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FINANCES OF RESEARCH UNIVERSITIES

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FINANCES OF RESEARCH UNIVERSITIES

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The Council on Governmental Relations (COGR) is an association of leading universities and research institutions. One of COGR's important activities is assisting institutions to develop policies and effective practices that reflect the mutual interests of the research community (universities and research institutions, their representative associations, federal agencies, and other sponsoring entities). COGR published a prior version of "Finances of Research Universities" in November, 2003. This updated version builds upon the 2003 version, while providing comparative analysis, when appropriate.

I. Introduction

It is the purpose of this paper to present a current snapshot of the primary revenue streams and expense categories at research universities. In this context, a research university is described as an institution that is committed jointly to instruction, research, and public service. Research universities consider such activities to be inextricably intertwined, and they have in place the necessary infrastructure to encourage and support their faculty and students in the pursuit and conduct of research.

When referring to "research universities" throughout the paper, the reader should note that the cohort of institutions that comprise these institutions is not a discrete or exclusive group. There are several analyses in this paper where a specific cohort of institutions is identified. However, except in those analyses, all references, in general, should be interpreted to capture universities that consider research a significant part of their mission.

The paper explains the restricted and unrestricted sources of university funds, and the typical uses of such funds. Tables and charts illustrate several structural differences between public and private research universities. The financing of sponsored research also is explained. Data regarding the extent to which universities cover their costs for conducting federally funded research is presented, as well as some reasons for under-recovery of legitimate expenditures and the extent of the significant university contribution to research. The paper closes with comments on cost increases associated with doing research, the reduction in available external resources, and the resulting difficulties for sustaining the academic research enterprise.

II. Mission of Research Universities

Research universities have in common the three-fold mission of instruction, research and public service. The Land-Grant designation, a mission shared by some public universities, is usually included under the mission of public service. A fourth mission that many universities have explicitly embraced in recent years is economic development. Finally, for those institutions that own a hospital and/or clinical practice, providing medical services constitutes a fifth mission.

The mission of a university influences its financial structure. For example, a university that owns a hospital may be dominated financially and physically by the hospital, with the value of plant assets and operating revenues demonstrating the heavy weighting of the hospital. On the other hand, even without a hospital, universities often have balance sheets that reflect significant investments in capital assets for instruction and research. As only a small number of universities own a hospital, we have eliminated the effect of university-owned hospitals from all analyses completed in this paper.

A second major factor that causes significant financial differences is the public versus private status of a research university. Historically, the primary revenue source for public universities has been the state appropriation. In recent times, however, some public universities have experienced a severe decline in state funding and are exhibiting greater financial similarities to private universities. For such public universities, this is evidenced by the decreasing proportion of their operating budgets that is funded by the state. Furthermore, for both publics and privates, efforts to minimize tuition increases has put pressure on all other revenue sources, resulting in an increasing dependence on private gifts and distributions from the endowment.

III. The Operating Statement

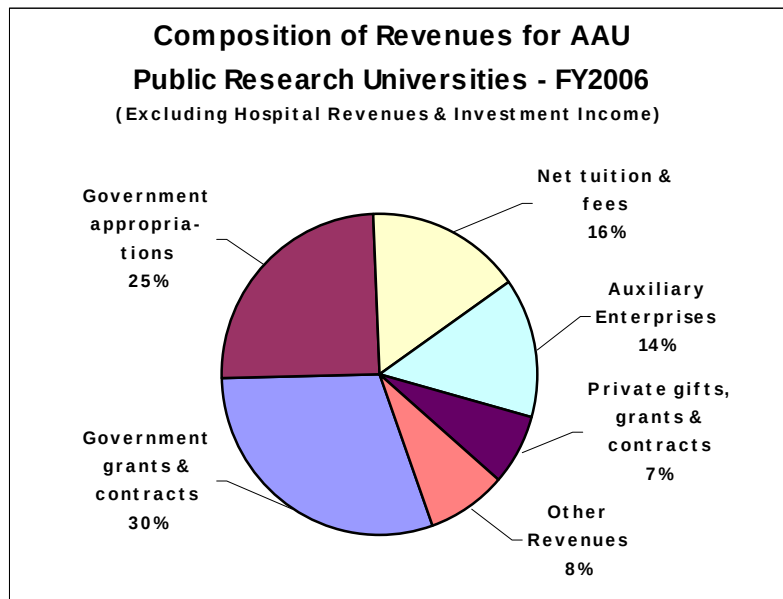
Sources of Revenues

Sources of revenues for both public and private research universities can be divided into unrestricted and restricted resources. As the term implies, unrestricted resources can be used for the primary missions of teaching, research, and public service without any restrictions on use. The primary unrestricted sources for operations are state appropriations (public institutions) and tuition (both publics and privates). Restricted resources are those that are restricted in use by third parties such as donors and research sponsors. The restrictions are typically related to the use of the resources for a particular organizational unit (e.g., Physics department), to a particular purpose (e.g., Music scholarships), or to a specific activity (e.g., cancer research, lecture series in foreign affairs, etc.).

