

Dimensions of the Fiscal Crisis

Will California's higher education sector be equipped to meet the needs of future students? Because of population growth alone, the state will have to be prepared to educate 60 percent more students in 2015 than it educates in the current 1997–1998 school year. And if the proportion of the population that attends college also increases, as we think it will, the student population will be even larger. Will the revenue base of California's colleges and universities be sufficient to handle such an increase?

Our analysis shows that if current funding trends continue, the higher education sector will face a calamitous shortage of resources. Unless public funding increases significantly and

institutions undergo fundamental internal restructuring to improve their productivity, access to higher education is going to be dramatically reduced in the future.

Growth in Demand

Enrollment in California's colleges and universities has grown rapidly since the 1930s. This growth was fueled, of course, by a growing California population. But this growth also reflects the phenomenal increase in the percentage of Californians pursuing education beyond high school. California's population is expected to continue to grow into the next century, as is the rate at which Californians go to college. As Figure 5 shows, if

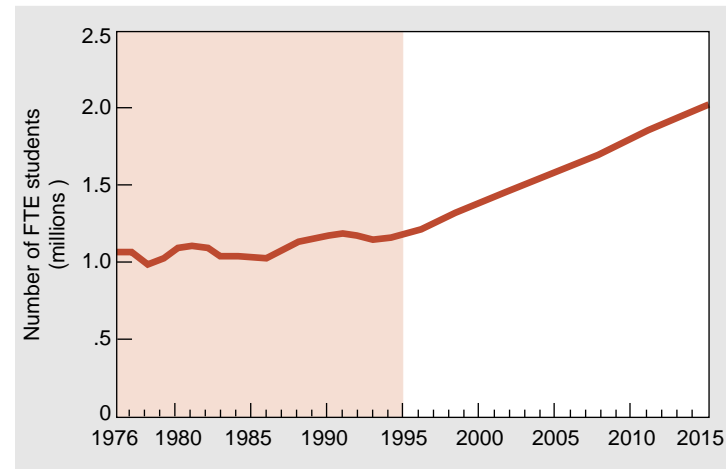


Figure 5—Past Enrollment and Projected Demand for California Higher Education

these trends continue, the total number of students in the state's colleges and universities will increase from the 1997 level of 1.3 million to about 2 million full-time equivalent (FTE)

students by 2015—a 60 percent increase, and twice the projected increase for the nation as a whole. These estimates are based on the projections of the California Postsecondary

Education Commission and do not reflect higher rates of participation among Hispanics and African Americans that we believe must be encouraged.⁷

Growth in Operating Costs

The operating costs per student in higher education have also

risen. In fact, they have grown consistently for at least 30 years, escalating sharply since the late 1970s. A major reason for this increase is the escalating prices of goods and services. The Higher Education Price Index (HEPI) reflects real increases in prices paid by higher education institutions for those goods and services.⁸ As Figure 6 shows, the HEPI rose almost sixfold

⁷“Enrollments in California Public Postsecondary Education,” *Fiscal Profiles 1996*, displays 53–56. RAND projections are based on California Postsecondary Education Commission, *Student Profiles 1995*. We computed the participation rates by age implicit in those projections and extrapolated the trends in those rates through 2015. We then multiplied estimated participation rates by the census projections of age distributions of the population to 2015.

Note our usage of “full-time equivalent” students. Since many students are part-time, placing smaller burdens on institutions, they are traditionally counted as FTE students. Thus, for example, a part-time student whose course load is 70 percent of a full-time load is counted as 0.7 FTE. For forecasts of actual headcount enrollments, see California Postsecondary Education Commission, *Challenge of the Century*, CPEC 95-3, April 1995.

⁸The HEPI is a national index that measures the average change in prices over time for a fixed basket of goods and services that higher education institutions buy to support current operations. These goods and services include salaries of faculty, administration, and other professional and nonprofessional personnel; contracted services such as communications and transportation; supplies and materials; equipment; library acquisitions; and utilities. See Research Associates of Washington, *Inflation Measures for Schools, Colleges, and Libraries*, Washington, D.C., 1995.

