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DO ACADEMIC RESEARCH COSTS DRIVE UP UNDERGRADUATE TUITION?

Division of Science Resources Studies

ISSUE BRIEF

NSF 97-313 July 18, 1997

Tuition increases reflect common dynamics affecting all types of higher education institutions, rather than the presence or absence of research in some of them.

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Results in Brief

R Increases in tuition and fees charged by the Nation's colleges and universities from 1980-94 averaged 225 percent and were virtually identical for all types of public and private institutions, from those with heavy involvement in research to those with little or none. This suggests that tuition increases result from common underlying dynamics, which affect all of higher education, rather than from the presence or absence of organized research activity in some types of institutions. However, universities do report paying for about one-fifth of their total research expenditures with funds from their unrestricted accounts, which include tuition. Thus, some subsidy by undergraduate tuition for research over the period is consistent with the data presented here.

Increases in tuition and fees charged by the Nation's universities and colleges have been steeper than the rise in median household income and the Consumer Price Index: 225 percent from 1980-94, vs. 82 percent and 74 percent, respectively.¹ This has given rise to suggestions that revenue from undergraduate tuition is used to subsidize activities—research among them²—not directly related to undergraduate instruction. The link to

¹These figures are taken from General Accounting Office (GAO), *Higher Education: Tuition Increasing Faster Than Household Income and Public Colleges' Costs*. Washington, D.C., GAO, HEHS-96-154, 1996. The GAO report cites a slightly higher tuition and fees increase, 234 percent vs. 225 percent reported here. The difference reflects the deletion from the present analysis of institutions for which tuition information was unreported in the beginning or end of the period, and the omission of certain specialized institutions.

²"Research Grants Actually Add to Tuition Cost, Study Claims;" *Chicago Tribune*, January 1996, front page article by Ron Grossman. The article cites a University of Rhode Island study, an older analysis of the American Council on Education, and a finance official of the University of Michigan in support of its central claim. The article was instrumental in generating the aforementioned GAO study. (The University of Rhode Island authors have since argued that their study was misrepresented.) For a further summary, see Colleen Cordes, "Study Links Federal Research Grants to Increases in Tuition," *The Chronicle of Higher Education*, February 16, 1996, p. A29.

research reflects the fact that some costs incurred in the conduct of research supported by Federal grants (e.g., cost overruns, charges for use of laboratory space originally constructed with Federal funds) cannot be reimbursed under OMB rules, and that Federal agencies may require some university cost sharing as a prerequisite for making an award.

To provide an assessment of the view that research costs are driving up undergraduate tuition, 1980-94 financial statistics of 1,339 universities and four-year colleges³ were examined, grouped by public and private control and Carnegie type.⁴ This allowed the comparison of tuition increases for higher education institutions with differing levels of research activity—extensive to little to none—and differing governance structures.

Do research costs drive up tuition charges?

Over the 1980-94 period, tuition and fees increases for the 1,339 four-year colleges and universities were substantial, averaging 225 percent before adjusting for inflation. Increases at universities with extensive research

³Data are drawn from the U.S. Department of Education, National Center for Education Statistics Integrated Postsecondary Education Data System, and from the National Science Foundation surveys of Academic Research Expenditures. Special tabulations of these data derive from SRS' Caspar database, available via the SRS Home Page.

⁴See *A Classification of Institutions of Higher Education*, 1994 edition; Carnegie Foundation for the Advancement of Teaching; Princeton, New Jersey. Research universities have a full range of baccalaureate and graduate programs, award large numbers of doctorates, give high priority to research, and receive large amounts of Federal funds. Doctoral universities award a smaller number of doctorates, put less emphasis on research, and receive less Federal funding. Comprehensive or Masters level institutions have broad graduate programs but award few or no doctorates. Baccalaureate institutions have a broad focus on undergraduate programs. Specialty institutions—freestanding health, technical, teacher education, art, and business schools—have been excluded from all aspects of this analysis.