The following two charts show the composition of revenue sources (excluding hospital revenues and investment income) for public and private research universities, respectively. The data is for research-intensive universities that are members of the

Association of American Universities (AAU). There are sixty-two AAU member institutions, and the data is based on thirty-one public and twenty-six private institutions. The source of the data is the Fiscal Year 2006 Integrated Postsecondary Education Data System (IPEDS), a survey provided annually to the Department of Education.

Public Research Universities, FY2006 - Composition of Revenues (AAU Institutions)



Private Research Universities, FY2006 - Composition of Revenues (AAU Institutions)

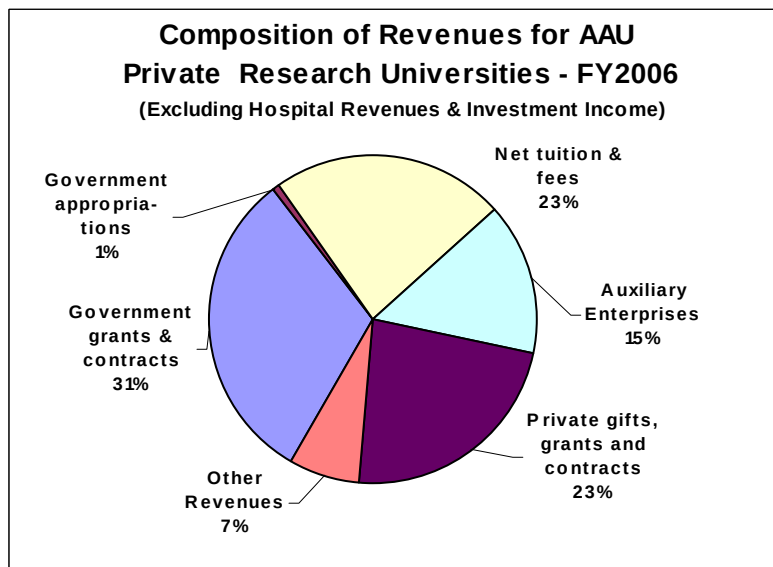


Table Comparisons: Composition of Revenue

The composition of revenues shows some striking similarities between public and private AAU research universities. Most notably, Government (primarily Federal research) grants and contracts is the number one revenue source for each. Below, the top three revenue sources are shown for AAU public and private research universities:

Publics - FY2006 Composition of Revenue	Percent
Government grants and contracts	30%
Government appropriations	25%
Net tuition and fees	16%

Privates - FY2006 Composition of Revenue	Percent
Government grants and contracts	31%
Private gifts, grants and contracts	23%
Net tuition and fees	23%

Private gifts, grants and contracts (23%) take the place of Government (State) appropriations as one of the three largest sources for AAU private research institutions. Private gifts, grants and contracts are almost always restricted for use according to donor requirements and are not available for general operations. It should be noted that gifts for both public and private universities also include gifts for capital and endowments and that these gifts are not available for programmatic and operational expenses during the year reported. Instead, these gifts typically increase the endowment principal or are used to construct new facilities.

Historically, private universities have relied more heavily on tuition and fees than have public universities; the publics were able to rely on state appropriation support. Furthermore, private institutions have had the flexibility to increase tuition as expenditures or programmatic investments increased, or other revenue sources fell short. Note, in this paper tuition and fees are reported as “net tuition and fees” (i.e., tuition and fees, net of financial aid).

On the other hand, many public universities are constrained in their ability to set tuition by state statutes, or the current legislative climate. The public university-state relationship traditionally conveyed an implicit expectation of support in the form of state appropriations. In recent years, however, public universities have experienced a trend

toward lower levels of state support, resulting in an increased dependence on revenues from other sources, such as tuition and fees, and government grants and contracts.