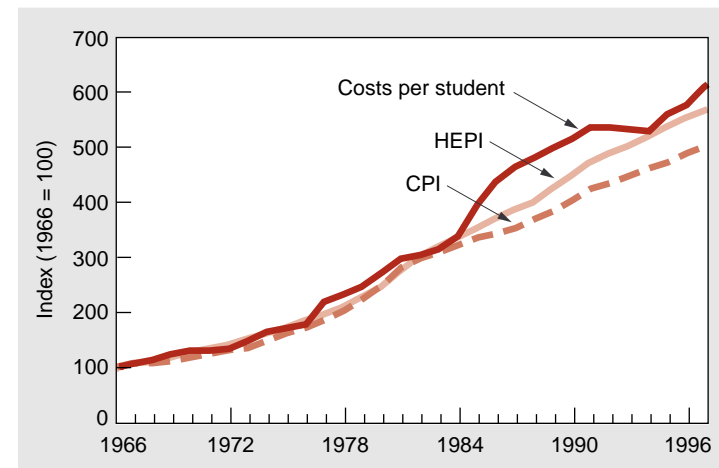


Figure 6—Growth in Operating Costs: California Higher Education Institutions

between 1966 and 1995. Higher education's costs grew faster than inflation, as measured by the Consumer Price Index (CPI), between 1980 and 1995. The annual average rate of growth in the costs of providing higher

education exceeded the CPI by a full percentage point.

No index comparable to the HEPI exists for California. However, the average expenditure of unrestricted funds per

FTE student in each of the three public systems varies with the mix of personnel and material purchased.⁹ Because this mix for any of California's three public systems does not vary much over time, most of the observed changes in the level of average unrestricted expenditures can be attributed to changes in the prices paid for personnel and material. The line labeled "Costs per student" in Figure 6 shows the trend in aggregate average unrestricted expenditures per FTE student in California's public systems. The effects of

the business cycle are clear: In good economic times, such as the mid-1980s (in contrast to the mid-1970s), expenditures per student grow rapidly; in poor economic times, such as the early 1990s, expenditures per student grow slowly. But, overall, the trend is consistent with the trend in the HEPI. If anything, it appears that costs in California's public systems, as measured by unrestricted expenditures, may be growing even faster than costs nationally, as measured by the HEPI.¹⁰ A sector whose costs grow faster than inflation for an

extended period ultimately reaches the limits of available resources, as has been demonstrated in the health-care industry.

Decline in Public Funding

Given the increases in demand and costs, it is surprising that public funding has not shown similar increases. As Figure 7

⁹All funds except those for externally supported research and from the sale of services (such as medical care) are considered unrestricted funds.

¹⁰The "Costs per student" line in Figure 6 is for all three public systems combined. When we performed this calculation for each of the systems separately, the lines showing their respective average expenditures of unrestricted funds per FTE student were indistinguishable. A recently initiated study by the Institute of Higher Education, supported by Dr. Barry Munitz and sponsored by the Ford Foundation, is examining the cost and productivity questions in substantial detail.

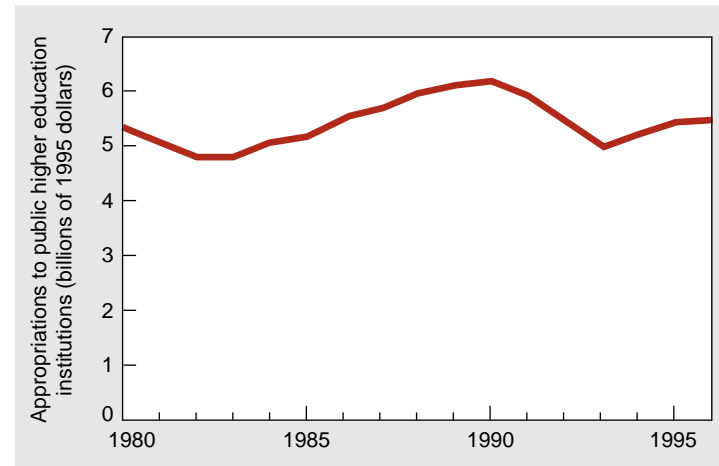


Figure 7—General Fund Appropriations to Higher Education in California

shows, California general fund appropriations to higher education grew slowly from 1982 to 1989 in real terms but then declined in the early 1990s.¹¹ They have increased slightly in

the past three years, and projections for funding increases are positive for 1998 and 1999. However, the relatively stable, flat 25-year history of general revenue appropriations to

