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# An Evaluative Study of Financial Management for Institutions of Higher Education as Related to Government Negotiated Research Contracting

Howard Haire  
*Walden University*

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AN EVALUATIVE STUDY OF FINANCIAL MANAGEMENT  
FOR INSTITUTIONS OF HIGHER EDUCATION  
AS RELATED TO GOVERNMENT NEGOTIATED  
RESEARCH CONTRACTING

by

Howard C. Haire

Submitted to the  
Faculty of the Institute for  
Advanced Studies in Education  
of The Walden University  
in Partial Fulfillment of  
the Requirements for the Degree  
of  
Doctor of Philosophy  
in  
Education

*Michael S. Backenheimer*  
Michael S. Backenheimer, Ph.D.  
Dissertation Advisor

August, 1972

Walden University  
Naples, Florida

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An Abstract

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## ABSTRACT

This study explores five elements pertaining to sound financial management in institutions of higher education as related to Government negotiated research contracting. The research tested the feasibility of five hypotheses presented as elements to be investigated in the study. Responses to a mail questionnaire were analyzed and final audit reports were examined. The data obtained were used as evidence to support the contention that sound financial management in universities as related to research negotiated contracting is important and can be improved through these five elements:

1. Financial management aids in developing the climate in which research can best be performed. It has been shown that research is performed in almost all the institutions of higher education. However, it is believed that the institutions would greatly enhance and improve the climate if they utilize management advisory services and provide staff training for their financial management personnel.

2. Universities and Government have a common interest in assuring the conservation of public funds. This can be accomplished by the universities having the capability of furnishing the Government with timely and accurate financial reports, accounting for the stewardship of the research funds,

and by maintaining the financial accounts in such a manner as to readily reflect the segregated costs applicable to each research project. It would be a great improvement to the common interest of the university and the Government if all universities had their accounting firm review and approve their indirect cost proposals. The Government should then be able to accept the proposal if certified by the university's accounting firm to be reliable enough to use for negotiating the indirect cost rate without an audit by Government auditors.

3. Government financial policies and regulations, as they pertain to universities, are provided to encourage maximum realization of research. The representatives of universities and Government have worked together and made great progress in formulating procedures and methods for improving the financial aspects of research contracting. Some of the methods and procedures which provide evidence of the mutual endeavor are; (1) the use allowance in lieu of depreciation is acceptable under Office of Management and Budget Circular A-21 and the American Council on Education; (2) the procedure for vesting title of research property is clearly established by Office of Management and Budget Circular A-101 which aids in administering and closing the research contract without undue delay; and (3) the policy of one Government agency

performing audit of direct and indirect costs, as well as negotiating indirect cost rates for a single university (OMB Circular A-88) greatly improves the uniformity of mutually accepted cost principles by universities and Government.

4. Mutual financial responsibility of universities and Government as related to research contracts is essential. Personnel of both contractual entities are making a concerted effort to recover indirect costs of university research through an equitable method and to provide a method of advancing funds through the letter-of-credit which alleviates the need of the university to use its own funds. It is believed that more emphasis should be placed on the review of research cost budgets by the financial management of the university.

5. Audit functions of Government audit agencies regarding the auditing of research contracts at universities could be performed by the institution's external auditors. Most universities have their accounting records audited by either independent accounting firms or by state or some independent audit group. These auditors are external auditors and have a professional integrity to maintain, therefore the audit performed by them and the financial reports issued should be acceptable to any interested party provided the reports contain an unqualified auditor's opinion.

The finalization of the research contracts could be handled more expeditiously if the Government would accept the verification by external university auditors of the total costs incurred under cost-reimbursement contracts.

This paper emphasizes the importance of sound financial management in educational institutions as related to Government research contracting and how it can be improved. The research has validated these essential factors.

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## CHAPTER I

### INTRODUCTION

#### I. THE PROBLEM

Before World War II, Federal expenditures for research at educational institutions were confined almost solely to grants to agricultural experiment stations connected with land-grant colleges. Federal expenditures for research at educational institutions in fiscal year 1940 did not exceed \$15 million and were almost entirely for agricultural research at the land-grant colleges.<sup>1</sup> Federal research agreements for specific research projects, as we know them today, were virtually nonexistent. In contrast to the 1940 figure, it is estimated that \$1,896 million will be spent by Federal agencies for the support of research projects at educational institutions in fiscal year 1972.<sup>2</sup>

Stimulated by World War II, support of research on a large scale was undertaken by the Office of Scientific Research and Development. At the close of World War II, support for a number of the OSRD research projects was continued by other Government agencies, including the Public Health Service and

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<sup>1</sup>The Administration of Government Supported Research at Universities (U.S. Government Printing Office, 1966) p. 1.

<sup>2</sup>Special Analysis Budget of the United States Government - Fiscal year 1972 (U.S. Government Printing Office, 1971) p. 274.



the Office of Naval Research. A landmark in the Federal support of fundamental research and the development of relations between the military departments and educational institutions was the establishment of the Office of Naval Research. Subject to general military procurement regulations, it also considered and adapted many OSRD policies and procedures.

Research contracts with educational institutions did not provide for profit or loss, therefore the question of indirect cost became important to them. Indirect cost is an item of cost which is incurred for joint objectives and cannot be identified specifically with a single objective, such as a product, service, program, function, or project. ONR negotiated an indirect cost rate on individual projects with individual institutions. This procedure was unsatisfactory to both the recipient institutions and ONR because of the time consumed in negotiations and the difficulties that came from administering a variety of rates. The need for better application of indirect costs for research contracts prompted Government officials and university representatives to develop a set of principles, in August 1947, entitled "Explanation of Principles for Determination of Costs Under Government Research and Development Contracts with Educational Institutions." This document was known as the "Blue Book." For the first time a single indirect cost rate for each educational institution could be

established. The "Blue Book" listed and defined allowable direct and indirect costs and inadmissible costs. It also contained the principle that total costs equal direct plus indirect costs, and in determining total cost no distinction should be made between basic and applied research.

During the latter part of the 1940's and the 1950's, when the Government, by contract, supported a research project of the type which the educational institution concerned might undertake as a part of its own educational and research program, it was considered appropriate for the institution to agree in the contract to sustain part of the cost of the project. Cost sharing was often accomplished by providing in the contract for the percentage of the total allowable cost of the project to be borne by the Government, by agreeing that, for the purpose of the particular project, reimbursement for indirect expense of the institution be limited to some rate or dollar amount less than the indirect expense otherwise applicable and computed in accordance with the prescribed principles and by providing in the contract that certain items of cost will not be considered reimbursable.

In the latter part of the 1940's, the Office of Naval Research was the only Federal agency with a general program of fundamental research in the natural sciences. The ONR program was considered by many as a cooperative program effort

between educational institutions and the Government, aimed at assisting in the transition from a war-time technological emergency to a peacetime scientific economy. The cost sharing was based on certain assumptions; (1) the universities were in a financial position to cost share in some degree what was then a relatively small amount of Federal funds, and that the amount of these funds would remain relatively stable and maybe decrease; (2) these funds should be spread as far as possible; (3) depending upon their relative ability to contribute, institutions should have an equity in research they might be expected to undertake as a part of their own programs; (4) and any cost sharing agreement must be mutually agreeable.

As new agencies emerged, and as the total amount for research and development at educational institutions began to increase, it was inevitable that the ability of these institutions to participate equally in each new or expanded program began to diminish. The events of succeeding years have resulted in a dramatic expansion in the support of research and development at educational institutions. It is essential that the Nation's educational institutions contribute a steady and never-ending supply of scientific knowledge necessary to the solution of technological and human problems and to produce trained manpower competent to engage in the further discovery and exploitation

of such knowledge. The interests of the Federal Government and institutions of higher learning in science and education have merged.

The magnitude of the Government's scientific and technological need has passed the point where private sources of support can be expected to meet it adequately. The unprecedented size of Federal appropriations for research and development attest to this. The Country's scientific strength will not be determined solely on the basis of massive Federal expenditures for research. In the case of institutions of higher education, it will depend also on the success with which such expenditures can be administered without destroying the traditional relationship between these institutions and the Federal Government. The maintenance and protection of an environment in which our universities may continue to flourish, free from undesirable control and unwanted influence whether intentional or unintentional, is a matter of national concern. This concern must be reflected in Federal policies which will preserve the strength, vitality, and independence of institutions of higher education.

The general problem of maintaining the vitality of our institutions of higher learning and of Government-university relationships include indirect cost policies

and their impact on the Nation's educational community as well as the proper relationship of an institution's research and educational function. Other considerations are equally important such as the possible imbalance between basic and applied research, the manner and extent to which other types of cost are borne, the influence of these costs on personnel, programs and administrative policies, and the managerial function performed by institutions in connection with government-sponsored facilities. All of these conditions directly affect both the research needs of Federal agencies and the strength and independence of the institutions of learning.

The Federal Government finds it advantageous to maintain and augment the strength of our educational institutions as an essential part of developing our national scientific resources by increasing scientific research in the universities. The ability of educational institutions to share in the support of these increased activities in research is limited since this expansion has grown to the point where only a portion of its cost can be borne by the funds obtained from other than Government sources.

The private institutions of higher education, in absorbing any non-reimbursed costs of Federal research,

must draw upon unrestricted funds available to them usually from gifts and endowments. Any significant drain on this important source of support represents a serious threat to the institution's financial and functional integrity. The public institutions may use state appropriations to meet some of the non-reimbursed costs of Federally-supported research, however, there are real limits on the extent to which this diversion may be permitted by those responsible for the provision of these funds.

The Government, by paying full costs of all research they support, may continue to increase the amount of scientific research with less harm to other areas of education and research. Universities usually undertake only the research in which members of the faculty are interested. If all the costs are recovered for the research, the financial necessity will cease to be a possible factor in the institution's selection of those contracts desired by its faculty.

The relationship between sponsored research and the total financial situation differs between institutions and must be taken into consideration by the agency sponsoring the research. The current Government policy is to reimburse the institutions of higher education the total costs incurred under cost type contracts. These costs include the indirect costs of the institution as well as the direct costs.

The financial managers of the institutions should maintain a system which will provide for the full recovery of all costs under research contracts.

The general purpose of this study is to evaluate the financial management of institutions of higher education as related to Government negotiated research contracting and provide these institutions with information that will be useful in improving their financial management systems.

## II. SELECTIVE SETTING FOR THE STUDY

The Department of Health, Education, and Welfare was selected for this study because it provides more research funds to institutions of higher education than any other Government agency. This is based on an analysis of the budget for a period of three years as reflected by Table 1.

The Department of Health, Education, and Welfare has been assigned indirect cost rate determination and the audit responsibility for most universities by the Office of Management and Budget by Circular A-88, "Policies for coordinating the determination of indirect cost rates and auditing in connection with grants and contracts with educational institutions."

The policy is that one Federal agency will be responsible

TABLE 1

CONDUCT OF RESEARCH AND DEVELOPMENT IN COLLEGES AND  
UNIVERSITIES (in millions of dollars)<sup>a</sup>

Department or Agency	Obligations			Expenditures		
	1970 actual	1971 estimate	1972 estimate	1970 actual	1971 estimate	1972 estimate
Health, Education, and Welfare	649	773	880	628	685	744
National Science Foundation	225	253	381	272	252	298
Defense-Military Functions	218	207	205	222	208	209
National Aeronautics and Space Admin.	131	125	110	143	138	128
Atomic Energy Commission	100	95	86	100	95	86
Agriculture	68	77	83	65	76	81
All Other	<u>88</u>	<u>123</u>	<u>152</u>	<u>72</u>	<u>109</u>	<u>132</u>
Total	1,479	1,653	1,896	1,502	1,565	1,678

<sup>a</sup>Special Analysis Budget of the United States Government -  
Fiscal year 1972 (U.S. Government Printing Office, 1971) p. 274.



for negotiating the indirect cost rate or rates at an institution and all Federal agencies will accept the rate. This policy also applies to the audit of direct and indirect costs of the educational institution. Whenever agencies have specific situations affecting their contracts, they will advise the cognizant audit agency. Audit reports will be furnished to all interested Government agencies by the cognizant audit agency.

The Department of Health, Education, and Welfare is responsible for 1,980 educational institutions and three other Government agencies are responsible for 67 others for a total of 2,047 institutions.<sup>3</sup> In terms of sheer numbers, the Department of HEW is thus responsible for 96.7% of the educational institutions. Since the greatest percentage of the educational institutions is the responsibility of the Department of HEW, the researcher believes this is also a good basis for selecting the Department as a representative Government agency.

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<sup>3</sup> Assignment of Cost Negotiation and Audit Responsibility Under Office of Management and Budget Circular No. A-88, Attachment A.

### III. ELEMENTS IN FINANCIAL MANAGEMENT FOR INSTITUTIONS OF HIGHER EDUCATION AS RELATED TO GOVERNMENT NEGOTIATED RESEARCH CONTRACTING

This research study is evaluative and its purpose is to examine and assess five hypotheses.

#### Aids in Developing the Climate in which Research Can Best be Performed.

1. It is hypothesized that sound financial management in institutions of higher education aids in developing the climate in which research and special training can best be performed. The institutions of higher education have a great responsibility today to provide the Federal Government with expertise in many areas of research and special training. In order to adequately discharge the responsibility, the institution must have financial as well as technical capabilities to conduct the research or training.

The Assistant Secretary Comptroller, Department of Health, Education, and Welfare, spoke before the 80th annual meeting of the American Institute of Certified Public Accountants in 1967. The topic of his speech was "Improving Financial Management for Recipients of Federal Funds." He stated that "Accounting systems in states, localities, colleges and universities run the gamut from the most sophisticated automated business systems with effective cost accounting and cost finding capabilities to the most rudimentary systems

of fund accounting."<sup>4</sup> He also said, "We are at the threshold of a new era in the relationship of the government to its people and its institutions."<sup>5</sup>

Many colleges and universities are being criticized for not using good financial management including good cost accounting techniques. "A study, sponsored by the Ford Foundation, sharply criticizes universities for their resistance to cost-effectiveness analysis as profoundly anti-intellectual."<sup>6</sup> It has been stated that "Almost every current study of university administration shows that in most of the basic management techniques, such as long-range planning, goal-setting, cost accounting, and information processing, most colleges and universities are woefully behind the times."<sup>7</sup>

Good accounting simplifies and facilitates sound financial management. A good accounting system, however, cannot be properly designed unless the goals and requirements of

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<sup>4</sup> James F. Kelly, "Improving Financial Management for Recipients of Federal Funds," *Journal of Accountancy*, January 1968, p. 53.

<sup>5</sup> Ibid., p. 54.

<sup>6</sup> "Colleges Resistance to Cost-effectiveness Analysis Scored," *Data Sheet, Management Accounting*, July 1971, p. 10.

<sup>7</sup> Ibid., p. 10.

management are determined and defined.

High ideals, ambitious plans, and generous financial support will not make a successful university. The efforts and contributions of many persons and organizations are necessary. To achieve the effective and efficient coordination necessary for maximum accomplishment, management data cannot be restricted to generalities. They must reflect the performance of each major department and each operating program and activity. Insofar as cost data are concerned, this means that total costs and comparisons of total costs must be broken down into the costs of departments, programs, and activities.

Instruction and research are the primary programs of many universities, and directly concerned with them are the instruction and research departments. The departmental structure and the ultimate goals of the individual instruction and research departments are much the same in most universities. Therefore, comparisons of costs, cost factors, and the factors that influence costs in both instruction and research bring attention to similarities and contrasts that may serve as guides for departmental organizing, planning, staffing, and financing. The comparisons will also help management to do a better job of co-ordinating the various departmental programs.

An analogy of the research programs of universities and industries will reveal some interesting contrasts. An industry can control its research budget at a level which, at the minimum, would permit it to maintain or improve its competitive position; at the maximum, it would be limited to the point at which further research investments would be of no benefit to the company.

For a university the minimum would be the amount of research necessary to sustain and utilize completely the scientific knowledge, interests, and skills of the faculty. The maximum is the point at which additional research cannot be conducted by the university without prejudice to its primary teaching goals.

Research costs in industry are responsive to the needs and actions of management. Industry can, and frequently does, curtail and modify its research budgets whenever business conditions so dictate. The human tendency, live today and let tomorrow take care of itself, has resulted in a long-standing situation in which the research portion of a budget is the one most vulnerable to economy actions.

It is an awareness of this general attitude that research is something "you can take or leave" that has been at least partially responsible for the apparent reluctance of educators to identify the portion of the university budget

that is applied to research. There has been a well-justified fear that fiscal authorities, upon seeing a sizable portion of the budget devoted to research, would look upon this as a cushion which, by manipulation, could be used to ease the blows of the economy axe on other portions of the budget.

If a university uses program costs, this may continue to be a serious danger. The time has come, however, when universities can no longer disregard the need for identifying and justifying the costs of their programs, and they also should be prepared to explain why certain management practices and philosophies that are proper for industry cannot be applied to educational institutions.

One reason is immediately apparent. In industry, research can be conducted by separate personnel, and it may have little immediate impact on the firm's other functions. University personnel so combine the instruction and the research functions that any significant curtailment of research would immediately affect the instructional programs. Research for a university is a cost factor that cannot be completely subject to independent budgetary control.

If we are alert to the danger that program costs may be misused, it should not be too difficult to prevent such misuse. Complete, honest, and comprehensive reports by the university are necessary to develop the over-all broad

understanding that will be essential to solution of not only today's but also tomorrow's financial problems.

Many of the large universities not only found it necessary to separate the functions of the university into distinct departments, such as instruction and research, but also created research foundations. The research foundations usually have the benefit of the same directors or other governing body as the university, however, the research function is completely divorced from the instruction and other functions of the university.

The research foundations were established in an attempt to facilitate the administering of research programs. Many of the universities furnished utilities and other services to the foundations without charge.

Government agencies began to question the propriety of the foundations treating the charge for services as being costs incurred under contracts performed for the Government by the research foundation.

The Department of Health, Education, and Welfare issued a policy that contracts negotiated with research foundations can only be charged with those costs which represent actual costs of the foundation.

The business managers and research administrators of 227 foundations and affiliated institutions were notified

by a memorandum from DHEW that they "must submit appropriate indirect cost proposals based on costs actually incurred by them in order that such costs may be reimbursed."<sup>8</sup>

Many of the research foundations established procedures for reimbursing their affiliated institutions for both direct and indirect costs. The costs were then considered incurred under the contract and were reimbursed to the foundations by the Government. Some of the other research foundations have been abolished or have become a completely separate organization. A good example of a research foundation and an affiliated university becoming separate organizations are Stanford Research Institute and Stanford University. The Washington Post, on January 15, 1970, published an article which stated that "Stanford U. Agrees to Relinquish Control of Its Research Institute."<sup>9</sup> The Stanford Research Institute will pay the university 25 million dollars at the rate of one per cent of its gross revenue each year. SRI has always been considered a part of the university's overall budget.

The research or special training functions of the institutions of higher education are usually financed by grants or contracts with interested private foundations,

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<sup>8</sup>DHEW Grants Manual, P.P.O. #142, Policy, August 28, 1967.

<sup>9</sup>The Washington Post, January 15, 1970, by Edward Kahn.



State or Federal Governments. The institutions must share the cost of all research projects with the Federal Government under the mechanism of the grant, however, this is not necessary with research projects performed under contracts. Some Federal Government agencies do require the institution to share the cost for special training projects performed under contracts. Total cost incurred for the performance of research projects may and should be recovered under negotiated contracts with the Federal Government.

The effect of Federal funds for research and special training upon universities has been favorable because of the increasing amount of research done, however, the receipt of the funds in many cases has required organizational changes and many other internal adjustments at the universities. It has produced some financial burdens and problems of balance among university programs.

Research funding by the Government to the universities will increase by 14.7 percent, from \$1,653 million in 1971 to \$1,896 million in 1972.<sup>10</sup> The increase in research will provide for the training of a greater number of science and engineering graduate students through employment on the research projects, and will help develop needed capabilities

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<sup>10</sup>"Special Analysis Budget of the United States Government - Fiscal Year 1972," op. cit., p. 274.

in academic institutions to undertake research on important national, regional, and local problems.<sup>11</sup>

The funding of research by the Government to universities is usually by grant or contract. The general distinction between grants and contracts is; (a) under contracts the Government procures the research efforts it needs, (b) under grants it supports the research efforts of the university which is a mutual benefit. The choice of these two devices of financial support should be well considered by the universities. Universities tend to give identical administrative treatment to grants and contracts, however, grants have statutory cost sharing requirements and normally contracts do not.

Some Government agencies do have administrative restrictions on contract cost. DHEW limits the recovery of indirect cost on special training contracts to 8 percent of total allowable cost. NASA has issued basic guidelines making cost sharing mandatory for basic or applied research which was initiated by a unsolicited proposal.<sup>12</sup> Educational institutions are expected to cost share from 1 to 5 percent of the budgeted amount of the contract.

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<sup>11</sup> Ibid., p. 274.

<sup>12</sup> College and University Reports (Commerce Clearing House, Inc.) Section 15.604.

Common Interest In Conservation of Public Funds.

2. It is hypothesized that institutions of higher education and the Government have a common interest in assuring the conservation of public funds and the achievement of what-ever results or objectives will advance the public good.

Responsibility for the recovery of the total costs and all other financial administration of research projects, performed under contracts, should be assigned to a highly qualified financial manager who must be able to administer the fiscal and financial programs in such a way as to support the aims and objectives of the institution, while at the same time maintaining fiscal integrity and economy. His office could be designated, the Office of Financial Management. The manager of this office should be responsible to the comptroller or business manager, who in turn should report to the President and the Governing Board of the university. The financial management office should provide proper financial control of all research or special training projects performed by the university. These controls should be provided by an adequate system of budgeting and accounting.

Financial management, through proper budgeting and accounting for the research or special training function of the institutions of higher education, is essential since the Federal Government has requirements relevant to contracting with the

institutions. The Federal Government does not prescribe any particular accounting system but does require the contractor to maintain accounting records to properly reflect the costs incurred during the performance of cost reimbursement type contracts. Usually cost reimbursement type contracts are negotiated with educational institutions.

The success of the educational programs of a college or university depends in part upon the adequacy of the administration of its business and financial operations. The magnitude of these responsibilities in the administration of budgets and the programs they support requires superior professional training, experience, management skills and personal qualifications.<sup>13</sup>

The administration of business and financial affairs has become an important field of service in higher education. Business officers administer annual expenditures of a magnitude that place them in a position of major significance to the national, as well as the local, economy.<sup>14</sup>

Government agencies, in exercising their stewardship responsibilities, require that all contractors employ the same sound financial management practices in administering Federally supported activities as they do in administering activities

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<sup>13</sup>College and University Business Administration  
(American Council on Education) p. 11.

<sup>14</sup>Ibid., p. 14.

supported from their own funds.

Government contracting officers are responsible for evaluating business considerations, i.e., those factors relating to (1) cost/price analysis and (2) determination of contractor's responsibility.

Business evaluation normally centers upon cost analysis and analysis of contractor's financial strength and management capability. Elements considered in cost analysis generally include direct material and labor costs, subcontracting, overhead rates, general and administrative expense, and travel costs. Elements considered in evaluating contractor's financial strength and management capability include organization, past performance or similar contractual efforts, reputation for reliability, availability of required facilities, cost controls, accounting policies and procedures, purchasing procedures, personnel practices, property accounting and control, and financial resources.

Educational institutions are normally expected to provide the sponsoring Government agencies with technical progress reports and financial reports. Financial reports play a part in contract administration, especially cost-reimbursement type contracts. They reveal the financial status of the contract and provide information which is helpful in avoiding or anticipating overruns. This type of cost information provides both the Government project officer, who has the primary responsibility for

assuring that the technical objectives of the program are achieved under the contract, and the contracting officer with a check on the contractor's expenditures based on cost elements, and effectively permits the matching of costs incurred with technical results achieved. The information obtained from progress and financial status reports will provide project officers and contracting officers with an indication as to whether work is progressing as called for under the contract.

The preparation of financial reports is the responsibility of the chief business officer.<sup>15</sup> It is important that all financial reports reflect the financial status of the funding regarding each research contract. The accounting records of the university, to document the financial reports, should be readily accessible to authorized Government personnel for their examination. The sponsoring Government agency is responsible for the stewardship of public funds and they in turn look to the university for adequate and accurate reporting. Governmental programs are not undertaken to produce revenue, the achievement of results or objectives is measured in terms of the public good. Information disclosing the results of operations in terms of the public good should be collected and processed through the accounting system, to the fullest extent possible, if effort and objectives are to be meaningfully related.

Under the U.S. Office of Management and Budget

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<sup>15</sup> Ibid., p. 165.

Bulletin No. 68-10 entitled "Reporting accrued revenues and expenditures to the Treasury and the Office of Management and Budget," Government agencies are required to report their accrued expenditures on a monthly basis, and for this purpose accrued expenditures are defined as representing the performance of the payees, including contractors, based on the amount of payments earned. The reporting of accruals should reflect the points at which performance occurs rather than any physical delivery by the institution.

The DHEW procedures for contractors submitting the required "Contract Financial Report" provide that contracts with educational institutions, other than those for fabrication or construction, are excludable from the reporting requirements, if the DHEW agency determines that comparable information can be obtained by other procedures. Such institutions must, as a minimum, report cash expenditures at least quarterly. However, many universities submit quarterly reports including actual cost to date, estimated cost for current quarter, and cumulative actual and estimated cost.

#### Financial Policies and Regulations.

3. It is hypothesized that Federal Government financial policies and regulations, as they pertain to universities, are provided to encourage maximum realization of research and special training projects.

The institutions may obtain various Government circulars and manuals that provide them information for determining and recording costs. Regulations for ascertaining costs are provided in two publications, one used by civilian Government agencies and the other by the Defense Department. The publication for civilian agencies is the Federal Procurement Regulation known as the FPR. The Armed Service Procurement Regulation known as the ASPR is for the Defense Department. There are several circulars issued by the Office of Management and Budget which provide essential guidelines for educational institutions in negotiating and administering research contracts.

This study provides a general explanation of various aspects of the contents of the Government publications and circulars.

The Armed Services Procurement Regulation (1963 Edition) is issued by direction of the Assistant Secretary of Defense (Installations and Logistics) pursuant to the authority contained in Department of Defense Directive No. 4105.30, dated March 11, 1959, and in Title 10, United States Code 2202 (1956). The ASPR contains policy and procedure relating to contracting with educational institutions and is designed to achieve maximum uniformity throughout the Department of Defense.



"The Federal Procurement Regulations" is issued pursuant to the Federal Property and Administrative Services Act of 1949, 63 Stat. 377, as amended; the FPR is a vital part of the Federal Government Supply System. This republication is a significant step toward achieving General Service Administration's objective of providing broadened guidance in Government procurement, including related economic aspects, as well as techniques and procedures for the actual contracting process.

Since the Armed Services Procurement Regulation primarily pertains to the Defense Department and the Federal Procurement Regulations pertain to all the other Government agencies, the regulations and procedures prescribed in the FPR are used for this study. The FPR pertains to the Department of Health, Education, and Welfare and since that department is used as the representative Government agency, the FPR is applicable.

The FPR contains twenty one parts, each part covers certain facets of procurement. The parts that are applicable to procurement by negotiation and relate to educational institutions are generally covered in the study.

FPR Part 1-3.205 Services of Educational Institutions, provides that pursuant to the authority of Section 302 (c) (5) of the Act 41U.S.C.252 (c) (5), purchases and contracts may be

negotiated without formal advertising if the service is rendered by a university, college, or other educational institution. The authority of the section encompasses educational and vocational training of personnel, experimental, developmental, or research work, and analysis, studies or reports conducted or prepared by educational institutions.

Most educational institutions prefer to negotiate research contracts under the above authority since it does not require sole source justification and can usually be expedited.

The type of contract negotiated is carefully determined by the sponsoring Government agency as this affects the resulting fair and reasonable prices. Price analysis may provide a basis for selecting the type of contract, however, the preponderance of contracts with educational institutions are either cost or cost-sharing type contracts. The institutions do not assume any risk since they are reimbursed for total cost incurred under a cost type contract and reimbursed for the mutually agreed predetermined percentage or specified costs under cost-sharing type contracts.

The cost principles and procedures for educational institutions are covered in Part 1-15.3 of the Federal Procurement Regulations. These principles and procedures are applicable to all educational institutions that contract with Federal agencies. "The principles are confined to the subject

of cost determination and make no attempt to identify the circumstances or dictate the extent of agency and institutional participation in the financing of a particular research or development project."<sup>16</sup>

The intent of these cost principles is to provide the Government agencies and educational institutions with a common basis for determining the allowable costs of research sponsored by the agencies.

"Arrangements concerning financial participation are properly the subject of negotiation between the contracting officer and the educational institution concerned."<sup>17</sup>

"The tests of allowability of costs applied in these principles are reasonableness and allocability under consistently applied generally accepted cost accounting principles and practices; however, these provisions are subject to any limitations as to type or amounts set forth in the research agreement."<sup>18</sup>

The writer defines research agreements as "agreements to perform Federally sponsored research through grants, cost-reimbursement type contracts, cost-reimbursement type sub-contracts, and fixed-price contracts and subcontracts for research."<sup>19</sup>

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<sup>16</sup>Federal Procurement Regulations, Subpart 1-15.301-1.

<sup>17</sup>Howard Wright, Accounting for Defense Contracts, (Prentice-Hall, Inc., 1963) p. 178.

<sup>18</sup>Ibid., p. 178.

<sup>19</sup>Ibid., p. 178.

Circular No. A-21, Revised, issued by the U.S. Office of Management and Budget, provides principles for determining costs applicable to research, development, training, and other educational services under contracts with educational institutions. "The principles are designed to provide recognition of the full allocated costs of such research work under generally accepted accounting principles. No provision for profit or other increment above cost is intended."<sup>20</sup>

"The cost of a research agreement is comprised of the allowable direct costs incident to its performance, plus the allocable portion of the allowable indirect costs of the institution, less applicable credits."<sup>21</sup>

"Direct costs are those costs which can be identified specifically with a particular research project, an instructional activity or any other institutional activity or can be directly assigned to such activities relatively easy with a high degree of accuracy."<sup>22</sup> Typical transactions chargeable to research contracts as direct costs are (1) compensation of employees working directly on the research project, (2) fringe benefits related to the direct compensation of the employees, (3) costs of materials consumed in performance of the project,

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<sup>20</sup>Office of Management and Budget, Circular No. A-21 Revised, September 2, 1970, p. 1.

<sup>21</sup>Ibid., p. 3.

<sup>22</sup>Ibid., p. 6.

and (4) other items of costs directly related to the work performed. Each of these items must be consistently treated as direct costs rather than indirect costs.

"Indirect costs are those that have been incurred for common or joint objectives and therefore cannot be identified specifically with a particular research project, an instructional activity or any other institutional activity. At educational institutions such costs normally are classified under the following functional categories: (1) general administration and general expenses, (2) research administration expenses, (3) operation and maintenance expenses, (4) library expenses, and (5) departmental administration expenses."<sup>23</sup>

The application of direct and indirect costs to research contracts will be explained in more detail under the fourth hypothesis.

The subject of U.S. Office of Management and Budget Circular No. A-100 is "Cost sharing on research supported by Federal agencies." This Circular was issued December 18, 1970 and provides guide-lines for contractors that elect to cost share the cost of research projects. The Circular states that "These guide-lines are applicable to all Federal agencies' research grants, contracts or other research agreements (hereinafter referred to collectively as research agreements) with

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<sup>23</sup> Ibid., p.6.

educational institutions, other not-for-profit or non-profit organizations, commercial or industrial organizations, or any other recipients except Federal agencies. The term research, as used in this Circular, includes both basic and applied research."<sup>24</sup>

Research performed under grants is required by statute to cost share, however, this requirement does not apply to contracts. The Circular provides that cost sharing is not appropriate when "The particular research objective or scope of effort for the project is specified by the Government rather than proposed by the performing organization; this would usually include any formal Government request for proposals for a specific project."<sup>25</sup> There are a few Government agencies that have administrative requirements that if an educational institution submits an unsolicited proposal for either basic or applied research, then they are required to cost share the project. If the educational institution should be required to cost share, the percentage of participation will normally be at least 1% of total project costs.

"Differing administrative policies and practices associated with Federal grants and contracts for supporting re-

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<sup>24</sup>U.S. Office of Management and Budget, Circular A-100, December 18, 1970, p. 1.

<sup>25</sup>Ibid., p. 2.

search at educational institutions create confusion and additional administrative effort for educational institutions, cause conflict between the university community and the Federal Government, and reduce the effectiveness of the institutions in performing the desired research."<sup>26</sup> The inconsistencies in the Government administrative policies and practices have been a deep concern of the various agencies for some time and on January 9, 1971, the U.S. Office of Management and Budget issued Circular No. A-101 which provides for consistency among Federal agencies in the Administration of grants, contracts or other agreements with educational institutions.

There are four parts to Circular No. A-101 which are described as "Standard Policies and Practices for Administration of Research Projects at Educational Institutions in The United States."<sup>27</sup> Part I includes research performed under contracts and grants and relates to whether the educational institution or the sponsoring Government agencies exercise close control over the direction, specifications, methods, or schedules of the research. Part II relates to the approval procedures for expenditures under research agreements. "Government controls and limitations on expenditures for

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<sup>26</sup>U.S. Office of Management and Budget, Circular A-101, January 9, 1971, p. 1.

<sup>27</sup>Ibid., (Attachment A.) p.1.

specific items under research projects at educational institutions shall be in accordance with the provisions of U.S. Office of Management and Budget Circular No. A-21."<sup>28</sup> Part III covers the vesting of title to equipment in educational institutions. "Title to equipment purchased or fabricated under any type of research instrument at educational institutions shall be vested in the institution, unless it is determined that such vesting is not in furtherance of the objectives of the agency or unless there is not proper authority to vest title in the institution. Such title shall be vested in the institution upon acquisition of the equipment or as soon as feasible thereafter."<sup>29</sup> Part IV has a real impact on the financial management of educational institutions since it provides procedures for expediting reimbursement for costs incurred during the performance of research contracts. "In view of the non-profit position of educational institutions, and the stated Government objective of strengthening the research capabilities of these institutions, all agencies shall make advance payment in reasonable amounts on research projects whether under a contract or grant, whenever practical, in all cases where the agency is authorized by law to do so. The Treasury Department's letter of credit procedure should be used as the means of furnishing advance payments, whenever feasible."<sup>30</sup>

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<sup>28</sup> Ibid., p. 4.

<sup>29</sup> Ibid., p. 5.

<sup>30</sup> Ibid., p. 5.



Federal and university officials have long recognized the need for improved coordination among Federal sponsoring agencies in the determination of audits and indirect cost rates. The U.S. Office of Management and Budget, on May 15, 1968, issued Circular No. A-88 which established "Policies for coordinating the determination of indirect cost rates and auditing in connection with grants and contracts with educational institutions."<sup>31</sup> The lack of coordinated procedures prompted the academic community as well as Government agencies to recommend that the cognizant agency approach be adopted as a means of insuring allocation of resources and adequate distribution of workload. The policy of the Government is that, "One Federal agency will negotiate the indirect cost rate or rates for all agencies at a single institution. The negotiated rates will be accepted by all Federal agencies. One Federal agency will do all the necessary auditing of direct and indirect costs at a single institution."<sup>32</sup> The Department of Health, Education, and Welfare has been assigned the responsibility of negotiating indirect cost rates and the auditing of direct and indirect costs for 97 percent of the educational institutions. "Where the negotiating agency is unable to reach agreement with an institution on the establishment of an acceptable indirect cost

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<sup>31</sup>U.S. Office of Management and Budget, Circular No. A-88, May 15, 1968, p. 1.

<sup>32</sup>Ibid., p. 1.

rate or rates, it will formalize its final position and notify the other agencies involved of its recommendations. The individual agencies will endeavor to coordinate the resolution of the disputed items with the negotiating agency. If, agreement cannot be obtained through this procedure, the agencies, individually, may proceed with separate negotiations with the institution concerned."<sup>33</sup>

#### Mutual Financial Responsibility.

4. It is hypothesized that there is a mutual financial responsibility of institutions of higher education and the Federal Government as related to negotiated research contracts.

The responsibility of the financial management officer to the management of institutions of higher education is to properly comply with Government regulations pertaining to the optimum recovery of all costs incurred during performance of research contracts. This is accomplished by the proper distribution of indirect costs to the organized research function of the institution and to other activities as well as proper allocation of costs which are directly attributable to a specific research or training project.

The responsibility of the Government to the institutions of higher education in their research efforts is to provide

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<sup>33</sup> Ibid., p. 4.

regulations and procedures which are uniform and consistent in application. The Government is also responsible for prompt reimbursement to the institution for costs incurred during performance of a contract. Whereas, most research grants provide for advance payment to the institutions through the letter of credit application, there are a limited number of institutions which may use the letter of credit application for contracts. This method of reimbursement must in the near future be made available to more of the institutions.

The volume of sponsored research currently performed in higher educational institutions has inevitably made a definite impact upon the programs of these institutions. It has had a profound effect upon their traditional policies and practices. The acceptance of financial support of scientific and technological research from the Federal Government and other sources has raised problems, many of them unique to the source of the funds. In order to resolve these problems it has required institutional adjustments and has produced significant changes in the pattern and direction of educational programs, of operating procedures and even of institutional objectives. Without this additional financial assistance, many institutions would find it extremely difficult to balance their academic budgets and to maintain and expand essential research and instructional activities.

"Federal research funds have created business and logistical problems for universities which are inherent in handling large-scale research. These problems would be difficult to solve even if the Federal agencies were to administer their activities with very great skill, and the fact that they are less than perfect increases the problems."<sup>34</sup>

The universities and the Federal Government have made great strides toward solving mutual problems in their research relationship, however, "despite the remarkable adaptation of structural forms within universities and Government to meet demands of a rapidly expanding national research effort, the lag typical of the adjustment of organizational forms to the tasks imposed upon them exist in universities and in Governments."<sup>35</sup>

The internal organization of the business office within the institution of higher education is of prime importance to the overall structure of the institution. The authors of "Accounting for Colleges and Universities" stated that, "The internal organization of the business office has a direct bearing on the adequacy of the operation of the accounting system. Internal audit and control is an important adjunct of the properly organized business office."<sup>36</sup> The business office

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<sup>34</sup> Charles V. Kidd, American Universities and Federal Research, (The Belknap Press of Howard University Press, 1959) p. 155.

<sup>35</sup> Ibid., p. 222.

<sup>36</sup> Scheps C. and Davidson, E. E., Accounting for Colleges and Universities, (Louisiana State University Press, 1970) pp. 25-26.

should be fully responsible for the financial management of all research projects. It is stated that, "academic officials usually lack the training and aptitude for handling complex financial matters and also the assumption is that these persons should not have to direct their energies and abilities from instruction and research."<sup>37</sup> "The Federal Government plays two roles with respect to university research. It purchases the research needed to carry out the operating responsibilities of the national Government, and it supports research on the grounds that the increase of knowledge is itself in the national interest."<sup>38</sup> Writers usually distinguish the research projects between grants and contracts by stating that the Government purchases research under contract and supports research under the grant.

It is said that, "since Federal research funds are highly concentrated in a few large universities, the Federal support actually may increase the difficulties of nonrecipient institutions. They may find it more difficult and expensive to maintain a good faculty and a stimulating atmosphere than if the Federal research money were being spent entirely outside the academic market place - or not at all."<sup>39</sup> It is also stated that

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<sup>37</sup> Ibid., p. 19.

<sup>38</sup> Alice M. Rivlin, The Role of The Federal Government In Financing Higher Education, (Brookings Institution, Wash. D.C., 1961) p. 40.

<sup>39</sup> Ibid., p. 59.

"universities need support from Government, and Government needs knowledge obtainable only by university research. As a result, the two have been placed in a state of unprecedented mutual dependence."<sup>40</sup>

The author of "The Effects of Federal Programs on Higher Education," points out that "to alleviate demands on their own unrestricted income, universities are requesting and receiving from the Government increasing sums for the salaries of both junior and tenured faculty for that portion of their time which they devote to Federally sponsored research; and they are also seeking reimbursement of the full indirect costs of this research in government grants as well as contracts."<sup>41</sup>

The relationship between the institutions of higher education and the Federal Government has been a healthy one, however, it requires continual reviewing to assure the involved parties of the Government and the universities that the current funding procedures come within the realm of sound financial management.

The Department of Health, Education, and Welfare has issued a document which is a guideline for the universities to use in their financial management evaluation program. In this

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<sup>40</sup>Kidd, op. cit., p. 206.

<sup>41</sup>Harold Orlons, The Effects of Federal Programs on Higher Education, (Brookings Institution, Washington D.C., 1962) p. 294.

brochure, the Under Secretary of DHEW says that the educational institutions and DHEW "share a serious responsibility for the stewardship of public funds for the improvement of the Nation's health, education, and welfare. The Management Evaluation Program should advance our fulfillment of these goals."<sup>42</sup> The title of the document is "A Program for Improving the Quality of Grantee Management," which indicates that it is applicable to grants rather than research contracts. The same guidelines, however, are just as applicable to the financial management of research contracts and should be followed whenever practicable. There are three basic objectives which should be followed in sound financial management: (1) provide for control and use of the financial resources of the university; (2) provide management with a control mechanism over the utilization of resources in accordance with the approved budget and to assign appropriate responsibility for this control; and (3) maintain financial records on a consistent basis in accordance with generally accepted accounting principles for organizations of a similar type.

The Department of Health, Education, and Welfare has published a brochure entitled, "A Guide for Colleges and Universities - Cost Principles and Procedures for Establishing Indirect

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<sup>42</sup> A Program for Improving the Quality of Grantee Management, (U.S. Department of Health, Education, and Welfare, 1970) p. Foreword.

Cost Rates for Grants and Contracts with the Department of Health, Education, and Welfare." This brochure provides the educational institutions with guidelines for the preparation and the submission of indirect cost rate proposals. As previously stated in this study, the DHEW is assigned the responsibility for negotiation of indirect cost rates and auditing of direct and indirect cost for 97 percent of the educational institutions. The brochure contains four pertinent sections: (1) indirect costs and HEW; (2) guidelines for preparing indirect cost proposals; (3) OMB Circular A-21 - Principles for Determining Costs Applicable to Grants and Contracts With Educational Institutions - OMB Circular A-88 - Policies for Coordinating the Determination of Indirect Cost Rates and Auditing in Connection With Grants and Contracts With Educational Institutions; and (4) Appendices.

Every university's financial management office must be familiar with the third section of the brochure in order to discharge its responsibility to the university's management and the sponsoring Government agency. The third section contains cost principles which are mutually acceptable to representatives of universities and Government agencies. It is the responsibility of the universities and the cognizant Government agency to apply these costs principles to all research and training projects performed by each university. OMB Circular A-21, which is



a part of section three, is divided into ten major headings: (1) purpose and scope; (2) definition of terms; (3) basic considerations; (4) direct costs; (5) indirect costs; (6) identification and assignment of indirect costs; (7) determination and application of indirect cost rate or rates; (8) simplified method for small institutions; (9) general standards for selected items of cost; and (10) certification of charges. The ninth major heading covers the various costs applicable to research contracts and provides a brief explanation and "standards to be applied in establishing the allowability of certain items in determining cost. These standards should apply irrespective of whether a particular item of cost is properly treated as direct cost or indirect cost. Failure to mention a particular item of cost in the standards is not intended to imply that it is either allowable or unallowable; rather determination as to allowability in each case should be based on the treatment or standards provided for similar or related items of cost. In case of discrepancy between the provisions of a specific research agreement and the applicable standards provided, the provision of the research agreement should govern."<sup>43</sup>

The Department of Health, Education, and Welfare provides that contracts for research work with educational institutions, in the United States, may contain a provision for advance pay-

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<sup>43</sup>A Guide for Colleges and Universities - Cost Principles and Procedures for Establishing Indirect Cost Rates for Grants and Contracts With the Department of Health, Education, and Welfare, (U.S. Department of Health, Education, and Welfare, 1971) p. 15.

ments and they will be available in reasonable amounts, unless prohibited by law. The DHEW procurement regulations advises that the letter of credit method of financing advance payments may be used whenever feasible. Department wide blanket letters of credit, which apply to the financing of all research contracts and grants between the educational institution and all agencies of the Department, shall be utilized to the maximum extent practicable. Blanket determinations and findings authorizing advance payments under a Federal Reserve letter of credit have provided for twenty educational institutions to use the letter of credit as of October 1, 1971. It is anticipated that additional institutions will be brought under a single Federal Reserve letter of credit payment system.

The letter of credit method of financing was established to permit recipients of Federal funds to draw funds through Federal Reserve banks as needed for program requirements.

#### Auditing of Research Contracts.

5. It is hypothesized that the audit functions of Government audit agencies regarding the auditing of research contracts performed by institutions could be performed by the institutions independent accounting firms.

The Federal Government at the present time, provides audit service of all institutions for the purpose of determining that costs claimed are reasonable, allocable, and allowable

under applicable regulations and terms of the contract. The audits are made in accordance with generally accepted auditing standards and to the extent deemed necessary in the circumstances. The internal control system and accounting practices are reviewed. Particular emphasis is on the receipt and disbursement of cash, recording costs, personnel practices, payroll distribution, purchasing procedures, and property management.

The institutions of higher education will eventually be required to provide the Government with audit coverage of contract costs. At the present time, this function is actually duplicated by the institution and the Government. Independent accounting firms audit the institutions and provide them with detailed financial statements which include the same financial data that the Government requires to support the costs incurred during performance of research or special training contracts. These data may not be in exactly the desired form according to the Government procedures, but the data can easily be adapted to comply with the required reporting. The institutions, at the present time, prepare an indirect cost proposal which is audited by the Government auditors. The costs contained in the proposal may be accepted or not accepted by the Government auditors. Independent audit firms could audit these costs and provide the Government a certification in the same manner they certify financial statements for financial institutions, stockholders, and other interested parties.

The audit objective in the Government review of an educational institution, is to ascertain that costs included in claims and financial reports under Government negotiated cost type contracts are reasonable, fairly presented, appropriately charged or allocated, and determined in accordance with the terms of the contract and applicable regulations. It is the practice of Government auditors to make their audit on a comprehensive basis as contrasted with a contract by contract approach, especially if the university has substantial Government business. The auditor will evaluate the university's policies and procedures and examine selected transactions to the extent necessary to enable him to reach an opinion regarding the accuracy and reliability of the university's records and cost representation.

The Government auditor is primarily concerned with two classes of costs which are incurred during the performance of a research project, these costs incurred are either direct or indirect costs. Direct costs may be defined as those that can be identified specifically with a particular cost objective and indirect costs may be defined as those that have been incurred for common or joint objectives, and are not readily subject to treatment as direct costs of research contracts or other ultimate cost objectives.

The direct costs are usually well defined in the

research contract including any pre-contract or unusual costs which are identified at negotiation and covered in the contract. The indirect costs of an educational institution often present a complex allocation as they must be properly and equitably allocated between the instruction and organized research activities of the institution.

The author of "The Effects of Federal Programs on Higher Education," is in favor of auditors or accountants being specialists in certain areas. He says that "much good would result from the formation of a corps of civil servants within each science agency to specialize in auditing and administering research at educational institutions and build up, over the years, experience with and sympathy for the problems of higher education."<sup>44</sup>

A study group gathered data from thirteen universities, including both public and private institutions, for the purpose of writing the publication, "The Administration of Government Supported Research at Universities," which was issued in March, 1966. The study disclosed when "comparing agencies, diversity of procedure surrounds every aspect of research administration: proposal submission, review process, reporting arrangements, audit practices, etc. The universities visited were unanimous

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<sup>44</sup>Orlons, op. cit., p. 229.

in their request for greater interagency uniformity."<sup>45</sup>

The policy of some Government departments is that the Government auditor is the authorized representative of the sponsoring agency's contracting officer for the purpose of examining reimbursement vouchers received directly from the educational institution. The auditor approves the voucher for provisional payments and transmits them to the Government financial management officer for processing the payment. If the auditor suspends or disallows any cost, he notifies the institution of the action. If the institution disagrees, it may appeal in writing through the auditor to the sponsoring agency's contracting officer who will make his determination in writing to the institution.

The DHEW's policy is somewhat different as the Government auditor acts strictly as an advisor to the sponsoring agency's contracting officer. Reimbursement vouchers are submitted directly to the Government sponsoring agency and all suspensions and disallowances of costs are processed directly between the institution and the sponsoring agency.

The different policies of Government departments, regardless of what may be minor in nature, creates a confusion at the operating level and becomes a concern of auditors

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<sup>45</sup>"The Administration of Government Supported Research at Universities," op. cit., p. 61.

whether they are Government auditors or the educational institution's auditors. If a university is required to comply with different policies of various Government agencies, its internal audit staff is responsible to see that the accounting system is adequate to adapt to the operating needs.

The internal auditor of the university "should be constantly vigilant concerning the adequacy of the system of internal control and should check to see whether the policies of the chief business officer, the president, and the governing board are being constructively obeyed. Included in the functions of internal auditing is a review of business systems and procedures with suggestions for change and improvement."<sup>46</sup>

Sound financial management principles provide for adequate internal control through proper assignment of fiscal responsibilities and a continued review of the procedures. There should be an annual audit by independent accountants. "There are four purposes of the independent postaudit-verification of the accuracy of the financial records, verification of the integrity of the employees of the institution, expert advice on the accounting methods and business practices, and verification of financial statements."<sup>47</sup>

The internal auditor of the educational institution

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<sup>46</sup>Scheps and Davidson, op. cit., p. 342.

<sup>47</sup>Ibid., p. 7.

should have a good working relationship with the external auditor as they are both interested in sound financial management policies and procedures. The cooperation of the internal auditor with the independent auditor will often reduce the time required for the audit, therefore, saving the university audit costs. "Copies of all internal audit reports should be made available to the external auditor."<sup>48</sup>

"The auditor's opinion should follow the standard form recommended by the American Institute of Certified Public Accountants, for reporting on financial statements of commercial enterprises, if the institution maintains its accounts in conformity with generally accepted accounting principles for colleges and universities, as set forth in this volume,"<sup>49</sup>  
"Colleges and University Business Administration."

D. W. Edens, Certified Public Accountant, a partner with Haskins and Sells, wrote a chapter in the "Encyclopedia of Auditing Techniques," entitled "Audit of a University." "The writer believes that generally accepted accounting principles have been clearly defined as to educational institutions and that, therefore, the standard opinion should be used and that no reference need to be made to generally accepted accounting

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<sup>48</sup>"College and University Business Administration,"  
op. cit., p. 217.

<sup>49</sup>Ibid., p. 220.



principles (or practices) for educational institutions."<sup>50</sup>

The U. S. General Accounting Office, on a selective basis, performs audits of contracts at educational institutions. These audits are usually in addition to the audits performed by the sponsoring agency. "Institutions should be aware that an audit by the sponsoring agency of the Federal Government does not necessarily constitute a final audit of the records. The U. S. General Accounting Office reserves the right to audit, within legal retention period, any records pertaining to disbursements by a Federal agency."<sup>51</sup>

The Manager in Charge of the Government Contracts and Grants Department of Peat, Marwick, Mitchell & Co., a CPA national firm, wrote an article for the December 1968 issue of "The Federal Accountant," which points out substantial advantages of the Government using independent auditors. He states that the advantages "include (1) in many cases the independent auditor is already doing work for an organization and has access to existing and independently audited financial data which has been paid for by the entity; (2) duplication in examining by various agencies of Government (federal, state, and local) is reduced when the basic

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<sup>50</sup>Encyclopedia of Auditing Techniques, (Prentice-Hall, Inc., N.J.) p. 1484.

<sup>51</sup>"College and University Business Administration," op. cit., p. 55.

financial statements are independently audited and are accepted by all of them; (3) since independent auditors are geographically disbursed and locally knowledgeable, I believe economies can be realized by using them at the site of the organization rather than dispatching Government auditors from a limited number of field offices; (4) in view of the very rapid increase in the size and scope of many Federal programs, many agencies have experienced difficulty in expanding their audit staff to meet increased demands. Thus, limited manpower can be conserved."<sup>52</sup>

There are five hypotheses presented in this chapter. The next chapter provides the methodology for the research regarding this study.

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<sup>52</sup>The Federal Accountant, (Federal Government Accountants Association, Vol. XVII, No 4, Dec. 1968) pp. 14-15.

## CHAPTER II

### RESEARCH METHODOLOGY

This chapter describes the methods used in the research study of evaluating sound financial management in the institutions of higher education.

#### I. THE IMPORTANCE OF FINANCIAL MANAGEMENT

Sound financial management will simplify and facilitate over-all management when certain key functions are the responsibility of the business office. These functions should include "(a) assistance in the preparation and control of the budget, (b) collection and custody of all institutional funds, (c) handling the funds and properties belonging to endowments, (d) establishment and operation of a proper system of accounting and financial reporting, (e) supervision over the purchasing of supplies and the control over inventories, (f) financial supervision over auxiliary enterprises, (g) supervision over the financial aspects of student organizations and loan funds, and (h) participation in the long-range planning program for the entire institution."<sup>1</sup> The functions as stated are not all primarily related to research contracting in the university,

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<sup>1</sup>Scheps and Davidson, Accounting for Colleges and Universities, (Louisiana State University Press, 1970) p. 5.

but they do establish the importance of financial management to the overall operations of the university. There is evidence that college administrators are seriously handicapped by the necessity of conforming with laws, rules, regulations, and business systems not specifically designed for all of the university's needs. Standard budgeting, accounting, and business systems should be designed, not only to feature a system of check and controls to protect the university against fraud and misuse of funds, but the system should also provide adequate information for efficient financial management.

"Federal research funds make up a substantial part of the operating income of universities. The sheer volume of money affects what they teach, how they teach, and the quality of instruction. A general understanding of the magnitude of Federal research and development expenditures is helpful to an understanding of the total effects of Federal research funds on universities."<sup>2</sup> It is pointed out in most of the books written regarding universities performing Federal research that Federal funds create problems in the realm of financial management. Universities recognize the necessity of Federal research funds and most of them have provided adequate operating procedures. However, "Complicated business

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<sup>2</sup> Charles Kidd, American Universities and Federal Research, (The Belknap Press of Harvard University Press, 1959) p. 39.

affairs have made it necessary to establish special organizations, ranging from sections of existing business offices to research institutes which are in large part autonomous. These offices have been staffed with people who know both university and government business practices. In short, both universities and Federal agencies have adjusted structurally and functionally to rapid and extensive changes."<sup>3</sup> The financial practices and administrative arrangements, that seem to be characteristic of educational institutions, aid in developing the climate in which research can best be performed. However, it is stated that "the administration of the university must understand and foster the conditions under which research of high quality will prosper. In short, a strong research program can exist in a university only if the total environment is favorable, and research funds can provide only parts of that environment."<sup>4</sup>

The revised edition of "College and University Administration," published by the American Council on Education, is used as an operational manual by most institutions of higher education. This publication is referred to by Government auditors in their audit reports as the basis for accepting the university's accounting system. The auditor will accept the accounting system as being adequate for Government contracting

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<sup>3</sup>Ibid., pp. 217-218.

<sup>4</sup>Ibid., p. 59.

if the accounting principles prescribed by the publication are substantially adhered to. The publication states that "the success of the educational programs of a college or university depends in part upon the adequacy of the administration of its business and financial operations. The magnitude of these responsibilities in the administration of budgets and the programs they support requires superior professional training, experience, management skills, and personal qualifications."<sup>5</sup>

Awards for research and other sponsored projects, accepted by institutions of higher education, carry with them responsibilities that have significant implication in the internal administration of the institution. Colleges and universities must accept responsibilities for contract negotiations, management of inventories, the maintenance of accounts and records, the preparation and submission of reports, and compliance with property and security regulations imposed by agencies outside the institution. Both academic and business administrators are involved in developing policies and procedures to meet these responsibilities and to deal effectively with other related problems.

"The business office should have primary responsibility

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<sup>5</sup>College and University Business Administration, (American Council on Education, Wash. D.C.) p. 11.

for contractual negotiation, for accounting and preparation of financial reports, and for the collection of payments from sponsoring agencies,"<sup>6</sup> The authors of "Accounting for Colleges and Universities" state that "the business and financial functions should be centralized in a single business officer responsible to the president. The chief business officer should be appointed by the governing body upon the nomination of the president."<sup>7</sup> The business officer plays a very important role in the management of the university as pointed out by the above quotations from two publications which were published with the purpose of assisting the universities with their business operational problems which definitely include financial management problems.

"Because of the increasing significance of research grants and contracts, separate estimates should be made of the revenues and expenditures related to such agreements. The magnitude of the projects has an important impact on all operating areas, such as plant space, personnel, and position control. Budgets for research operations should be integrated with the regular budget but adjusted during the year as new projects are undertaken and others are terminated. The budgets for research grants and contracts should be brought into the

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<sup>6</sup>Ibid., p. 50.

<sup>7</sup>Scheps and Davidson, op. cit., p. 5.

regular budget, not for control purposes in the same way as for the unrestricted current funds budget, but for a comprehensive view of the total operating activities."<sup>8</sup>

The above quotation contains the term expenditures, which is the actual payment of the costs incurred during the performance of a research contract. There is a general recognition on the part of both Government and university officials that certain restrictions on expenditures are appropriate under research projects as a means of preventing or curtailing the use of public funds for purposes considered to be inconsistent with the Government's goals in entering into a research contract. These restrictions may be applicable to both direct and indirect expenditures.<sup>9</sup>

Common interest in conservation of public funds requires basic principles for the guidance of institutions and Government agencies in the management of public funds allocated to research and special training. A study conducted by the Brookings Institution, known as "The Role of The Federal Government in Financing Higher Education," contains the statement that "no agency can give away public funds without any strings at all, and even the simplest grant instruments include descriptions of what is expected by the recipient, especially

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<sup>8</sup>College and University Business Administration,  
op. cit., p. 159.

<sup>9</sup>Ibid., p. 52.



with respect to accounting and reporting procedures. The grant is usually paid in installments, and the balance may be withheld if the requirements are not met. Contracts tend to be more complicated documents which place more specific obligations on the researcher, but this need not be carried to excess."<sup>10</sup> A study performed by the Office of the Controller General of the United States at one of the large universities, during 1970, revealed that each Federal agency supporting research at the university required periodic submission of a financial report for each contract. Some of the agencies require a report quarterly while others only require them annually. It was found that the financial data, presented in the reports for the various Government agencies, were fairly comparable.

Financial policies and regulations assist institutions of higher education in understanding and adjusting procedures to satisfy necessary Federal policies and requirements. The above statement relates primarily to Circular A-21 issued by the U.S. Office of Management and Budget. The purpose of this Circular is to provide principles for determining costs applicable to research and development under contracts with educational institutions. "The principles are designed to

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<sup>10</sup> Alice M. Rivlin, The Role of the Federal Government in Financing Higher Education, (Brookings Institution, Wash. D.C., 1961) p. 43.

provide recognition of the full allocated costs of such research work under generally accepted accounting principles. The successful application of these principles requires development of mutual understanding between representatives of universities and of the Federal Government as to their scope, implementation, and interpretation."<sup>11</sup>

Mutual financial responsibility is necessary for sound and harmonious financial relationship between institutions of higher education and the Government.

The Government, providing large sums of money to universities for research, has the effect of strengthening the administrative capacity of universities.<sup>12</sup> Government agencies, in exercising their stewardship responsibilities, expect all universities to employ the same sound management practices in administering Federally supported activities as they do in administering activities supported from their own funds.

By any accepted standard of measurement, Government-funded research by educational institutions has become big business. The relationship and complex problems of Government agencies and universities adjusting to the ways of doing business and the adaptability, forbearance, and inventiveness shown by both parties is impressive.<sup>13</sup>

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<sup>11</sup>Circular A-21, Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts with Educational Institutions. (U.S. Office of Management and Budget.)

<sup>12</sup>Kidd, op. cit., p. 170.

<sup>13</sup>Ibid., p. 170.

Most Government agencies prefer to place maximum reliance on the financial controls and requirements universities themselves establish to insure proper management of all their funds, a substantial portion of which is derived from their own operations and investments.

A study of a large university revealed that management of Federally financed research was in harmony with management needs and requirements prescribed by Federal agencies.

The auditing of research contracts, performed by Government auditors or by independent public accounting firms, is assessed in this study as an important financial management role.

It is essential that all educational institutions maintain an internal auditing staff which "serves management by reviewing the accounting, financial, and other operations of the institution. The internal auditor should be under the direction of the chief business officer."<sup>14</sup> The internal audit staff should be independent of any of the operating functions that they are responsible to review and report. The audit report of the internal audit should be available to the university's independent public accounting firm or the state auditor prior to the annual audit of the university.

"The internal auditor, as an employee of the institution

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<sup>14</sup> College and Business Administration, op. cit., p. 216.

provides management with information about whether the business and financial operations are being conducted in accordance with approved policies and procedures. The independent auditor not only examines the accuracy and integrity of the financial reports, but also brings to the business office, assistance, expert advice, and an independent point of view on accounting and fiscal problems."<sup>15</sup>

## II. THE IMPROVEMENT OF FINANCIAL MANAGEMENT

The improving of financial management in the institutions of higher education as it relates to research is the theme of interested Government representatives as well as the university's over-all management.

The Data Sheet of the publication "Management Accounting" contains an article which is entitled "Colleges Resistance to Cost-effectiveness Analysis Scores." The article states that "Many colleges and universities in financially-straitened conditions today are under fire for their failures to use good management and cost accounting techniques. A study sponsored by the Ford Foundation - 'Report on Higher Education' - sharply criticizes universities' widespread resistance to cost-effectiveness analysis as 'profoundly anti-intellectual'. In a recent address, G. Keith Funston, chairman of the Olin Corp., notes that almost every current study of university administration shows that in most of the basic management techniques - in

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<sup>15</sup>Ibid., pp. 219-220.

long-range planning, goal-setting organization, cost-accounting and information processing - most colleges and universities are woefully behind the times. A standard chart of accounts for example, is desperately needed to facilitate unit-cost studies, comparison of results and the establishment of results and the utilization of common data-processing facilities."<sup>16</sup>

The Department of Health, Education, and Welfare issued a brochure titled "A Program for Improving the Quality of Grantee Management." This document is just as applicable as a guideline for institutions of higher education in all of their research projects regardless whether the research is done under a grant or contract. It is stated in the brochure that "management review and evaluation guides for the following systems have been developed: (1) Fiscal Administration; (2) Procurement; (3) Property Management; (4) Personnel; (5) Facilities Management; (6) Planning and Budgeting; (7) Management Information; and (8) Inventories and Patents. These particular systems have been identified for review and evaluation because they comprise an organization's overall management structure and represent fairly distinct activities necessary to the organization's basic functioning."<sup>17</sup> The brochure is the result

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<sup>16</sup>Management Accounting (National Association of Accountants, July 1971) p. 10.

<sup>17</sup>A Program for Improving the Quality of Grantee Management, (U.S. Department of Health, Education and Welfare) p. 3.

of a joint effort of representatives of the Federal Government, State Departments, hospitals, universities, medical schools, and private nonprofit foundations.

The brochure contains a statement made by the Under Secretary of DHEW that "the management evaluation approach provides for varying HEW policy requirements based on the quality of grantee management. I believe it is important that we recognize organizations with management excellence by relaxing our surveillance in certain grants management areas. By the same measure, we must also identify grantees whose management is less than adequate and establish more rigid requirements until the management deficiencies are corrected."<sup>18</sup>

There is a continued effort by Government and university representatives to relax controls, however, Federal guidelines will always be essential to sound financial management.

"The growth of Federal funds in many universities has, of course, produced profound changes in university administrative organization and procedures. Experience has led many universities to develop reasonable sophisticated management systems for their sponsored research activities. However, improvements are still needed."<sup>19</sup>

The Federal Government chooses to support research at

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<sup>18</sup> Ibid., p. Foreword.

<sup>19</sup> The Administration of Government Supported Research at Universities, (U.S. Office of Management and Budget, 1966) p. 38.

universities rather than with other types of institutions in many cases because "historically, university management and faculty self-policing have been adequate to enable the Government-university administrative relationship to be kept reasonably simple. Universities should recognize more fully the importance of both the quality of their business management and the type of professional conduct of faculty members when the university accepts Federal funds."<sup>20</sup> Closer cooperation between university administration and faculty members engaged in Federally funded research can be beneficial both to the university and the Government, there should be a clearer understanding by project directors of their responsibilities when expending Federal funds.

"Federal agencies are limited in what they can do to assist universities in upgrading their internal administration of Federal funds. Essentially, the Government must rely upon the universities and should expect them to take the initiative for improvement if they expect to continue to participate in Government sponsored research."<sup>21</sup>

The universities have a responsibility for improving the management of research funds provided by the Government and the Federal agencies have a "responsibility for providing

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<sup>20</sup> Ibid., p. 38.

<sup>21</sup> Ibid., p. 40.

adequate audit coverage of research programs to insure that public funds have been used in accordance with applicable laws, regulations, agreements, and program objectives. This is an area which requires effective interagency coordination to achieve economy and efficiency as well as improved Government-university relations."<sup>22</sup>

The formulation of financial policies and regulations are essential within the university and the proper interpretation of Federal policies and regulations as they relate to the financial aspects of research sponsored by the Government will aid in improving the image of the financial manager. Administrative "red tape" within the university, resulting from misinterpretation of Governmental regulations or a failure to provide the type of service the researcher needs to aid him in his work, lowers his morale and reduces his productivity. "The growth in funds, together with agency and congressional concern over the effectiveness of research administration, have produced increasing Federal administrative restrictions, regulations, and controls on research grants and contracts."<sup>23</sup>

The U.S. Office of Management and Budget Circular A-21, provides uniform cost principles for Government-wide use. The policies regarding the costing principles and procedures

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<sup>22</sup> Ibid., p. 44.

<sup>23</sup> Ibid., p. 38.



contained in this Circular will, along with the regulations found in the Armed Services Procurement Regulations and the Federal Procurement Regulations, provide the financial guidance needed to maintain a good Government-university relationship.

Circular A-21 is designed to provide a uniform Government-wide approach to determining the costs applicable to research work performed by educational institutions under Federal contracts. If an agency chooses to pay less than the applicable costs, the Circular provides that, "The arrangements for agency and institutional participation in the financing of a research and development project are properly subject to negotiation between the agency and the institution concerned in accordance with such Government-wide criteria as may be applicable."<sup>24</sup> The Circular does make it clear that no provision for profit or other increment above cost is intended. This provision is one of the differences between Government contracts with universities and those with industrial organizations. The latter include a fee or profit which is intended to cover the full return on capital employed in the business. Circular A-21 applies the same principles concerning equity, reasonableness and sound business practices as do the principles applicable to

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<sup>24</sup> Circular A-21, op. cit., p. 1.

industrial concerns but the Circular is tailored to the various characteristics of the educational institutions.

The time lag between the payment of project costs and the reimbursement by Federal agencies, principally under cost-reimbursement contracts, requires universities to use their own funds monthly. Universities maintain that since they are not allowed a fee or interest on such funds, the agencies should advance funds to cover all project costs incurred.

In order to be accepted as direct costs of a Government-sponsored research project, the items charged must conform with certain standards provided in the Circular. In general, these standards require that the goods or services charged directly to an individual project are for the exclusive benefit of the work under the project, e.g., that any material charged was consumed in or applied to the project, and that any service charged, such as the salary of an individual, is based on measured time or effort spent in furtherance of the work under the project. These requirements are mentioned only because they are indicative of the fact that the principles are designed to measure research costs with reasonable precision.

The indirect costs for Federally-sponsored research work is always a subject that is studied and discussed at great length by representatives of Government agencies and universities

when Circular A-21 is revised. The subject is dealt with in some detail in the Circular principles because indirect costs are an important element of total cost. In view of the general interest in the procedure for determining the amount of indirect costs applicable to Government research work, it might be well to explain briefly the general approach and essential considerations involved but omitting the details and technicalities encountered at the various stages of the process.

As a first step, it is necessary to ascertain the total expenses incurred by the educational institution for the operation of all administrative and central or supporting service activities that qualify as "overhead" functions under the Circular A-21. This process involves a screening and recasting of the institution's financial data in order to come up with the total amount of indirect expenses deemed applicable to the various programs of the institution, including Government research. Such indirect expenses are usually categorized under the following headings: (1) general administration and general expenses; (2) research administration expenses; (3) operation and maintenance expenses; (4) library expenses; and (5) departmental administration expenses.

The next step is to distribute the total amount of institutional indirect expense developed among three basic divisions of the educational institution. These three divisions

are defined for the purpose of Circular A-21 as: (1) instruction; (2) research; and (3) other institutional activities. The distributions of indirect expenses to the three divisions are made in a manner designed to approximate relative benefit to the respective divisions as far as ascertainable. For example, the total under the indirect expense category for operation and maintenance is distributed among the three divisions on the basis of the relative amount of space occupied by each. This distribution process establishes the research indirect expense pool, by identifying the portion of the total indirect expense that is deemed to have been generated by research work at the institution. The final step is to establish the indirect cost rate, which is the device used to spread the amount in the sponsored research indirect expense pool among the individual research projects at the institution. The indirect cost rate is established by computing the percentage relationship of the amount in the research indirect expense pool to the total amount of salaries and wages charged directly to all sponsored research at the institution. Each research contract can then be assessed for its share of the total research indirect expense pool by applying the percentage rate to the direct salaries and wages component of the contract.

Each time that Circular A-21 has been revised, it has required intensive study by Government and university

representatives. It is the mutual responsibility of both Government and universities to continue to study the various cost elements applicable to research in order to improve the financial management of research contracting.

There are many complex factors that must be considered if the financial problems of educational institutions are to be viewed objectively. They are better understood when Government and university coordinate in their attempts to acquire equitable solutions regarding costs on Government contracts.

U. S. Office of Management and Budget has issued Circular No. A-88 which "provides policies for coordinating the establishment of indirect cost rates for, and the auditing of, Federal grants and contracts with educational institutions. The objectives are to promote a coordinated Federal approach in these areas and to achieve more efficient use of management."<sup>25</sup> It is stated in the Circular that "one Federal agency may carry out the indirect cost rate negotiation while another may be responsible for the auditing but, wherever possible, the same agency will perform both of these related functions at a single institution."<sup>26</sup>

It is well recognized that mutual financial

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<sup>25</sup>Circular A-88, Policies for coordinating the determination of indirect cost rates and auditing in connection with grants and contracts with educational institutions, (U.S. Office of Management and Budget) p. 1.

<sup>26</sup>Ibid., p. 2.

responsibility is necessary for sound and harmonious financial relationship between institutions of higher education and the Government.

"Continual upgrading of university business and accounting staffs and procedures will lead to more prudent handling of Federal funds, but closer cooperation between university administration and faculty members engaged in Federally funded research can be beneficial both to the university, and the Government. Regardless of the organizational form through which this cooperative endeavor occurs within the university, the objective should be a clearer understanding by principal investigators of their responsibilities when expending Federal funds. The university should strive to strengthen its own role in managing its research enterprise regardless of the source of funds."<sup>27</sup>

The auditing of research contracts performed by Government auditors or by independent public accounting firms is a financial management responsibility.

"As a means for achieving economy and efficiency, and improving Government-university relations, all agencies should coordinate their auditing requirements with the objective of having the audit work at a single institution performed by auditors of one agency for all agencies having research

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<sup>27</sup>The Administration of Government Supported Research at Universities, op. cit., p. 39.

agreements with that institution."<sup>28</sup>

The Assistant Secretary Comptroller, Department of Health, