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Effect of Indirect Cost Revisions and Options for Future Changes

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Chairman
The Honorable Robert C. Byrd
Ranking Minority Member
Committee on Appropriations
United States Senate

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House of Representatives

Federal agencies obligated about $12 billion to universities and colleges for scientific research in fiscal year 1994. The government pays for direct costs specifically identified with a particular research project as well as indirect costs for associated administrative and facilities expenses. For every dollar spent for the direct costs of universities' research, subject to certain exclusions, the government pays an additional 50 cents, on average, to cover its share of universities' indirect costs.

The Conference Report to the Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1994, directed us to examine the federal government's principles, contained in Office of Management and Budget (OMB) Circular A-21, for allowing universities to recover indirect costs associated with the performance of federally funded research. Specifically, we were asked to assess the effect of (1) October 1991 revisions to Circular A-21 that primarily established a 26-percent cap on federal reimbursements to universities for three components of their administrative costs and (2) July 1993 revisions that further clarified and tightened certain indirect cost accounting procedures, including the specification that the remission of tuition for graduate students working on federally funded research be treated as a direct cost. We were also asked to identify alternatives for further revising Circular A-21's cost principles to control the growth of indirect costs, improve consistency in the way that universities treat costs,

and/or streamline indirect cost accounting procedures. This review follows up on our August 1992 report on universities' indirect costs.[1]

The information in this report is based on responses to our questionnaire sent to 140 major research universities that received about 88 percent of the federal funds obligated to universities and colleges for research. We also interviewed cognizant officials from OMB, the Department of Health and Human Services (HHS), the Department of Defense, the Department of Energy, the National Science Foundation (NSF), and the National Aeronautics and Space Administration (NASA). HHS and the Office of Naval Research, within Defense, are primarily responsible for negotiating indirect cost rates with universities.

Results in Brief

Among the 140 universities we surveyed, the 26-percent administrative cap directly affected 69 whose administrative rate had been higher than 26 percent, thus reducing government spending for these costs by about $104 million in fiscal year 1993. The cap also resulted in more uniform overall indirect cost rates among universities—while 29 of the 140 surveyed universities had an overall rate greater than 60 percent in fiscal year 1992, only 19 universities had an overall rate greater than 60 percent in fiscal year 1995.

The effect of the July 1993 revisions is unclear because they are being implemented only when each university and its cognizant federal agency renegotiate the multiyear rate agreement. According to a 1992 federal task force study, the change in the treatment of tuition remission costs could substantially reduce the number of doctoral candidates in science and engineering at four universities that account for a significant portion of all engineering doctoral students in the United States.

Various alternatives have been proposed to control the growth of indirect costs, improve consistency in the way that universities treat indirect costs, and/or streamline accounting procedures for indirect costs. OMB included several of these proposals, designed to further tighten and simplify Circular A-21's cost principles, in its February 1995 Proposed Revision to Circular A-21. Almost all of the federal officials we interviewed and universities we surveyed oppose a total cap on indirect cost rates because they believe a cap will adversely affect universities' ability to provide the

[1]Federal Research: System for Reimbursing Universities' Indirect Costs Should Be Reevaluated (GAO/RCED-92-203, Aug. 26, 1992). See the list of related GAO products at the end of this report.

modern laboratory facilities and equipment needed to perform advanced scientific research.

Background

OMB Circular A-21, "Cost Principles for Educational Institutions," addresses the extent to which universities' indirect costs can be charged to federally funded research. Circular A-21 is designed to provide that the federal government bear its fair share of total costs, determined in accordance with generally accepted accounting principles, except where restricted or prohibited by law. By consolidating seven indirect cost components into the administrative and facilities categories, the 1991 and 1993 revisions have clarified how universities incur and allocate indirect costs. The capped administrative category includes general administration and expenses, departmental administration, sponsored projects administration, student services, and other miscellaneous costs. The facilities category includes depreciation and/or use allowance, operations and maintenance, and library costs.

The average overall indirect cost rate of 118 universities that HHS tracks grew from 48.8 percent in 1986 to 50.5 percent in 1995.[2] Federal efforts to control indirect cost growth have focused on administrative rates, which fell 1.7 percentage points in 1993 as a result of the administrative cap. In contrast, rates for the facilities category increased by 4.3 percentage points during this period, so that with the addition of library costs, facilities costs account for slightly more than half of the overall indirect cost rate in fiscal year 1995.

The National Science and Technology Council was established by Executive Order 12881 in November 1993 to oversee federal science and technology policy. In a November 1994 report, the Council's Subcommittee on Research recommended ways to stabilize the federal reimbursement of indirect costs, narrow the range of rates, and develop a simplified methodology for financing research facilities. On February 6, 1995, OMB published in the Federal Register a Proposed Revision to Circular A-21 that implements these recommendations.

[2]HHS weighted each university's indirect cost rate by the amount of federal research funding received.

The 1991 Revisions Reduced Government Spending for Administrative Costs and Made Rates More Uniform

The 26-percent administrative cap has reduced government spending for universities' administrative costs by about $104 million per year and has made universities' overall indirect cost rates more uniform. The cap lowered the administrative rates of 69 of the 140 universities we surveyed and may have affected 13 other universities whose administrative rates either rose to or stayed at the 26-percent cap from fiscal year 1992 to fiscal year 1994. The cap had little or no effect on the remaining 58 universities, whose administrative rates remained below 26 percent.