The important funding role played by state government creates a unique set of policy discussions applicable to public universities. A comparison showing the change in revenue composition from FY2001 (as shown in the original COGR paper from 2003) to FY2006 for AAU public research universities is enlightening:

Publics – FY2001 vs. FY2006 Composition of Revenue		
	2001 *	2006
Government grants and contracts	22%	30%
Government appropriations	31%	25%
Net tuition and fees	13%	16%

* “Finances of Research Universities” - 2003 by Council on Governmental Relations.
Data based on FY2001 Integrated Postsecondary Education Data System (IPEDS).

Through 2001, Government (State) appropriations had constituted the largest source of revenues to AAU public research universities (31%). By 2006, however, Government (State) appropriations had decreased as a percentage of total revenues (25%) and had been supplanted as the primary revenue source by Government (primarily Federal research) grants and contracts, which grew from 22% to 30%. Reliance on tuition and fees also increased from 13% to 16%.

Other Revenue Sources

Auxiliary Enterprises and Other Revenues are the two remaining sources of revenue. These sources have not been analyzed for the purposes of this paper. However, a short description of each is appropriate.

Auxiliary Enterprises are generally self-supporting activities, whose services are provided primarily to individuals in the university community such as students, faculty and staff, but which may also offer incidental services to the public. Examples include university housing, intercollegiate athletics, bookstores, and dining services. These activities generally receive no financial support from other sources, unless they are deemed a critical aspect of the academic mission. Other Revenues includes other sources of revenue not reported in the other categories.

Investment and Endowment Income

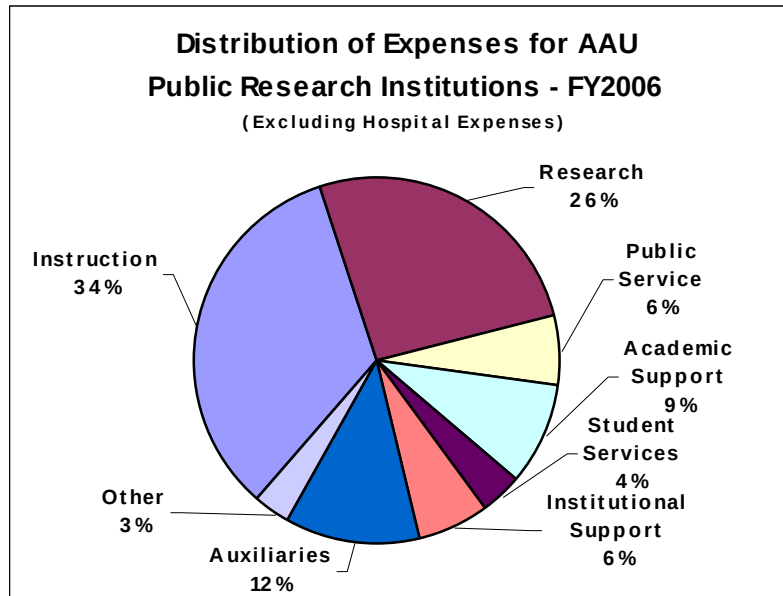
One revenue item that is not included in the above analysis is investment income. It is excluded primarily because investment income does not directly affect the operating budget. As required by Generally Accepted Accounting Principles (GAAP), investment income consists of realized and unrealized gains during the year, in addition to actual yield. Therefore, it fluctuates significantly from year to year. Most of the investment income accrues to the endowment, and enters the operating budget through the distribution from the endowment. However, endowment distributions are considered internal transfers and are not prescribed under GAAP to be displayed as a separate source of revenue.

Endowment distributions are then expended for the restricted and designated purposes for which they are established. When used for current year activities, endowment distributions are based on formulae designed to ensure consistent streams of support for programs extending many years into the future. This includes funding of instructional programs, scholarships and fellowships, operations and maintenance of buildings, and other activities supporting the mission of the institution. From a reporting standpoint, expenditures on these activities are included in the total expenses reported in the IPEDS survey, and subsequently are captured in the various program categories as described in the next section; Use of Funds and Expenditures.

