found themselves hard-pressed to reverse the cuts to higher education that had been imposed in the early 1990s. Indeed, the states with the largest Medicaid obligations were the least likely to raise state appropriations to public higher education during the recovery of the 1990s.

Board (2003, table 5a), average tuition and fees at public four-year colleges has increased from \$3,487 in 2000–01 to \$4,694 in 2003–04—a 28 percent increase in just three years after adjusting for inflation.

Falling appropriations have other less visible, but perhaps even more troubling, effects than upward pressure on tuition. Large increases in tuition at public institutions are politically costly. Understandably, governors and state legislators are eager to minimize them. As a result, tuition hikes are often not large enough to fully offset cuts in state appropriations. For instance, for the 2004–05 fiscal year, the California governor has proposed a \$372 million reduction in state support to the University of California (to \$2.670 billion in 2004–05, down almost 20 percent

nearly half of all women were eligible for Medicaid coverage if they became pregnant, and almost one-third of children under the age of 14 were eligible for Medicaid for their full medical costs (Cutler and Gruber 2002, 843).

Expansions in Medicaid coverage for Medicare beneficiaries. In 1988 and 1993, Congress required states to expand their Medicaid programs to cover certain low-income Medicare beneficiaries.

In addition to these expansions in coverage, ongoing increases in the relative cost of health care raised spending—especially on long-term care for the elderly, which is partially covered under Medicaid.

As the economy was heading into the recession of the early 1990s, state obligations under the Medicaid program were growing dramatically. As a result, when they emerged from the recession of the early 1990s, many state governments found themselves hard-pressed to reverse the cuts to higher education that had been imposed in the early 1990s. Indeed, the states with the largest Medicaid obligations were the least likely to raise state appropriations to public higher education during the recovery of the 1990s (Kane, Orszag, and Gunter 2003).

The rising importance of the Medicaid program is not simply a matter of changing state priorities. The economic incentives influencing state governments are very different for Medicaid and higher education. The federal government matches state spending under the Medicaid program (the rates vary by state, but the match rate for all states combined is more than 100 percent).³ Therefore, when a state reduces state spending on Medicaid, it loses federal funds. In California, the federal match rate is dollar for dollar. (The match rate is higher in poor states, such as Mississippi, where the federal government spends \$3 for every state dollar.) As a result, a dollar of Medicaid services for California residents costs the state only 50 cents in state funds (the cost is even lower in lower-income states).

In contrast, when a state reduces its subsidies to higher education and raises its tuition, the residents of the state may actually receive *additional* federal funds, in the form of greater eligibility for federal financial aid and greater tax credits under the Hope and Lifetime Learning tax credit programs. Usually, however, these federal funds do not make up all of the difference. For instance, the Lifetime Learning tax credit would cover 20 percent of the higher tuition costs for families with income less than \$100,000 at institutions with tuition less than \$5,000. Nonetheless, the basic point is that although state expenditures on

Medicaid are matched by the federal government, state spending on higher education is indirectly “taxed” through reduced tax credits and student loan subsidies.

Therefore, because Medicaid costs are rising and because of the incentives implicit in the federal matching rate, Medicaid expansions have tended to come partially at the expense of higher education spending. Our estimates suggest that each dollar in state Medicaid expenditures reduces state higher education expenses by 6 to 7 cents (Kane, Orszag, and Gunter 2003). Real state Medicaid spending per capita increased from roughly \$125 in 1988 to \$245 in 1998. Over the same period, real higher education spending per capita declined by \$10, from \$185 to \$175. According to our estimates, the predicted effect from the increase in Medicaid spending (6 or 7 percent of the \$120 increase in Medicaid spending) would have been a reduction of between \$7.20 and \$8.40. Therefore, the increase in Medicaid spending could explain most of the \$10 decline in higher education spending.

Medicaid costs are expected to continue rising rapidly. The U.S. Congressional Budget Office (2003, results from Scenario 2) estimates that federal Medicaid costs will rise from 1.5 percent of GDP today to 2.8 percent of GDP by 2040. Given the cost sharing between the federal government and state governments inherent in the Medicaid program, this projection also implies a substantial increase in state Medicaid costs.

Future growth will be driven by growth in the poor elderly population and by ongoing increases in health care costs. The population aged 65 and over is expected to increase from 35 million in 2000 to 70 million by 2030 (U.S. Bureau of the Census 2001, tables 11 and 13). In 2000, Medicaid financed at least part of nursing home care for more than two-thirds of nursing home residents; these expenses represented about one-quarter of total Medicaid payments (Urban Institute). Long-term care costs are expected to rise rapidly in the next few decades. According to the Urban Institute, real long-term care costs in Medicaid are projected to increase by 74 percent to 103 percent over the next 20 years.