Overall, the cap's greatest impacts were (1) among 11 universities whose administrative rates dropped more than 10 points to 26 percent and (2) in the New England and Middle Atlantic regions, where administrative rates for 31 of 43 universities were capped. The cap affected 37 public and 32 private universities. Columbia University, the University of Michigan, the University of Illinois at Chicago, the University of Southern California, Yeshiva University, and Boston University accounted for $35 million of the $104 million in reduced spending.

As a result of the cap, universities' overall indirect cost rates have become more uniform—in fiscal year 1995, 117 of the 140 universities surveyed had overall rates between 41 and 60 percent, as compared with 105 of the 140 universities in fiscal year 1992. In fiscal year 1995, only 19 universities have had overall indirect cost rates above 60 percent, while 4 had rates below 41 percent. In contrast, in fiscal year 1992, 29 universities had overall indirect cost rates above 60 percent, while 5 had rates below 41 percent. (See the tables in app. I for more information about the cap's effect.)

The 1991 revisions also added several items to the list of unallowable and partly allowable costs. Twenty-eight surveyed universities reported that these revisions reduced their recovery by more than $25,000 in fiscal year 1993. In particular, they noted that housing and personal living expenses for university officers and travel costs for board of trustee members had previously been allowable but could no longer be claimed. In addition, the 1991 revisions required that 99 of the largest research universities spend federal payments for use allowance or depreciation within 5 years to acquire or improve research facilities. Overall, 83 of the 99 universities reported that this provision has had little or no effect on their ability to acquire or improve facilities, while 15 universities reported only a moderate effect at most, and 1 university did not respond.

The Effect of the 1993 Revisions Is Unclear

The effect of the 1993 changes on universities' ability to recover costs is unclear because federal agencies are implementing the changes only when each university renegotiates its multiyear rate agreement. In addition, the effect of the changes is difficult to measure because they generally addressed components of cost categories. Adding student services to the administrative category, a change that can be estimated, is likely to affect only 19 of the 140 universities surveyed and reduce government spending by about $7.3 million per year.

The 1993 revision treating tuition remission for graduate students working on federally funded research as a direct cost will become effective in October 1997. This revision affects four universities—the California Institute of Technology, Columbia University, the Massachusetts Institute of Technology, and Stanford University. The Office of Naval Research had allowed these universities to spread tuition remission costs across all salary accounts of their federally and privately sponsored research instead of assigning the costs directly to each project that employed graduate students as research assistants. The four universities, which account for a significant portion of all engineering doctoral students in the United States, expressed concern that this change could substantially reduce the number of doctoral candidates. They stated that faculty members applying for federal funding will have an incentive to hire postdoctoral scientists, whose salaries are lower than the tuition and stipend payments that graduate students receive as research assistants. The universities emphasized that their mission includes education and training, as well as research, and further noted that without the financial support of a research assistantship, many graduate students may opt to obtain only a master's degree instead of a doctoral degree. Although these universities, as well as NSF, have expressed concern about the effect of this change on doctoral programs in scientific and engineering fields, federal agencies have not assessed the implications of this accounting change for such programs. While looking at the potential supply of doctoral candidates, one also needs to consider the demand for them by U.S. industry and government. We did not examine these issues; however, we note that the need for scientists and engineers with doctorates may have dropped as a result of the end of the Cold War.

In addition, many universities expressed strong concern about the effect of the 1993 revisions, stating that departmental administrative and clerical salaries should normally be treated as indirect costs. According to university administrators, including these salaries within the 26-percent administrative cap would cause many universities to cut back on

departmental support staff, thus leaving faculty to perform these tasks. Federal officials told us that this provision was designed to reduce the possibility that administrative and clerical salary costs might be inadvertently included as both direct and indirect costs for a federally funded research project. In July 1994, OMB issued a memorandum that clarified the July 1993 provision by providing six examples illustrating when administrative and clerical salaries could be charged directly to a federally funded research project.

Alternatives Proposed for Further Revising Circular A-21

Various options have been proposed for further revising Circular A-21. Most of these options have been designed to control costs for constructing and operating research facilities because facilities represent the fastest growing indirect cost category and now account for slightly more than half of all indirect costs. In particular, the following alternatives would control indirect cost growth, improve consistency in the way that universities treat costs, and/or streamline cost accounting procedures:

- Overall indirect cost rates could be capped through a system of flat rates. For example, the Congressional Budget Office, in a March 1994 report, suggested establishing for each university a flat rate of 90 percent of its current overall indirect cost rate. Similarly, NSF and HHS Inspector General officials supported simplifying Circular A-21 by establishing a flat-rate system adjusted for locality and other special circumstances. They stated that the Circular A-21 cost accounting procedures are too expensive to implement and susceptible to abuse.
- After the 1993 revisions are included, each university's negotiated administrative rate could be frozen and made a permanent rate that does not require documentation. In exchange for reducing the burden on universities to document these costs, a permanent rate would preclude further administrative rate increases for universities under the 26-percent cap. The administrative rate might be subject to renegotiation if a university's total amount of federal research funding substantially changed.
- Circular A-21 allows universities to allocate utility and library costs to federally funded research either by using a standard allocation method or by conducting cost analysis studies designed to more accurately determine actual costs. Cost analysis studies could be eliminated, and the standard method for allocating utility and library costs to federally funded research could be revised to better reflect actual usage.
- Universities can recover the acquisition cost of buildings and equipment by either (1) claiming an annual use allowance of 2 percent for buildings

and 6-2/3 percent for equipment or (2) depreciating an asset over its useful life. A more uniform approach could be developed for universities to recover their investment in facilities and equipment by revising use allowance rates to better reflect the actual useful lives of research buildings and equipment while either replacing or simplifying the use of depreciation.