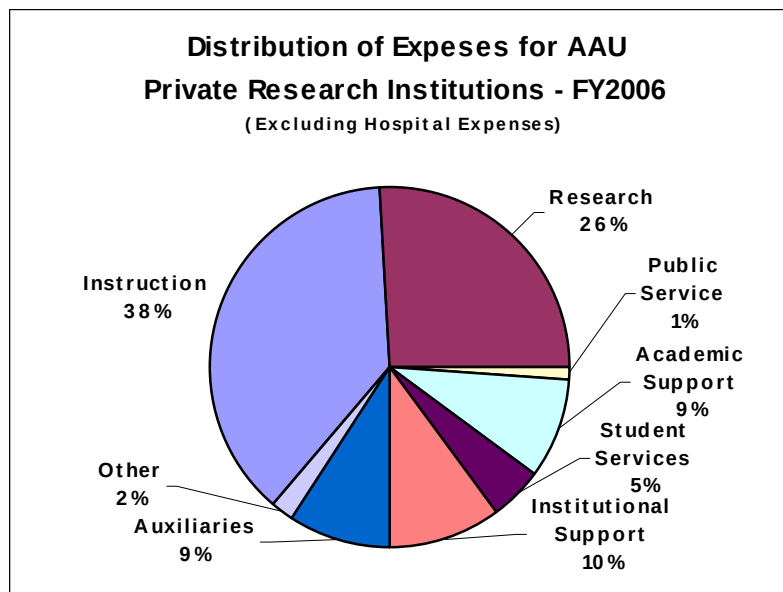
Uses of Funds and Expenditures

The following two charts show the expenditure patterns, by program category, of the AAU public and private research universities defined in the previous section (Sources of Revenue). Once again, the source of the data is the Fiscal Year 2006 Integrated Postsecondary Education Data System (IPEDS):

Public Research Institutions, FY2006 - Distribution of Expenses (AAU Institutions):



Private Research Institutions, FY2006 - Distribution of Expenses (AAU Institutions):



The expenditure patterns highlight many similarities. In the case of both AAU public and private research universities, the majority of expenditures cover the primary missions of Instruction, Research, and Public Service (66% and 65%, respectively). Publics have a larger proportion of public service expenditures, primarily due to the land grant missions at a number of these institutions.

Academic Support (including libraries and information technology) and Student Services (including career planning and placement, counseling, registrar, admissions, and financial aid offices), constitute 13% of expenditures for publics and 14% for privates.

Expenditures for Auxiliary Enterprises amount to 12% of expenditures for publics and 9% for privates. These expenditures often are directly tied to the revenues generated, since these operations are expected to be self-supporting.

Institutional Support, 6% for publics and 10% for privates, includes operational costs including administrative and fund raising costs. One can best understand the difference in Institutional Support by considering that public universities have a number of administrative services including payroll and purchasing disbursements, cash management, and debt management that may be provided by the state or by system offices. Where state governments provide these functions, the corresponding expenses would not be reflected in the university's financial statements.

Finally, the presentation of depreciation, interest, and operations and maintenance of buildings varies across institutions. Comparisons between public and private institutions are not addressed in this paper.

IV. The Balance Sheet

A review of the balance sheets of research universities shows that plant, property and equipment (PPE) typically constitutes the largest asset group. This category includes buildings, infrastructure (e.g., sewers, campus lighting, etc), equipment, and computer systems (hardware and software). In accordance with GAAP, the value shown on the balance sheet is the historical acquisition cost, after depreciation. Thus, a newer plant is reflected on the balance sheet at a higher undepreciated value. For private universities, a newer plant is typically accompanied by larger liabilities, because the new capital is being financed using debt instruments. For public universities, capital construction and acquisition are often state-funded, but the asset may be shown on the balance sheet of the university itself, or of the state only. The corresponding liability will not be disclosed on the university's balance sheet if debt service payments are made by the state from general tax revenues.

Changes in technology and the ongoing need to upgrade equipment, facilities and infrastructure have a significant impact on the balance sheet. In recent years, many universities have invested heavily in administrative information systems such as Enterprise Resource Planning (ERP) systems and web-based technologies. In addition,

public and private institutions have intensified the pace of capital investment in new research facilities. These facilities are financed with a combination of debt, private philanthropy, and in the case of public universities, perhaps state support.

According to Moody's Private and Public College and University 2007 Medians, the portion of facilities financed with debt is significant and growing. For public universities, this is signified by a 54% increase (using the median as the comparison point) in the total direct debt (i.e., debt issued by the institution under its credit) over the five-year period 2002-2006 for the largest public research universities with Aaa and Aa1 credit ratings, and 38% and 79% increases for those with a Aa2 and Aa3 rating, respectively. This compares with a 31% and 27% increases in total direct debt at large private institutions with Aaa and Aa ratings, respectively. Note, Moody's reporting categories vary between publics and privates, as this is reflected in the different cohorts and credit ratings shown above.

After PPE, the second largest asset group for public and private universities is often their endowments. However, most private institutions have significantly larger endowments than public institutions, and the balance sheets reflect those differences. The 2006 Endowment Study prepared by the National Association of College and University Business Officers (NACUBO) reported that public institutions account for \$95 billion (or 28-percent) of total endowment holdings, while private institutions account for \$245 billion (or 72-percent). This ratio is in-line with the ratio from the 2002 Endowment Study prepared by NACUBO, where the ratio was 27-percent and 73-percent for public and private institutions, respectively.