Another source of pressure on the Medicaid program has been prescription drug costs. Almost all elderly Medicaid beneficiaries are also enrolled in Medicare, which has historically had no outpatient drug benefit. The Medicaid program has been responsible for prescription drug costs for low-income Medicare beneficiaries. As medical services have shifted toward outpatient drug-based therapies and as the

cost of prescription drugs has risen rapidly, costs have effectively been shifted from the Medicare program to the Medicaid program. The new prescription drug benefit under the Medicare program will shift a small part of the costs back to the federal Medicare program, but the final version of the legislation made states responsible in perpetuity for three-quarters or more of the drug costs that they would have incurred if the beneficiaries had continued receiving drugs through Medicaid (Park et al. 2003).

Rising Cost of Public and Private Higher Education

Despite the pressure on state budgets, expenditures per student have increased faster than inflation (as measured by the consumer price index) at public universities since 1980. Table 1 presents data on the educational and general expenditures per full-time-equivalent student in 1979–80 and 1995–96, as reported by the National Center for Education Statistics. (Unfortunately, after 1995–96, private institutions began reporting costs using a new accounting model required by the Financial Accounting Standards Board, complicating any comparisons between public and private institutions since 1996.) Expenditures per student at public universities rose 46 percentage points, from \$13,495 per full-time-equivalent student to \$19,700 (in 1996 constant dollars). Subtracting scholarship and fellowship expenditures, the rise was 42 percentage points faster than consumer price inflation.

Some observers have incorrectly interpreted these increases as signaling a problem with “cost containment.” But we should *expect* costs per student to rise more rapidly than consumer price inflation. Higher education competes with other sectors of the economy for access to its highly educated workforce. When the skills of those work-

ers become more valuable in private industry, universities have to maintain salaries or change the way they provide education to keep up. The technology required to produce a college education has been less flexible than technology elsewhere. When productivity in the general economy is increasing at 1 to 2 percent per year, real costs in industries with rigid production technologies will tend to increase at 1 to 2 percent *faster* than inflation. Baumol and Bowen (1966) used such an explanation to account for rising costs in fields with traditionally inflexible technologies, such as the performing arts and higher education.

Kane (1999) showed that the Baumol-Bowen hypothesis accurately described the growth in expenditures per student in higher education between 1950 and 1970. The rise in expenditures per student in higher education exceeded inflation, and the difference was roughly equal to the rise in productivity overall. If the technology of education were relatively static and if technological innovation in the remainder of the economy were raising the market value of the average worker’s time, this is precisely what we might have expected.

However, the relationship between higher education costs and productivity seems to have broken down after 1980, when real expenditures per student were rising faster than the increase in business-sector productivity. As noted in Table 1, real expenditures per student grew by 42 percent between 1980 and 1996, whereas real productivity in the nonfarm business sector grew somewhat less, by 30 percent.⁴

The divergence appears to be an anomaly, however, because the productivity statistics reflect the increasing earning power of the *average* worker in the economy. Universities do not hire the average worker in the economy; instead, they hire workers with very high levels of education.⁵ Since 1980, the earnings of more-educated workers

Table 1.

Real Expenditures per Student at Public and Private Universities						
Cost per FTE Student: (1996 Dollars)	Public Universities		Percent Change	Private Universities		Percent Change
	1979–80	1995–96		1979–80	1995–96	
Educational and General Expenditures	13,495	19,700	46	20,502	37,200	81
Scholarships and Fellowships	473	1,168	147	1,623	4,252	162
E & G – Scholarships and Fellowships	13,022	18,532	42	18,879	32,948	75

Note: The above were drawn from the National Center for Education Statistics, Digest of Education Statistics, 1999, Tables 349 and 352. Rather than inflating by the Higher Education Price Index, the 1979–80 data were converted to constant 1996 dollars using the CPI-U-X1.

Table 2.

	Alternative Deflators		Percent Change	Percent Difference Relative to CPI
	1980	1996		
Real Output Per Hour in Nonfarm Business Sector	80.3	105.1	31	
Consumer Price Index	82	157	91	—
Higher Education Price Index	78	173	122	* 31
Average University Faculty Salary	\$25,949	\$58,173	124	* 34
Average Earnings of Full-Time Full-Year Workers with Graduate Degrees	\$27,628	\$72,555	163	* 72

Note: The consumer price index (CPI-U-X1) is published by the Bureau of Labor Statistics. The Higher Education Price Index is available from Research Associates of Washington. Average faculty salaries for university faculty of all ranks were drawn from the National Center for Education Statistics, Digest of Education Statistics 1998, Table 234. The data on average earnings of full-time full-year workers with more than 4 years of college were drawn from the U.S. Census Bureau, Historical Income Tables P-32 and P-34 (www.census.gov/hhes/income/histinc/). The educational attainment data changed between 1980 and 1996. The estimate for 1980 is for those who have completed 5 or more years of college. The estimate for 1996 is for those with master's degrees, professional degrees, and doctorates.

in the economy have risen considerably faster than the average worker's earnings. As reported in Table 2, the unadjusted salaries of full-time, full-year workers with more than a bachelor's degree grew by 163 percent between 1980 and 1996—72 percentage points faster than consumer price inflation during the same period. Partially reflecting this economywide trend, the salaries of faculty rose by 124 percent in nominal value—34 percentage points faster than consumer price inflation during this period.