- Circular A-21 could be revised in line with elements of OMB's September 1994 proposed revision to Circular A-122 (Cost Principles for Nonprofit Organizations) allowing nonprofit organizations to claim interest on debt for constructing new research facilities. In particular, the proposed revision would require an institution to (1) compute interest on the excess of depreciation and interest reimbursement over the bond principal and interest payments and (2) subtract this amount from the institution's allowable interest expense, unless it contributes at least 25 percent of an asset's cost.
- A ceiling could be established on the costs of renovations or improvements to a building that can be expensed in the year incurred as opposed to being depreciated over the building's useful life. Under Circular A-21, a university could expense a major improvements project even though the costs might be more properly depreciated over the building's useful life.
- Universities could be encouraged to use Circular A-21's simplified method to calculate indirect costs.[3] For example, HHS' rate negotiators suggested that the simplified method allow universities to use either modified total direct costs or wages and salaries as the base for calculating indirect costs. They stated that this change would not add substantially to the costs the government pays smaller universities that use the simplified method.

We did not fully analyze the effect of these suggested options. Almost all of the agency officials we interviewed and universities we surveyed opposed capping indirect cost rates—through either a system of flat rates or an overall cap—because they believe that limiting cost recovery for facilities would adversely affect universities' ability to provide the modern laboratory facilities and equipment needed to perform advanced scientific research. In addition, citing their commitment to modernize university research facilities, the Office of Science and Technology Policy and OMB recently concluded that it would be poor science policy to cap facilities rates. (See app. II for additional information about each proposed revision.)

[3]About 280 of more than 650 universities and colleges that perform federally funded research use Circular A-21's so-called "long form." The others, which receive relatively small amounts of funding, use Circular A-21's simplified method, which provides a general estimate of indirect costs.

Conclusions

The 1991 revisions to OMB Circular A-21 have reduced federal spending for administrative costs by about $104 million per year, while the 1993 revisions will further reduce these costs by at least $7 million per year. These revisions have made universities' overall indirect cost rates more uniform. Because the 26-percent cap has limited future growth of administrative costs, further initiatives to control the growth of indirect costs will primarily affect facilities costs. OMB's recent Proposed Revision to Circular A-21 would tighten controls over the growth of facilities rates without imposing a cap and improve consistency in the way universities treat costs.

One 1993 change modifying the accounting of tuition remission for graduate research assistants affects four universities that account for a significant portion of the doctoral degrees in engineering. These universities and NSF have expressed concern about the effect of this change on doctoral programs in scientific and engineering fields. However, federal agencies have not assessed the implications of this change on (1) the supply of scientists and engineers with doctorates or (2) graduate students' participation in research. While looking at the potential supply, one also needs to consider the future demand. We did not examine these issues, but we note that U.S. industry's and government's need for scientists and engineers with doctorates may have dropped as a result of the end of the Cold War.

Recommendation

Given the universities' concerns about the effects of the tuition remission change, we recommend that the National Science and Technology Council evaluate the implications of this change. This evaluation should take into account the supply and demand for scientists and engineers with doctorates; whether graduate students' participation in research is likely to be inhibited by the tuition remission change; and what, if any, alternatives can best address this issue.

Agency Comments

We discussed the information included in this report with cognizant officials at OMB, HHS, the Departments of Defense and Energy, NSF, NASA, and the National Science and Technology Council. These officials included grant policy officials, rate negotiators, research program managers, and inspector general officials. We also met with executives from the Council on Governmental Relations and the Association of American Universities, whose members include many of the universities surveyed.

Agency officials and university association executives supported the thrust of our recommendation. In addition, agency officials generally supported options to further revise Circular A-21's cost principles without imposing an overall cap on indirect cost rates. The President of the Council on Governmental Relations stated that universities would support revisions to Circular A-21 that would increase incentives for investing wisely in research capacity and quality and reduce administrative, documentation, and audit compliance costs. However, the council's president added that universities cannot support changes that would (1) further reduce their ability to recover costs for federally funded research or (2) increase their administrative costs of compliance or documentation. Agency and university officials also provided clarifying information to improve the report's technical accuracy, which we incorporated as appropriate. However, as requested, we did not obtain written comments on a draft of this report.

We conducted our review from October 1993 through January 1995 in accordance with generally accepted government auditing standards. See appendix III for details of our objectives, scope, and methodology.

Please contact me at (202) 512-3841 if you or your staff have any questions. Major contributors to this report are listed in appendix IV.