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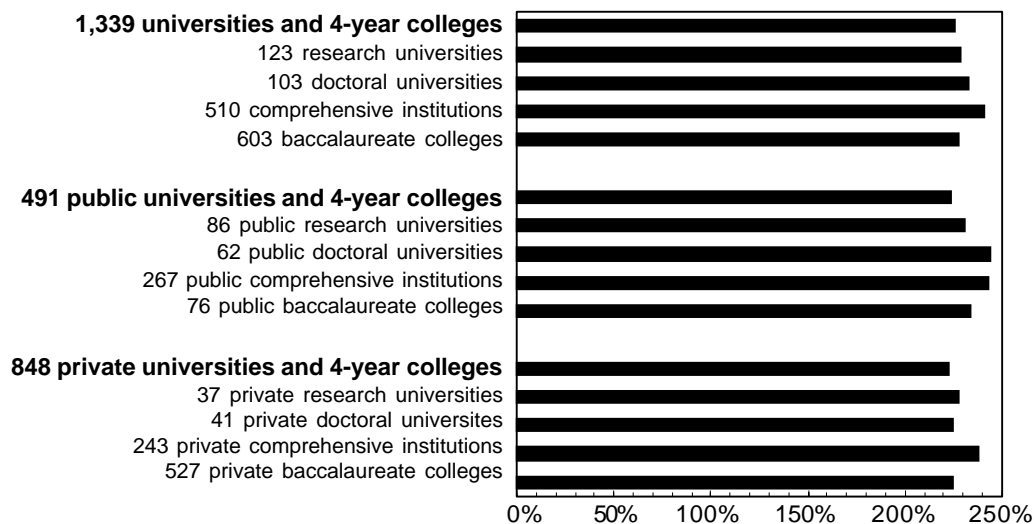
activities were somewhat larger than at institutions with little or no research, but these differences were marginal—238 percent vs. 223 to 228 percent for other types of institutions—in view of the substantial overall rise for all types of institutions and the long time span covered.

The relative increases in tuition over the period were almost identical for all types of institutions, from the most to the least research-intensive, and for public and private institutions of the same type (Chart 1). These data strongly suggest that

stitutions and four-year colleges. Private research universities' charges were about 32 percent above those of their private doctoral counterparts, and 63 to 67 percent higher than those of the other private universities and colleges. The research universities' higher base of tuition charges has resulted in larger dollar increases for them over time than for the other types of institutions (Table 1). However, the differential of the research universities' tuition charges relative to those of other types of institutions remained roughly stable over the 1980-94 period (Chart 2).

Relative increases in tuition charges from 1980-94 were almost identical for all types of institutions, from the most to the least research-intensive universities and colleges

Chart 1. Increases in full-time in-state undergraduate tuition and fees charges of universities and four-year colleges* by Carnegie class and type of control: 1980-94



*excludes two-year and free-standing engineering, health, medical, art, business, and religious training institutions.

SOURCE: National Science Foundation/SRS, Caspar database, special tabulation.

common underlying dynamics affecting all types of universities and colleges, rather than the presence or absence of organized research activity in some of them, are driving the observed increases in tuition and fees charges.

Are research universities charging higher tuition than other institutions?

The research universities' tuition and fees charges have historically been higher than those of other types of universities and colleges. In 1994, the average charge at public research universities was roughly 14 percent higher than that of public doctoral institutions, and 27 to 30 percent higher than those of comprehensive in-

Does undergraduate tuition subsidize academic research?

The universities and colleges examined received about 60 percent of their total R&D funds from the Federal Government. In 1994, they reported R&D expenditures of \$3.5 billion from their own⁵ funds, about 19 percent of their total R&D. This amount included an estimated underrecovery⁶ of \$1.85 billion (an estimate of

⁵This category includes funds drawn from any of an institution's unrestricted accounts; for public institutions, this may include non-restricted state funds used by the university to pay for research activities.

⁶This includes some cost sharing.

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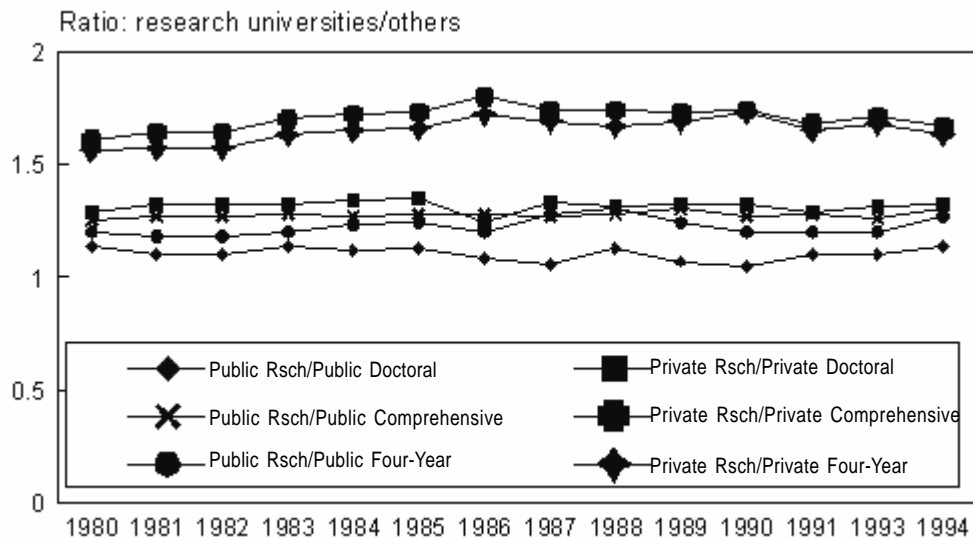
Table 1. Average tuition and fees charges of universities and four-year colleges* by Carnegie class and type of control: 1980-94