Balance sheet ratios reported by Moody's Investor Services for FY 2006, indicate that better endowed private institutions have significantly greater total financial resources per-student, expendable financial resources-to-operations, and expendable financial resources-to-total net assets. This often translates into higher credit ratings and a lower cost of capital for private universities, compared to public universities. However, the median total financial resources per-student (using the median as the comparison point) for large Aaa and Aa rated private institutions has seen little change over the past five years, while the median for similarly rated public institutions has increased by 46%. This growth could reflect an increased focus on private fundraising at public institutions, and subsequent growth in their endowments.

V. Reimbursement of Costs for Sponsored Research

Sponsors, including the Federal government, foundations, and corporations, provide funding for research, usually through a competitive process. Normally, funding is in the form of grants and is considered to be financial assistance (i.e., funding does not cover the full cost of research). Included in the awards are funds for the direct costs of research, as well as indirect costs (officially termed Facilities and Administrative costs, or F&A costs, in the Office of Management and Budget (OMB) Circular A-21).

While direct costs of research can be identified readily with a particular sponsored project (e.g., chemicals for a specific experiment, the salary of a laboratory technician who works on a specific sponsored project, etc.), F&A costs (e.g., building operating costs, utilities, the salary of a research compliance officer, etc.) are not easily identified to a specific project and are incurred to support all the missions of the university. Accordingly, F&A costs are allocated to each mission, including research, as specified in OMB Circular A-21.

The F&A rate is the mechanism by which sponsors reimburse universities for facilities and administrative expenses in support of research. The Federal government negotiates rates with individual universities, and the negotiated rates normally are set for a period of two to four years.

F&A rates are defined as the ratio of F&A costs compared to modified total direct costs, or MTDC. In other words, F&A costs can be applied only to select direct costs such as salaries, fringe benefits, and supplies. Equipment, tuition, and other MTDC “exclusions” are not eligible for F&A recovery. As an example, an institution with a negotiated F&A rate of 50% would recover \$100 of F&A for every \$200 expended on salaries (note, a common misunderstanding is that a 50% rate represents that for every \$100 of F&A, \$100 of salaries are expended; this is not the case). Using an institution with a 50% rate, the ratio of F&A costs to total costs would not exceed 33%. In fact, when MTDC exclusions are considered, the ratio of F&A costs to total costs (for an institution with 50% rate) normally will be in the 20 to 25% range.

F&A recovery is an important source of funds for universities, and at times is the subject of confusion and controversy. F&A “caps” have been proposed and implemented, including a 26-percent administrative cap (i.e., the “A” component of the F&A) imposed in 1991, and a recent F&A cap applicable to basic research funded by the Department of Defense, DOD (as specified in the FY2008 DOD Appropriations bill, and which will be reconsidered in subsequent DOD Appropriations bills).

Universities recognize the importance of the university contribution (see the following section) to the research enterprise, however, F&A caps are widely understood to be arbitrary. F&A costs incurred by universities are real costs of doing research, and caps result in under-recovery of reimbursement, which then forces universities to cover the unreimbursed costs through other unrestricted revenue sources. Furthermore, only universities are subject to the 26-percent administrative cap. Private industry, not-for-profit research institutions, and other entities are not affected by this restriction, and in the case of private industry, a profit factor is allowed as an additional reimbursement item.

VI. University Contribution to the Research Enterprise

Broad Trends

Universities contribute to the direct costs and the indirect (i.e., F&A) costs of federal research. The National Science Foundation's (NSF) annual survey on Research and Development (R&D) Expenditures at Universities and Colleges shows the significant and increasing financial contributions made by all colleges and universities, in total, to the research enterprise over the past sixty years. The university contribution is shown as "Institutional Funds".