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Abbreviations

GAO	General Accounting Office
HHS	Health and Human Services
NASA	National Aeronautics and Space Administration
NIH	National Institutes of Health
NSF	National Science Foundation
NSTC	National Science and Technology Council
OMB	Office of Management and Budget
ONR	Office of Naval Research

Effect of the 26-Percent Administrative Cap

Table I.1: Effect of the Administrative Cap on Public and Private Universities, Fiscal Year 1993

Dollars in millions

Universities	Total	Affected universities	Percentage of total	Reduced outlays
Public	**87**	37	43	$41
Private	**53**	32	60	63
Total	**140**	**69**	**49**	**$104**

Table I.2: Regional Analysis of the 69 Universities Affected by the Administrative Cap, Fiscal Year 1993

Dollars in millions

Region[a]	Total universities	Universities affected by the cap	Total reduced outlays	Reduced outlays per university
New England	**16**	13	**$20.1**	$1.5
Middle Atlantic	**27**	18	**35.3**	2.0
South Atlantic	**22**	13	**10.6**	0.8
East North Central	**16**	5	**14.4**	2.9
East South Central	**6**	2	**3.0**	1.5
West North Central	**9**	1	**0.1**	0.1
West South Central	**16**	3	**3.3**	1.1
Mountain	**10**	5	**4.0**	0.8
Pacific	**18**	9	**12.7**	1.4

[a]Regions were taken from Federal Support to Universities, Colleges, and Nonprofit Institutions: Fiscal Year 1992, National Science Foundation (NSF 94-329).

Table I.3: Effect of the Administrative Cap on the 20 Universities That Received the Most Federal Funding in Fiscal Year 1992

Dollars in millions

Universities	Total	Affected universities	Reduced outlays
Public	**9**	5	$11
Private	**11**	6	22
Total	**20**	**11**	**$33**

Table I.4: Distribution of the Percentage Point Reduction in the Administrative Rates for the 69 Universities

Range of percentage point reductions	Affected universities	Percentage of reduced federal outlays in fiscal year 1993
Less than 2.0	22	7.7
2.00-3.99	12	13.3
4.00-5.99	13	21.0
6.00-7.99	5	8.6
8.00-9.99	6	23.6
Greater than 9.99	11	25.8
Total	**69**	**100.0**

Note: Because the 26-percent administrative cap for the Baylor College of Medicine, Dartmouth College, the University of Colorado Health Science Center, and the University of Oregon went into effect in 1992, administrative rates for 1991 were used to determine the effect.

Table I.5: Range of the Overall Indirect Cost Rates for the 140 Surveyed Universities in Fiscal Years 1992-95

Overall rates	Universities in fiscal year 1992	Universities in fiscal year 1993	Universities in fiscal year 1994	Universities in fiscal year 1995
36-40	5	4	6	4
41-45	32	38	36	32
46-50	32	44	40	45
51-55	27	20	25	26
56-60	15	15	11	14
61-65	16	12	13	11
66-70	7	6	8	7
71-75	4	0	0	0
76-80	1	0	0	1
81-85	0	1	1	0
86-90	1	0	0	0
Total	**140**	**140**	**140**	**140**

Alternatives for Revising OMB Circular A-21

Office of Management and Budget (OMB) Circular A-21 is designed to provide that the federal government bear its fair share of universities' costs for performing federally funded research, determined in accordance with generally accepted accounting principles. Important concerns in considering revisions to Circular A-21 are controlling the growth of indirect costs, improving consistency in the way that universities treat costs, and simplifying indirect cost accounting procedures to reduce administrative burden. Because the 26-percent cap has substantially limited any future growth in administrative costs, further initiatives to control the growth of indirect costs primarily will affect facilities costs.

Indirect Cost Rate Trends

As shown in table II.1, the overall weighted average indirect cost rate for 118 major research universities that the Department of Health and Human Services (HHS) tracks grew from 48.8 percent in fiscal year 1986 to a high of 51.1 percent in fiscal year 1992—before the administrative cap was established—and then dropped to 50.5 percent in fiscal year 1995. The rise in overall rates primarily reflected an increase in the weighted average of facilities rates from 19.4 percent to 23.7 percent—a 4.3-point increase consisting of a 3.3-point increase in use allowance and depreciation costs and a 1-point increase in operations and maintenance costs. In comparison, the weighted average of administration rates did not change from fiscal year 1986 to fiscal year 1992 and then fell 1.7 points in fiscal year 1993 as a result of the cap.

Table II.1: Weighted Average Indirect Cost Rates for 118 Major Research Universities, Fiscal Years 1986-95

	Fiscal year									
Rate category	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**
Facilities	19.4	20.0	20.3	20.9	21.7	22.1	22.4	23.6	23.7	23.7
Use allowance and depreciation	5.0	5.2	5.4	5.9	6.3	6.7	7.1	8.1	8.2	8.3
Operations and maintenance	14.4	14.8	14.9	15.0	15.4	15.4	15.3	15.5	15.5	15.4
Administration	26.4	26.0	26.1	26.5	26.6	26.5	26.4	24.7	24.6	24.8
Library	2.2	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.8	1.8
Other[a]	0.8	0.8	0.5	0.2	0.2	0.2	0.4	0.2	0.3	0.2
Total average rate	**48.8**	**48.8**	**48.9**	**49.6**	**50.5**	**50.8**	**51.1**	**50.4**	**50.4**	**50.5**

[a]Includes carry forward of costs from prior years, costs of special service centers, and other unspecified costs.

Source: HHS.

As a result of these cost shifts, the facilities category increased from 39.3 percent of total indirect costs in fiscal year 1985 to 47.2 percent in fiscal year 1994. Furthermore, if library costs were added to reflect the July 1993 revisions to Circular A-21, facilities would constitute slightly more than half of total indirect costs in fiscal year 1994.