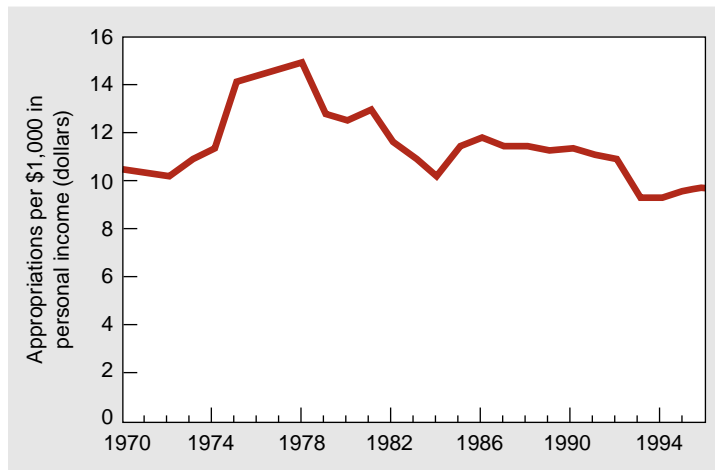


Figure 8—Share of Personal Income Allocated to California Public Higher Education

California postsecondary education is likely to remain largely unchanged.

In effect, California has been underfunding higher education since the mid-1970s. Although taxes have been steadily increasing, the share of personal income allocated through state and local government appropriations has been declining for the past 20 years.¹² Figure 8 shows the share of personal income allocated through state and local government appropriations to higher education from 1970 to 1996. From 1970 to 1978, Californians increased the share of their personal income that went to

higher education—from just over \$10 to \$15 per \$1000 earned. Since 1978, however, that share has been steadily decreasing. At the federal level, spending priorities have also changed.

One of the main reasons for that decline is that California's mandatory expenditures on health and welfare programs, K-12 education, and corrections are consuming a rapidly increasing share of the general fund. The plight of higher education in state budget battles is exacerbated by rapid increases in spending on corrections, mainly prisons. Figure 9 shows the 1995 distribution of California state

¹¹These RAND calculations are based on data from the *Governor's Budget, State of California, 1970-1997*.

¹²These RAND calculations and those used for Figure 8 are based on data from the *Governor's Budget, State of California, 1970-1997*.

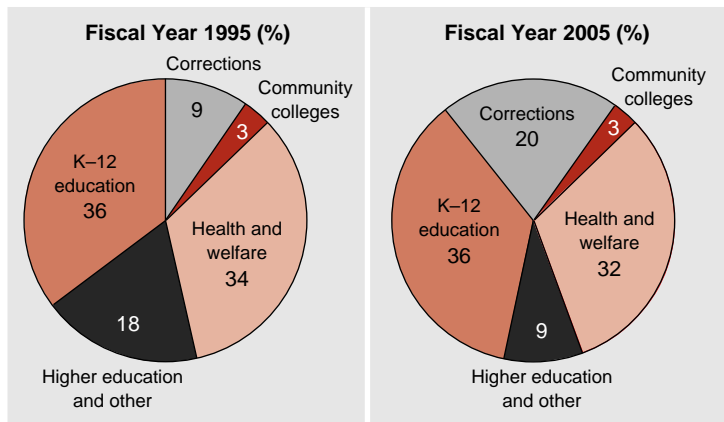


Figure 9—Distribution of California General Fund Expenditures

government spending and extrapolates existing trends through 2005 to indicate their consequences.¹³ Of course, funding priorities can always be

changed, but two successful constitutional propositions that direct resources to corrections and K-12 education would have to be overturned.