Table 2 also reports the Higher Education Price Index (HEPI), which measures the average relative level in the prices of a fixed market basket of goods and services purchased by colleges and universities (as of 1972). The HEPI is based on the prices (salaries) of faculty, administrators, and professional service personnel; clerical, technical, service, and other nonprofessional personnel; contracted services such as data processing, communication, transportation, supplies, materials, and equipment; library acquisitions; and utilities. Although it includes prices other than faculty salaries, the rise in the HEPI essentially mirrored the rise in average faculty salaries, growing 31 percentage points faster than consumer price inflation between 1980 and 1996.

Widening Gaps Between Public and Private Universities

Although state budget pressures were not so severe as to prevent any growth in real expenditures at public institutions, public higher education did fall considerably behind

private higher education after 1980. As reported in Table 1, expenditures per student in private higher education grew by 81 percent overall and 75 percent after subtracting scholarships and fellowships—nearly double the rate at public institutions.

The decline in spending per student at public institutions relative to private ones manifested itself in a striking decline in relative faculty salaries. Between 1981 and 2001, average salaries at public institutions for assistant, associate, and full professor declined 16 to 24 percent relative to private institutions (Kane and Orszag 2003; Hammermesh 2002; Zoghi, forthcoming). The decline occurred at both more- and less-selective institutions. Much of the decline occurred during the 1980s and during the recession of the 1990s. (Although they did not make up the ground lost during the previous decade and a half, public salaries appear to have kept pace with private-sector salaries during the late 1990s.) At the same time, student-faculty ratios stayed the same or rose slightly at public institutions and fell at private institutions (Kane and Orszag 2003).

Such substantial changes in relative spending overall and on faculty members specifically are likely to generate differences in educational quality over time. Indeed, a number of different indicators suggest that the quality of public higher education may have slipped behind that of private higher education. For example, faculty members at research and doctoral public universities are more likely to report that the quality of undergraduate education at their institutions has declined than are faculty at private institutions. In the Department of Education's 1999 survey of

postsecondary faculty, nearly half of the tenured faculty at public institutions agreed or strongly agreed with the statement that the quality of undergraduate education at their institution had declined in recent years, compared to slightly more than a third of tenured faculty at private institutions. Public institutions also seem to be increasingly likely to lose talented students to private institutions. Among institutions with similar students in 1986, math and verbal SAT scores increased more rapidly at private institutions between 1986 and 2000.

Conclusion

As the economy emerges from the current recession, public universities may not find the much desired respite from their budgetary woes. Although the short-term crisis may have passed, states will continue to grapple with their burgeoning commitments under the Medicaid program. To make matters worse, many states are expecting large increases in the size of the college-age population in coming years, as the children of the baby boomers reach college age. For example, the number of 18- to 24-year-olds in California is expected to increase by 30 percent over the next 10 years (Campbell 1996).

The heavy reliance on state operating subsidies to keep tuition low makes public colleges and universities vulnerable to further cost pressure. Increasingly, state governments will find themselves trading off continued low levels of tuition against academic excellence.

Many have long advocated stretching existing public subsidies further by raising tuition while increasing financial aid for the neediest students. We will not rehash that familiar debate here. But the higher education community should also be considering other options. For example, public colleges and universities should be more active in helping to resolve the problem of rising state Medicaid costs—not just because it is a pressing public policy problem, but because a resolution will have implications for the health of public higher education as well. States might also consider ways to ease loan burdens for middle- and higher-income families concerned about rising tuition—for example, with tax credits for borrowers who remain in the state after graduation. An expanded federal match for means-tested grant aid for students may offset the temptation for states created by the federal match for Medicaid expenditures.

We do not presume to have all the answers. For the

time being, we would be content simply to expand the conversation. Traditional discussions over rising tuition policies typically take for granted the quality of the education offered at public institutions of higher education. Such quality is difficult to measure and, in the heat of the debate over next year's budget, it is easy to discount. However, looking back over two decades, there are clear signs of a widening gap in the quality of education provided by public and private institutions. That may be a trade-off that voters and our political leaders are willing to accept, but we cannot know that until we engage the debate.

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Notes

¹ The principal exception to this rule involves section 209(b) states. For further discussion, see U.S. House 2000, 897–98.

² See, for example, Rupp and Stapleton 1998 and Holahan and Liska 1997.

³ In 2003, the federal government paid for slightly less than 60 percent of total Medicaid costs (see U.S. Congressional Budget Office 2003, 28–29). If the federal government pays for, say, 55 percent of the total cost, the match rate is 55/45, or 122 percent. The match rate is 150 percent if the federal government pays for 60 percent of the total cost (60/40).

⁴ President 2004, 342, table B-49. Note that productivity growth increased in the late 1990s; as noted in the text, we lack comprehensive data on expenditures per student for this period.

⁵ As Kane (1999) pointed out, the difference between the growth in educational expenditures per student and consumer inflation was actually smaller than the growth in productivity during the 1970s, when the earnings of more-educated workers were growing more slowly than the average worker's salary.