Despite the increase in the overall weighted average of indirect cost rates for the 118 major research universities that HHS tracks, the percentage of funds that the National Institutes of Health (NIH) and the National Science Foundation (NSF) awarded for indirect costs actually declined during the past 5 fiscal years. Indirect costs constituted $1.8 billion, or 30.8 percent, of the $5.8 billion that NIH awarded to universities for research in fiscal year 1994.[1] In comparison, indirect costs constituted 31.5 percent of NIH's research funding awarded to universities in fiscal year 1990. Similarly, indirect costs constituted $363 million, or 21.9 percent, of the $1.7 billion that NSF awarded to universities for research in fiscal year 1994. Indirect costs constituted 23.9 percent of NSF's research funding to universities in fiscal year 1990. NSF officials told us that indirect costs are a low percentage of total funds awarded because the (1) grant data included a substantial number of equipment grants that do not have associated indirect costs and (2) some NSF programs limit the reimbursement of indirect costs.

Factors Affecting Indirect Cost Rates

In a May 1992 report, HHS found that most of the wide variation in indirect cost rates among research universities could be explained by an institution's (1) status as a private or public university, (2) regional location in the country, and (3) amount of federal research funding received (HHS used funding from NIH for its analysis).[2] Overall, the average indirect cost rate for public schools was 47.8 percent, and the average rate for private schools was 60.9 percent. Public and private schools in New England and the Middle Atlantic regions and private schools in the Pacific region had the highest rates of indirect costs. The indirect cost rates for private schools that received higher funding from NIH were higher than those for private schools that received lower funding from NIH. However, the same was not true for public schools.

[1]Even though the weighted average of indirect cost rates for the universities is about 50 percent, indirect costs comprise less than 33 percent of total research costs because indirect cost rates are based on modified total direct costs, rather than total direct costs.

[2]Management of Research Costs: Indirect Costs, HHS Working Group on the Costs of Research (Washington, D.C.: May 1992).

HHS' analysis did not find that differences in the indirect cost rates of urban and rural universities were statistically significant because all but three of the sampled universities were located within the Standard Metropolitan Statistical Area index that HHS used. University representatives told us that the urban density around a university is important because many private universities are located in the middle of such high-cost cities as Boston, New York, Philadelphia, and Chicago. HHS analyzed indirect cost rate data for a period before the 26-percent administrative cap was implemented.

Condition of University Research Facilities

In August 1994, the Clinton administration released a science policy paper, Science in the National Interest, that established long-term national scientific goals. Noting the importance of scientific research for competing in the global economy, the policy paper cited the need to provide the physical infrastructure that facilitates world class research, including access to cutting-edge scientific instrumentation and to world class information and communications systems. Specifically, the paper stated that the government could foster the conditions in which competitive research and quality education would be conducted at universities and medical schools by (1) creating stable policies on research funding; (2) establishing equitable policies for financing the construction, renovation, and modernization of educational and research facilities; and (3) modernizing the cost principles for academic buildings and equipment.

According to NSF's 1992 survey of universities' research facilities,[3] 34 percent of the respondents reported that they had an inadequate amount of research space. Furthermore, these respondents stated that 35.4 percent of their research space required either limited or major repair or renovation to be used effectively in 1992 and that 3.1 percent of their research space required replacement. While these percentages represented an improvement in both the amount and condition of research space in 1992 as compared with NSF's 1988 and 1990 surveys, NSF estimated that $7 billion to $8 billion would be needed to complete all needed repairs and renovations and that additional money would be needed to construct replacement facilities.

NSF also found that the total amount of universities' research space had not been increasing as much as the planned new construction, indicating that the new research space may replace obsolete or inadequate space rather than add to existing space. New construction initiated from 1986 to 1991

[3]Scientific and Engineering Research Facilities at Universities and Colleges: 1992, National Science Foundation (NSF 92-325).

was expected to add over 32 million square feet of new research space, or 26 percent of existing research space. In addition, new construction projects initiated in 1992-93 were expected to provide over 12 million square feet of new research space.

Alternatives for Further Revising Circular A-21

The primary alternatives for revising Circular A-21's cost principles are to (1) establish a system of flat rates that would set an overall indirect cost rate for each university or (2) make several smaller changes designed to improve consistency in the way that universities treat costs and streamline cost accounting procedures. Controlling the growth of indirect costs will primarily need to address costs associated with constructing and operating research facilities because these costs have been the fastest-growing indirect cost components. On February 6, 1995, OMB published in the Federal Register a Proposed Revision to Circular A-21. Of the eight alternatives we discuss, the proposed revision addressed (1) allocating utility and library costs to federally funded research, (2) developing a more uniform approach for universities to recover their investment in facilities and equipment, and (3) tightening provisions that allow universities to claim interest on debt for constructing new research facilities.

Capping Universities' Indirect Cost Rates by Establishing a System of Flat Rates

The Congressional Budget Office, in its March 1994 report entitled Reducing the Deficit: Spending and Revenue Options, suggested establishing a flat rate for each university at 90 percent of its current overall indirect cost rate. Inspector General officials at NSF and HHS also supported establishing a flat-rate system adjusted for locality and other special circumstances. These officials stated that a flat-rate system would simplify Circular A-21's cost accounting procedures because the government would not verify that costs were allowable, reasonable, and allocated to the appropriate cost category. NSF's Inspector General officials added that the current, complex system is far more expensive and susceptible to abuse than a simpler flat-rate system.