R&D Expenditures (in millions), current dollars and not adjusted for inflation:

Fiscal Year	All R&D Expend.	Federal Govt	State and Local Govt	Industry	Institutional Funds	All Other Sources
1956	372	213	53	29	43	34
1966	1,715	1,261	156	42	148	108
1976	3,729	2,512	364	123	446	285
1986	10,928	6,712	915	700	1,869	732
1996	23,048	13,841	1,811	1,605	4,171	1,619
2006	47,760	30,033	3,016	2,428	9,062	3,221

R&D Expenditures, as a percentage of All R&D Expenditures:

Fiscal Year	All R&D Expend.	Federal Govt	State and Local Govt	Industry	Institutional Funds	All Other Sources
1956	100%	57.3%	14.2%	7.8%	11.6%	9.1%
1966	100%	73.5%	9.1%	2.4%	8.6%	6.3%
1976	100%	67.4%	9.8%	3.3%	12.0%	7.6%
1986	100%	61.4%	8.4%	6.4%	17.1%	6.7%
1996	100%	60.1%	7.9%	7.0%	18.1%	7.0%
2006	100%	62.9%	6.3%	5.1%	19.0%	6.7%

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Universities and Colleges

Actual R&D expenditures are shown as current dollars, and do not account for inflation. However, when shown as a percentage, the important role of Institutional Funds is clear. Over the period from 1976 to 2006, the share of R&D expenditures in this category has grown faster than any other category. According to the 2006 NSF Survey, Institutional Funds account for 19.0% of all R&D expenditures, compared to 12.0% of all R&D expenditures in 1976. To put this in another context, the increased share from 12.0% to 19.0% represents a growth factor of 58%. Industry experienced a similar growth factor (54%), while all other sectors, including the Federal government (-6%), declined.

The Federal government share continues to be the predominant source of total R&D expenditures. While over the same thirty year period the Federal government share has dropped (from 67.4% to 62.9%), over the 1996 to 2006 period, there was a significant increase. This can be attributed to the doubling of the National Institutes of Health (NIH) budget from 1998 through 2003. Since 2003, however, the NIH budget has flattened. And despite prospects of increases in the research budget for the National Science Foundation, and several other federal agencies, the future trend for the Federal government share is uncertain.

Institutional Funds, according to the NSF Survey Instructions, are defined as the institutional contribution related to direct and indirect (F&A) costs associated with research. Examples include general-purpose state/local government appropriations applicable to research, gifts, mandatory and voluntary cost sharing, and unreimbursed indirect (F&A) costs.

The magnitude of the Institutional Funds contributed is remarkable, and in FY2006 was greater than state and local government, industry, and all other sources, combined. As indicated in the first table, the contribution exceeded \$9 billion in FY2006. Also note, Institutional Funds do not include gifts made by private donors to fund research buildings, endowed chairs, and other activities specific to the research mission of the institution. According to NSF Survey Instructions, these funds would be captured under the “All Other Sources” column.

University Subsidy

The NSF Survey includes a section for an institution to document the Institutional Funds contributed to research as (1) Institutionally financed organized research, and (2) Unreimbursed indirect costs (i.e., F&A). The survey instructions also state that these two amounts will not be published, and that only the grand total for Institutional Funds will be used. Therefore, it is not possible to determine the exact split between these two areas.

For the FY2006 data (i.e., over \$9 billion of Institutional Funds), only estimates can be made as to what amount represents unreimbursed F&A costs (i.e., the university subsidy). One basis for an estimate comes from the 2000 RAND Study (commissioned by the Federal Office of Science and Technology Policy, OSTP), Paying for University Research Facilities and Administration. Using data from the 1997 NSF Survey on R&D Expenditures, the RAND study concluded: “*Because universities report a total level of support for research from their own funds of about \$5 billion, it appears that these facilities and administration costs represent about one-fifth of the university funds devoted to research (page xii).*”

Using “one-fifth” as the benchmark, it is reasonable to estimate that over \$1.8 billion (using FY2006 NSF data) represents the university subsidy for F&A costs. Furthermore, the RAND study did not account for the effect of the 26-percent administrative cap. COGR conducts regular surveys of F&A rates, and the 2005-2006 Survey of F&A Rates

showed that more than 90 percent of all research institutions can support a rate above the 26-percent cap. If the cap did not exist, the COGR survey suggests that the average administrative component would be over 28-percent. Subsequently, COGR's internal analysis maintains that the inability to recover the actual administrative costs incurred adds over \$500 million to the university subsidy for F&A costs.

The estimated total subsidy using the above analysis (i.e., \$1.8 billion plus \$500 million) is applicable to all research programs, federal and non-federal. While the breakdown applicable to federal and non-federal has not been estimated, the majority of the subsidy can be attributed to federal programs. In total, a reasonable estimate is that the university subsidy of F&A costs applicable to all federal and non-federal research programs combined exceeds \$2.3 billion.