¹³Stephen Carroll, Eugene Bryton, C. Peter Rydell, and Michael A. Shires. *Projecting California's Fiscal Future*, MR-570-LE, Santa Monica, Calif.: RAND, 1995.

Another reason that state government support for higher education has stagnated is the public's growing reluctance to authorize general fund revenues to be used for services directly delivered to individuals. By means of referendums and propositions, voters have imposed limits on such use of general funds and reduced cross-subsidies to specific populations in favor of increasing direct fees for services. As a result, students are bearing a larger share of the cost of higher education, for which it is assumed they receive increased benefits in return.

At the federal level, spending priorities have also shifted. The growth of entitlements—

most notably, Social Security, Medicare, and Medicaid—has dominated federal spending, as Figure 10 illustrates. Mandatory spending on entitlement programs and interest on the national debt consumed about 38 percent of the federal budget in 1965. In 1995, they accounted for about 67 percent. The entitlement programs focus largely on older Americans, which means that as the baby boomers age, the population drawing on these programs will increase. The Congressional Budget Office estimates that by 2005—less than a decade from now—these programs will consume almost 75 percent of federal revenues. This vast intergenerational transfer of wealth is squeezing higher education out of the federal budget and cutting

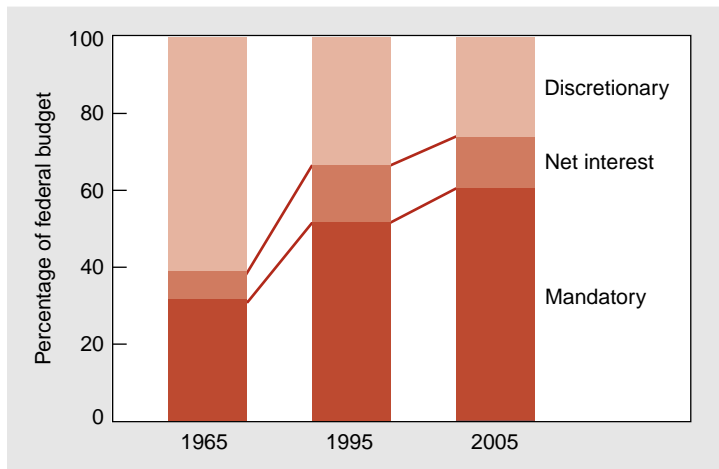


Figure 10—Erosion of Federal Budgetary Discretion by Entitlements

into federal funding for research. Since more than 20 percent of the University of California's budget comes from federal research dollars, the growth in entitlements threatens to weaken one of the world's finest research institutions.

Because state and federal government support for higher education has declined both economically and politically over a long period, it will be difficult to bring it back to previous levels. Now that there are

stringent fiscal limits on the states' public resources, state government is beginning to ask the same kinds of questions of colleges and universities that it has asked of the health-care industry—questions about cost, productivity, efficiency, and effectiveness. Until institutions of higher education can provide good answers to such questions, it will be difficult to increase public support and to regain the priority formerly given to higher education in federal and state budgets.

Tuition Growth

Because government funding has not kept pace with costs,

institutions have had to increase tuition.¹⁴ Figure 11 shows the growth of tuition per FTE student in California's public colleges and universities relative to 1981.¹⁵ Because government support essentially covered higher education's costs throughout the 1970s, tuition was quite low at the beginning of the 1980s. However, government support fell slightly below costs per student (in real terms) in the 1980s. To make up the difference, tuition—about 5 percent of the amount provided by the government in 1981—had to increase sharply, doubling by 1985. As government support fell further in the 1990s, tuition continued to soar. By the late

¹⁴Although the University of California uses the term fees instead of tuition, this report uses tuition throughout.

¹⁵California Postsecondary Education Commission, "Student Tuition and Fee Charges and Revenues," *Fiscal Profiles 1996*, displays 4, 26–31, and 53–56.