Year	Public				Private			
	Research	Doctoral	Comprehensive	Other	Research	Doctoral	Comprehensive	Other
1980.....	\$896	\$787	\$716	\$749	\$4,993	\$3,869	\$3,097	\$3,204
1981.....	1,015	925	799	859	5,762	4,362	3,509	3,661
1982.....	1,015	925	801	859	5,762	4,362	3,517	3,661
1983.....	1,297	1,137	1,015	1,083	7,300	5,543	4,288	4,485
1984.....	1,385	1,234	1,091	1,131	8,053	6,009	4,674	4,880
1985.....	1,397	1,234	1,091	1,124	8,098	5,990	4,682	4,884
1986.....	1,565	1,450	1,223	1,310	9,838	7,921	5,468	5,724
1987.....	1,699	1,608	1,338	1,323	10,430	7,864	5,981	6,186
1988.....	1,846	1,629	1,446	1,417	11,213	8,547	6,458	6,729
1989.....	1,986	1,863	1,533	1,596	12,298	9,298	7,113	7,288
1990.....	2,093	1,984	1,654	1,741	13,572	10,245	7,783	7,845
1991.....	2,403	2,189	1,871	1,995	14,171	11,022	8,421	8,605
1992.....	2,634	2,385	2,086	2,205	15,361	11,737	8,997	9,160
1993.....	2,878	2,588	2,237	2,326	16,204	12,327	9,611	9,816
1994.....	3,075	2,709	2,373	2,428	17,038	12,875	10,194	10,450

*excludes two-year and free-standing engineering, health, medical, art, business, and religious training institutions; see Footnote 3 for information on Carnegie classification of academic institutions.

SOURCE: National Science Foundation/SRS, Caspar database, special tabulation.

Chart 2. Ratio of research universities' tuition and fees charges to those of other four-year institutions,* by Carnegie class and type of control: 1980-94



*excludes two-year and free-standing engineering, health, medical, art, business, and religious training institutions.

SOURCE: National Science Foundation/SRS, Caspar database, special tabulation.

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costs incurred in conjunction with externally supported research—not necessarily federally funded—for which the university was not reimbursed). The unrecovered sum in 1994 was estimated at 9.5 percent of total R&D, a percentage that has been roughly steady for a decade.

For Federal research grants, OMB rules govern which costs an award may cover and which may not be reimbursed (e.g., charges for use of laboratory space originally constructed with Federal funds). In addition, some Federal agencies may require that universities *cost-share*—i.e., by contributing some agreed upon portion of a federally supported project's total cost using funds from other sources⁷. Both these items, unreimbursed costs and cost sharing, are counted as universities' own funds, along with institutionally financed organized research; research that is not separately budgeted is generally excluded.

⁷For a recent critical assessment of the impact of Federal matching and cost sharing requirements on academic institutions and the structure of the academic research system, see *Matching Fund and Cost Sharing Experiences of U.S. Research Universities*, Irwin Feller, Pennsylvania State University, March 1997.

Universities may pay for these “own” research expenditures, including underrecovery and cost sharing, from a research account or from any of their unrestricted funds accounts:⁸ revenue from state sources, industry, private donors, educational sales and services, auxiliary enterprises such as campus stores, etc., and tuition. Thus, a subsidy of research by tuition cannot be ruled out and might be contributing to the research universities' persistently higher tuition charges. However, the nearly identical tuition increases by all types of institutions would appear to argue against research costs driving up the cost of tuition.

It might be argued that, as growing research costs prompt research universities to increase their tuition charges, the other types of institutions follow suit; i.e., that research costs in some institutions help drive up tuition in all of them. However, it is equally

⁸A related Issue Brief will discuss trends in academic research funds in the larger context of academic finances. See “Academic Research and Changing University Finances,” 1997 (forthcoming).

conceivable that the research universities are merely responding to the latest increase in tuition charges of other institutions. Both arguments are consistent with data shown in Chart 2, but which might be right, if either, cannot be determined with confidence. Thus, conceptual problems, the fungibility of university revenues, lack of uniform accounting structures in universities and colleges, and the absence of a sufficiently detailed national database preclude drawing a more precise conclusion.

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