Factors Contributing to the Subsidy

1. **Agency and/or Statutory Restrictions.** A number of federal agencies do not pay the negotiated F&A rate, but establish a reduced rate, either for certain programs or for the entire agency portfolio (e.g., NIH career development awards, Department of Education training grants). Other agencies restrict F&A recovery through statutory requirements (e.g., USDA CSREES awards, DOD basic research awards as specified in the FY08 DOD Appropriations Bill). And while agencies no longer can use F&A waivers as an award eligibility criterion, there are situations where institutions still waive F&A reimbursement.
2. **Cost Sharing.** Institutions provide significant amounts of cost sharing in the form of salaries, equipment, graduate student tuition, and other important items. In addition, when individuals are compensated above statutory salary limitations (e.g., the NIH salary limitation), the amount above the limitation is non-reimbursable, and is considered cost sharing. The mechanics of calculating the F&A rate are such that cost sharing results in an increase in the research base, a reduction in the F&A rate, while providing no method for F&A recovery on the cost shared amounts.
3. **Research Compliance Costs and the 26-percent Administrative Cap.** The 26-percent cap was imposed in 1991, based on data representing average administrative costs at universities prior to 1991. Since then, new compliance requirements have resulted in significant increases in the administrative costs of conducting federal research. Animal care, lab and hazardous waste safety, human subject protection, electronic research administration, effort reporting, data security, conflict of interest, research misconduct, export controls, and the education programs to ensure a campus-wide knowledge base, represent some of the new and/or expensive compliance requirements. Since almost every research institution can support a rate above the 26-percent cap, and because most research compliance costs fall under the administrative category, universities have no choice but to absorb (i.e., cost share) a significant portion of these research compliance costs.

4. Other F&A Restrictions. Other limitations are incorporated into the OMB Circular A-21 methodology. For example, library expenses are normally required to be allocated on an antiquated full-time equivalent (FTE) student to faculty ratio, which results in an under-allocation to research. Utility expenses, which prior to Circular A-21 changes in 1996 could be determined through a “utility study”, are now restricted to a 1.3-percent allowance. In fact, only sixty-six institutions that before 1996 conducted these types of studies are entitled to the allowance; all other institutions are prohibited from doing a study, or receiving the 1.3-percent factor.

Future of the Partnership

The Federal Government-University research partnership is predicated on both parties sharing in the costs of research. While the Federal government role predominates, the NSF Survey on Research and Development (R&D) Expenditures at Universities and Colleges demonstrates the significant contribution made by universities.

Universities willingly accept their role and responsibility to make significant contributions to the research partnership. This is evident in a number of standard practices found at research universities:

1. Senior management and Boards of Trustees understand that an up-front financial commitment must be made by the institution to build state-of-the-art research laboratories and facilities. The commitment is made knowing that future F&A recovery will not fully cover the cost of operating the new buildings.
2. Faculty and scientists who do the actual research contribute a significant amount of time to their research endeavors, a portion of which is never charged to the Federal government. This results in a voluntary contribution of research effort, fully paid for by the institution.
3. University funded research centers and institutes, availability of start-up funds for new researchers, and internal-competitive awards made from institutional funds has been, and will continue to be, a significant component of the university research mission.
4. Cost Sharing commitments, in the form of salaries, equipment, graduate student tuition, and other important items, will continue to be contributed by institutions.
5. Research administrators diligently work to ensure institutional compliance with an increasingly complex regulatory environment, without the benefit of additional F&A recovery (as restricted by the 26-percent administrative cap) to fund these compliance requirements.

While the appropriate university contribution to the research enterprise is a fluid number, there is cause for concern when the university share continues to grow in relation to the

Federal share. Without any recognition by policy makers of this reality, the risk is that additional financial burdens will move universities closer to a “tipping point”. The result could be decline in the quality of research infrastructure and compliance initiatives, as well as a gradual degradation of research laboratories and facilities.

VII. University Perspectives on the Funding of Research

At research universities, faculty perform scholarly research in their field. In the OMB Circular A-21 vernacular, research not funded by a sponsor is considered integral to the “Instruction and Departmental Research” function. This is distinct from the “Organized Research” function, which is “separately budgeted and accounted for” and funded primarily by the Federal government, but also by other sponsors as well as the university itself.

On most university campuses, federal research is conducted largely in the science, technology, and medical school departments. Even though the amount of federally funded research is significant, it does not involve a majority of faculty, students and academic programs. Thus, university administrators are faced with managing the tension between the departments that receive federal funding and those that do not, as well as managing the faculty who participate in federal research and those who perform non-sponsored research and/or teach.