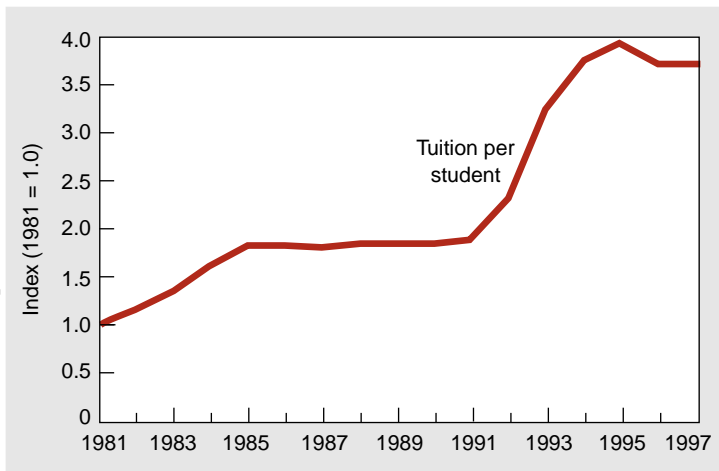


Figure 11—Growth of Tuition in California

1990s, tuition in California's public colleges and universities was four times as high as it had been two decades earlier.¹⁶ The rest of the shortfall was made up by cuts in the instructional budget, which may well have reduced the quality of education.

If appropriate steps are not taken, higher education in California could become so expensive that between 30 and 45 percent of students (600,000 to 900,000 FTE students) will be denied access. If average real tuition,

adjusted for inflation, quadruples again in the next 20-year period (1996 to 2015), large numbers of students will be priced out of the system.¹⁷ The consequences of such exclusion will not be confined to the affected student

population. Those who are denied access to college will probably not be able to afford to send their children to college 20 years later. The social and economic ills generated by inadequate levels of education

¹⁶Figure 11 shows gross real tuition and thus does not address, for example, the increasing efforts of institutions to lower the net price to many students, who actually pay less than full tuition. Indeed, one of the reasons for the increasing price of higher education is that universities and colleges are attempting to maintain access for low-income students by offering aid packages to make up for reduced state support.

¹⁷From 1985 to 1989, state need-based aid grew faster than undergraduate enrollment and tuition at each of the public higher education systems. This pattern changed significantly from 1990 to 1994. While need-based aid grew more rapidly than it had in the earlier period, it fell well behind the growth of tuition at each of the public higher education systems.

The California Master Plan's original purpose in providing student financial aid primarily for private institutions changed dramatically between 1960 and 1990. In 1961, more than 91 percent of the State Scholarship Commission's grants went to students in the private sector. By 1994, the proportion had fallen to 30 percent. The number of awards in the Cal Grant A portion of the program, which provides coverage primarily for tuition for private institutions, doubled from 1970 to 1980 (going from 15,914 to 38,735), but grew hardly at all during the 1980s and 1990s. This dramatic decline was not the result of the state's adopting a policy to redirect funds away from the independent sector. Rather, it was a natural by-product of the state's adding numerous grant programs having purposes other than providing grants to private institutions. The negative consequences of this trend should be recognized and reversed, and the California grant program should be expanded so that the independent colleges can accommodate an additional 40,000 to 80,000 undergraduate students, thus relieving some of the demand for enrollments in the public system and therefore mitigating cost increases.

will reverberate through successive generations.

Increased private sector support of higher education by alumni, other individuals, corporations, and foundations can help and has done so already—private grants, gifts, and endowment income have roughly doubled over the past two decades. However, private sector and endowment income represents a relatively small proportion of the total higher education budget and is concentrated in the private, relatively elite, and wealthy institutions that serve a smaller share of the total student population.¹⁸

¹⁸For trends in private giving, see Council for Aid to Education, *Voluntary Support of Education*, New York, annual. (See also www.cae.org.)

¹⁹See Michael A. Shires, *The Future of Public Undergraduate Education in California*, MR-561-LE, Santa Monica, Calif.: RAND, 1996.

The Bottom Line

Given funding projections, it will be extremely difficult to generate the operating revenues needed to maintain today's enrollment rates, let alone provide for future increases. Until now, institutions have been paying for rising costs by sharply increasing tuition. Tuition, which accounted for a negligible fraction of revenues through the 1970s, climbed to 18 percent of total resources by 1995. If such increases continue, they will shortly reach the point where they begin to deter Californians from pursuing higher education.

In fact, there is some evidence that they have already done so.¹⁹

If colleges and universities stop using tuition hikes to fill the resource gap, their fiscal prospects will be bleak. Figure 12

illustrates the dimensions of the problem. Again, these projections do not reflect the growing need for capital expenditures, which would drive up the shortfall significantly. The figure shows the fiscal consequences if tuition

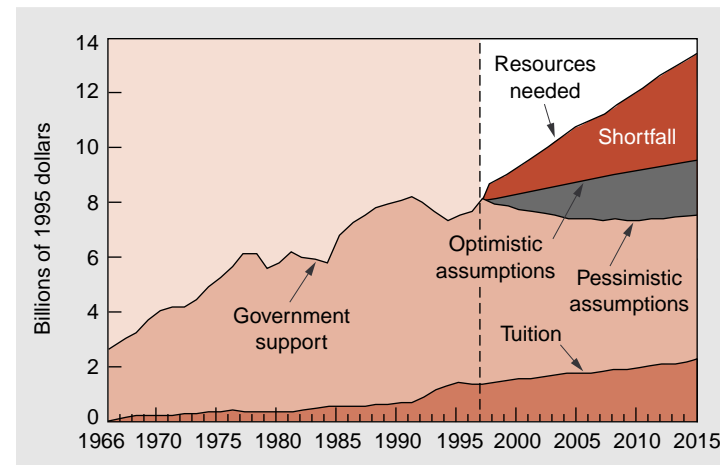


Figure 12—Funding Shortfall Facing California Higher Education in the Next 20 Years

increases are capped at the rate of inflation, current trends in participation continue, and the higher education sector continues to operate the way it does today and does little to control costs.

The graphic shows two scenarios for government support in the future. The pessimistic projection is based on RAND forecasts of California's general fund revenues and state spending for corrections, health and welfare, and K–12 education through 2005, extrapolated through 2015. The optimistic projection assumes government appropriations to public higher education will continue to grow at the rate

established when California emerged from its recent recession.²⁰

As can be seen, even if the optimistic funding level is realized, the public higher education sector will fall far short of what it needs for operation by the year 2015. In 1995 dollars, higher education will have to spend about \$13.6 billion annually to serve future students if costs continue to grow at current rates. If the optimistic assumptions prevail, public funding and tuition will provide about 70 percent of that amount in 2015. If the level of public funding does not grow, however, resources from

state and local government and tuition will provide just over half of what California's colleges and universities will need to serve the student population in 2015.

Window of Opportunity

The recent upsurge in the California economy gives higher education and political leaders breathing space to discuss, debate, and respond to the economic and social trends we have described. Good economic conditions are inevitably followed by recessions, and there is no reason to believe that the current high rates of economic growth, and the consequent increases in state and local government revenues, will continue for very long. Real personal income in California grew rapidly in the early 1970s,

declined in the mid-1970s, and then grew into the 1980s. A sharp recession in the early 1980s was followed by robust expansion through the remainder of the decade, but the good economic conditions of the late 1980s then ushered in California's most severe recession in half a century. In brief, decisionmakers cannot assume that the fiscal crisis facing higher education in California (and, for that matter, the nation) has been averted. Rather, they must recognize that they are being given an opportunity to plan for the inevitable fiscal constraints of the future. In the spirit of contributing to the needed debate, we outline a plan in the following recommendations that represents a marriage of increased public investment and institutional restructuring. ♦

²⁰George Park and Robert Lempert examine a range of alternative scenarios for future enrollments, government support, and tuition policies. Although details differ from one scenario to another, the overall pattern confirms the results shown in Figure 12. See *The Class of 2014: Preserving Access to California Higher Education*, MR-971-CERT, Santa Monica, Calif.: RAND, forthcoming.