Citing its commitment to modernize university research facilities, the Clinton administration concluded in a January 1995 paper that it would be poor science policy to cap the indirect cost rate associated with research facilities. In addition, almost all of the federal agency officials interviewed and universities surveyed opposed capping universities' facilities rates by establishing either a cap similar to the 26-percent cap on administrative costs or a system of flat rates. They stated that limiting cost recovery for

facilities would adversely affect universities' ability to provide modern laboratory facilities and equipment needed to perform advanced scientific research. They added that in many cases, universities would decide not to construct new research facilities or upgrade existing ones because a cap or flat rate would prevent them from recovering higher facilities costs for federally funded research. Two universities we visited also noted that more stringent federal, state, and local regulations—for example, those that address health and environmental concerns—have added to facilities costs for performing federally funded research.

Establishing Permanent Rates for Administrative Costs

The July 1993 revision of Circular A-21 gave each university the option to claim a fixed allowance for administrative costs of either (1) 24 percent of its modified total direct costs or (2) 95 percent of its most recently negotiated administrative rate, whichever is less. Under this alternative, a university would not have to document its administrative costs. However, only seven surveyed universities—including the Johns Hopkins University and Harvard Medical School—stated that they were either very or somewhat likely to elect the fixed allowance option. For universities at the 26-percent cap, the 24-percent limit effectively would reduce their administrative rate by 8 percent. In addition, Office of Naval Research (ONR) rate negotiators said that the fixed allowance option may not reduce universities' administrative burden substantially because universities would need these cost data in the future if they decide to switch back to a negotiated administrative rate.

In fiscal year 1994, the administrative rates of 81 surveyed universities were at the 26-percent cap, while 28 additional universities had administrative rates of at least 24 percent.[4] (See table II.2.) In addition, the July 1993 revisions will place (1) student services and other miscellaneous costs and (2) certain departmental administrative and clerical salaries under the administrative cap when universities next negotiate their rates. Because these changes will further reduce federal agencies' need to verify the administrative costs of most of the major research universities, Circular A-21 could be simplified by making each university's administrative rate permanent after the 1993 revisions are included. In exchange for reducing the burden on universities to document these costs, a permanent rate would control the government's future outlays by precluding further administrative rate increases for universities under the 26-percent cap. A university's administrative rate might be subject to

[4]The number of universities with a 26-percent administrative rate increased from 79 in fiscal year 1993 to 81 in fiscal year 1994.

renegotiation if a university's modified total direct cost base substantially changed.

Table II.2: Administrative Rates of Surveyed Universities in Fiscal Year 1994

	Percent			
Administrative rate	19-21	22-23	24-25	26
Number of universities	12	19	28	81

Allocating Utility and Library Costs

Circular A-21 allows universities to allocate utility and library costs to federally funded research either by using a standard allocation method or by conducting cost analysis studies—so called "special studies"—designed to more accurately determine actual costs. Overall, 63 of the 140 surveyed universities conducted utility cost analysis studies for their most recent indirect cost rate negotiations, including 17 of 20 universities whose operations and maintenance component rates were at least 20 percent in fiscal year 1994. (In addition, 34 universities conducted space use studies.) Furthermore, 29 universities conducted library studies, including only 8 of 17 universities whose library rates were at least 3 percent in fiscal year 1994. According to HHS' rate negotiators, more universities are likely to conduct utility and library cost analysis studies in the future because (1) some states have begun to allow their universities to retain recovered facilities costs, giving them a greater incentive to maximize recovery of these costs, and (2) some universities are likely to more aggressively seek to recover real utility costs that they had not pursued in the past to offset money they cannot recover because of the 26-percent cap on administrative costs.

Agency officials and university administrators generally agreed that Circular A-21's standard method for allocating utility costs does not allow a university to adequately recover such costs incurred in performing federally funded research and, therefore, needs to be revised. In particular, the standard method does not distinguish between laboratory space, which generally has greater demands for electricity and other utilities, and other nonreimbursable space within a building. Similarly, the standard method for allocating library costs between research and instruction may not adequately reflect graduate students' use of the library in performing research and, therefore, may not allow a university to adequately recover these costs.

Agency officials and university administrators have disagreed over the reliability of both utility and library cost analysis studies. Many agency officials, including HHS' rate negotiators, believed that cost analysis studies for utilities and the library should be eliminated because (1) no uniform, acceptable methodology exists for conducting these studies and (2) federal rate negotiators often reject cost analysis studies because they disagree with assumptions and/or methodology. According to HHS' rate negotiators, cost analysis studies are a major source of friction between universities and HHS because the analysis is dependent on making expert judgments without having adequate supporting statistical data. In addition, these studies are expensive—five universities that recently renegotiated their indirect cost rates with HHS each paid engineering consultants from $100,000 to $215,000 for a utility study. A university can be reimbursed for a major share of the study's cost because it is an allowable indirect cost. About half of the surveyed universities supported developing approved methodologies for conducting utility and library cost analysis studies, while only a few universities supported eliminating them.

OMB's Proposed Revision to Circular A-21 would eliminate utility and library cost analysis studies and announced OMB's decision to develop standard benchmarks for allocating utility costs to federally funded research. This proposal would implement the November 1994 recommendation of the Subcommittee on Research of the National Science and Technology Council's (NSTC) Committee on Fundamental Science.

Revising Use Allowance Rates

Universities can recover the acquisition cost for buildings and equipment by either claiming an annual use allowance or depreciating an asset over its useful life. Circular A-21 established a use allowance rate of 2 percent per year for buildings and 6-2/3 percent per year for equipment. These rates are equivalent to establishing a 50-year useful life for buildings and a 15-year useful life for equipment. Alternatively, a university can depreciate a building and its major systems by using the straight-line accounting method and the useful life for each on the basis of engineering studies. Table II.3 shows that most universities surveyed recover the acquisition cost for both buildings and equipment through the use allowance.

Table II.3: HHS- and ONR-Cognizant Universities That Recover Costs Through Use Allowance and Depreciation

Method	HHS-cognizant universities[a]	ONR-cognizant universities[a]	Total universities
Buildings			
Use allowance	86	12	98
Depreciation	33	8	41
Equipment			
Use allowance	64	10	74
Depreciation	39	7	46
Combination[b]	16	3	19

[a]HHS negotiates rates with 119 universities surveyed, and ONR negotiates rates with 20 universities surveyed.

[b]These universities use both use allowance and depreciation, depending on the class of equipment.

University administrators and agency officials agreed that the use allowance rates do not reflect the shorter useful lives of (1) certain major building systems—such as the heating, ventilating, and air conditioning system—or (2) scientific equipment. In addition, a research building may become technologically obsolete because it was not designed with the capability to, for example, provide scientific needs for greater measuring precision or meet health requirements for ventilating air from laboratories. Similarly, rapid advances in computer technology have made much scientific equipment obsolete before 15 years.

ONR has allowed universities to switch from use allowance to depreciation more readily than HHS. For example, Cornell University converted to depreciation for both buildings and equipment, and Pennsylvania State University converted to depreciation for equipment. In each case, the amount reimbursed through the use allowance was subtracted from the original purchase price to determine the amount that remained eligible for depreciation. In contrast, HHS' approach for converting either buildings or equipment from use allowance to depreciation is to allow depreciation charges only for the remaining useful life of the asset. For example, if a university wanted to convert from use allowance to depreciation for recovering construction costs for a 25-year-old building with a useful life of 40 years, it could claim depreciation only for the last 15 years, and thereafter it would not be reimbursed for the use of the building. In this case, the university would have been reimbursed for 50 percent of the building's cost through the use allowance and 37.5 percent of the cost through depreciation—an 87.5-percent reimbursement. The university

could not claim the remaining 12.5 percent of the building's cost because of the conversion. As a result of this approach, many universities overseen by HHS have decided not to switch from the use allowance method to the depreciation method. One university that switched, New York University Medical Center, did so just before major new laboratory facilities opened in 1993. University of Virginia administrators told us that they would like to convert to depreciation, but they would not be able to recover a substantial portion of their investment in research facilities.

OMB's Proposed Revision of Circular A-21 would adopt the HHS approach as the standard method for universities to convert from use allowance to depreciation. OMB also announced its decision to examine and potentially revise the useful life schedule for equipment. This decision responds to (1) the NSTC Subcommittee on Research's recommendation that standard-level use allowances be developed on the basis of institutional characteristics to replace current depreciation and use allowance practices and (2) a suggestion by the university community that only depreciation be used to recover costs for new buildings, capital improvements, and equipment.

OMB's proposed revision would also raise the dollar-value definition of equipment from $500 to $5,000. Overall, 108 of the universities surveyed supported this change, which would (1) reduce the burden of maintaining inventory records on a substantial amount of equipment and (2) allow a university to write off equipment costing less than $5,000 in a shorter period than the 15 years that the use allowance method permits.

Proposed Revision to OMB Circular A-122 for New Construction

In September 1994, OMB published a proposed revision to Circular A-122 that specifies cost principles for nonprofit organizations that receive federal funding. The proposed revision would allow these organizations to claim interest on debt in certain circumstances. In particular, Circular A-122 would require that nonprofit organizations (1) compute interest on the excess of the depreciation and interest reimbursement over the bond principal and interest payments and (2) treat the computed interest as a reduction in the interest expense to be reimbursed by the government, unless the nonprofit organization makes an initial equity contribution of 25 percent or more to purchase the asset. OMB's Proposed Revision to Circular A-21 would add a similar provision limiting possible excess interest payments.

HHS officials supported requiring a minimum downpayment for constructing a research facility. They cited an instance in which a university raised money for a new $40-million research facility through a building campaign, yet borrowed a sum equal to almost the full cost of the facility. The HHS officials noted that a university could make periodic interest payments to bondholders over the life of a 30-year bond and a principal payment after 30 years. However, during the same period, the government would reimburse the university through its indirect cost rate for the interest payments and depreciation associated with space used to perform federally funded research. If the university invested the depreciation payments made over the 30-year period, it might earn substantially more than the principal owed to bondholders. HHS' Office of Inspector General currently is examining financing practices of five universities for constructing new research facilities.

In addition, the proposed Circular A-122 revision would require that a nonprofit organization conduct an assessment that demonstrates the need for an asset in the conduct of federally sponsored activities if the government's reimbursement is expected to equal or exceed 51 percent of an asset's cost. Alternatively, the university community's November 1994 working paper suggested using a peer-review process to assess the reasonableness of the costs of construction and renovation that exceed certain benchmarks. The working paper suggested that the peer-review process would be used only for large-scale projects where federal funding plays a major role, citing as an example projects costing at least $25 million for which the government would contribute at least 51 percent of the cost. Both suggestions respond to a concern that universities can construct facilities—the cost of which is to be borne in large part by the government—without any opportunity for the government to assess the need or costs. Some agency officials noted, however, that a peer-review process could add substantial administrative burdens and financial costs to the indirect cost recovery process. OMB's proposed revision announced the agency's decision to develop benchmarks for construction and renovation costs for research facilities for use in charging facility costs to sponsored agreements.

Capitalizing Renovation Costs

HHS officials suggested establishing a ceiling on the costs of renovations or improvements that can be treated as expenses in the year incurred as opposed to being capitalized over the building's useful life. Because Circular A-21 currently does not set a ceiling, a university might decide to expense a major improvements project even though it might more

properly be capitalized over the building's useful life. A $50,000 ceiling was included in OMB's notice of proposed revisions to Circular A-21 published in the Federal Register in December 1992. However, it was deleted from the final revisions published in July 1993, pending further study. Some agency officials suggested raising the ceiling to $100,000 to allow universities to expense more small improvements projects.

Encouraging Universities to Use the Simplified Method

Encouraging universities to switch from negotiating indirect cost rates to using the simplified method would reduce the administrative burden for both universities and federal agencies. In return for reducing the burden in accounting for indirect costs, the simplified method would limit the amount of indirect costs that a university could recover. HHS' rate negotiators suggested that universities be allowed to use modified total direct costs as their base for calculating indirect costs under the simplified method, stating that this change would not add substantially to the costs the government pays smaller universities that use the simplified method. Currently, only salaries and wages constitute the base.

A second option would enable simplified method users to recover more of their indirect costs, giving some universities that currently negotiate an indirect cost rate a greater incentive to shift to the simplified method. Although this option would also increase federal outlays to more than 400 universities and colleges that currently use the simplified method, the outlays account for only a small percentage of the total federal funding for research at universities and colleges. The 140 universities in our survey received 88 percent of the federal funds obligated to universities and colleges for research in fiscal year 1992. All of these universities as well as about 140 additional universities use negotiated indirect cost rates.

Objectives, Scope, and Methodology

The Conference Report to the Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1994, directed us to examine the federal government's principles, contained in OMB Circular A-21, for allowing universities to recover indirect costs associated with the performance of federally funded research. Specifically, we were asked to assess the effect of (1) October 1991 and (2) July 1993 revisions to Circular A-21. We also were asked to identify alternatives for further revising Circular A-21 to control the growth of indirect costs, improve consistency in the way that universities treat costs, and/or streamline indirect cost accounting procedures. This review follows up on our August 1992 report on universities' indirect costs.[1]

To assess the effect of the 1991 and 1993 revisions to Circular A-21, we sent a questionnaire to 140 major research universities that received $9.5 billion, or 88 percent, of the federal funds obligated to universities and colleges for research in fiscal year 1992. All 140 universities responded to our questionnaire. HHS is the cognizant agency for 119 of the 140 surveyed universities, ONR is the cognizant agency for 20 universities, and the Department of Energy is the cognizant agency for 1 university.

Specifically, we asked each surveyed university to (1) verify indirect cost rate data that its cognizant federal agency had provided for fiscal years 1992, 1993, and 1994 and (2) provide its modified total direct costs for fiscal years 1992 and 1993. If the university and cognizant agency disagreed, we asked the agency to reverify its rate information. Rate discrepancies were resolved in all but two universities—the University of Michigan and Utah State University—for which we used the universities' rates. We analyzed these data using the same factors that our August 1992 report used—whether the institution was a public or private university, where its geographical region was, and whether the institution was among the top 20 recipients of federal research funding. These factors were similar to the three factors that HHS' May 1992 study, Management of Research Costs: Indirect Costs, had found were statistically significant. We used NSF's report, Federal Support to Universities, Colleges, and Nonprofit Institutions: Fiscal Year 1992, to identify the geographical regions and the top 20 recipients of federal research funding.

To identify alternatives for further revising Circular A-21, we interviewed cognizant officials at OMB; HHS, including NIH; the Department of Defense,

[1]Federal Research: System for Reimbursing Universities' Indirect Costs Should Be Reevaluated (GAO/RCED-92-203, Aug. 26, 1992). See the list of related GAO products at the end of this report.

including ONR; NSF; the Department of Energy; and the National Aeronautics and Space Administration. These officials were responsible for negotiating indirect cost rates, funding university research, and/or verifying the allowability of costs. In addition, we (1) obtained the views of the surveyed universities on several indirect cost issues through our questionnaire, (2) visited Columbia University and New York University Medical Center to interview senior administrators, and (3) met with officials of the Council on Governmental Relations and the Association of American Universities, which represent research universities.

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Related GAO Products

University Research: U.S. Reimbursement of Tuition Costs for University Employee Family Members (GAO/NSIAD-95-19, Feb. 15, 1995).

Department of Transportation: University Research Activities Need Greater Oversight (GAO/RCED-94-175, May 13, 1994).

Energy Management: Controls Over the Livermore Laboratory's Indirect Costs Are Inadequate (GAO/RCED-94-34, Nov. 16, 1993).

Federal Research: Minor Changes Would Further Improve New NSF Indirect Cost Guidance (GAO/RCED-93-140, June 3, 1993).

Federal Research: System for Reimbursing Universities' Indirect Costs Should Be Reevaluated (GAO/RCED-92-203, Aug. 26, 1992).

Federally Sponsored Research: Indirect Costs Charged by Selected Universities (GAO/T-RCED-92-20, Jan. 29, 1992).

Federally Sponsored Research: Indirect Costs Charged by Stanford University (GAO/T-RCED-91-18, Mar. 13, 1991).

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