It is challenging to explain the subsidies that universities provide for federal research to those not engaged in federal research. These subsidies are perceived by many as a manifestation of the choice to allocate university resources to federal research, rather than to teaching and areas of scholarly research typically not funded by the Federal government.

In particular, the research community is aware that universities receive less in F&A reimbursements than private contractors (who are on “cost-plus” arrangements), or even federal colleagues who perform intramural research. In the aforementioned 2000 RAND Study, the authors referred to a separate study that showed the fraction of total research costs classified as indirect was 31% for universities, 33% for federal laboratories, and 36% for industrial laboratories (*see pages 28-29 of the RAND study*).

Such a finding supports the perception that universities are not treated equitably by the Federal government in how the costs of research are shared, in spite of the fact that there is general agreement that federally funded research performed by universities is vitally important to reaffirm the United States’ world leadership in science and technology, and to sustain American competitiveness.

VIII. Conclusion: The Current Financial Situation

In Rising Above the Gathering Storm (The National Academies Press, October 2005), a report requested by Congress, The National Academies stated that a comprehensive and coordinated federal effort is urgently needed to bolster U.S. competitiveness. The four primary recommendations in the report included: 1) Increase America's talent pool by vastly improving K-12 mathematics and science education; 2) Sustain and strengthen the nation's commitment to long-term basic research; 3) Develop, recruit, and retain top students, scientists, and engineers from both the U.S. and abroad; and 4) Ensure that the United States is the premier place in the world for innovation.

Research Universities will play a central role in implementing these recommendations. However, the analysis of research finances presented in the COGR paper suggests that financial uncertainties of research universities could create challenges in achieving the recommendations made by the National Academies.

The economic downturn and the bursting of the high-tech bubble in early 2000 created significant financial imbalances in higher education. For public universities, the single largest impact was that states tried to adjust to the drop in tax revenues by cutting appropriations, including those to state universities, often in preference to reducing budgets for other state services such as Medicaid, prisons, and K-12 education. Because state appropriations were a significant source of funds for public universities, the effect was painful resulting in the short-term in university layoffs and tuition increases, and in the long-term a potential reduction of students in the pipeline and in the next generation of scientists.

Further complicating the problem for public universities today are structural problems in state budgets. Growth in mandatory expenditures is far outstripping growth in revenues. Higher education funding is one of the few places where states have discretion, and this area continues to be targeted for reductions.

While the economy recovered throughout the first half of the decade, state support (adjusted for inflation) for public higher education still lags behind the high point of funding before the 2000 economic downturn. This lack of meaningful growth in state support has occurred at a time when enrollments have increased significantly. Public institutions have attempted to make up for the loss in state support with higher than inflationary increases in tuition, resulting in pressure to control tuition increases and mandated caps on tuition levels by state legislatures.

The greatest impact of the 2000 economic downturn on private universities was seen in a reduction in private gifts and the erosion in the value of endowments. This loss in revenues was felt especially by the private universities that had built dependence on these sources to pay for operating expenses. Like public universities, private universities increased tuition to make up a portion of the lost revenue.

From 2004 through 2007, the equity markets rebounded, universities (privates, as well as publics) adjusted endowment distribution policies to smooth the effect of volatile markets on operating budgets, and private giving and donations to public and private universities grew to new levels. However, high investment returns for the largest endowments have attracted the attention of some policymakers. The challenge is identifying the appropriate balance between current spending and protecting the resource base for future generations.

There is a presumption that distribution rates (for example, rates of 4 to 5 percent) are too low given the real growth in endowments and that increases in tuition could be avoided by a greater use of these resources to support operations. This view misses the point that endowments are largely restricted by donors for specific purposes, and that spending formulas are designed to preserve these resources so that the institution and future generations of students and faculty can receive at least the same level of support as in the present.

More recently, beginning in 2006 and into 2008, the bursting of the housing bubble, defaults on subprime mortgages, and record high energy prices has resulted in downward pressure on economic growth at the national level. This has led to increased volatility in the equity and bond markets. In addition, many states are already experiencing a downturn in state revenues, with most projecting a similar impact. Uncertainty in the markets will almost surely have an impact on state funding for public higher education and on the market value of endowments, affecting both public and private universities.

The funding concerns of research universities, both public and private, combined with the increased costs of doing research cited earlier, are a legitimate threat to the nation's basic research capability. While research universities boast significant tangible and intangible assets, there still exists a real and growing imbalance between available resources and the mandatory outlays of the nation's research universities. This issue needs to be addressed in the context of the historically productive Federal Government-University research partnership; doing so will ensure that effective and constructive solutions are found.

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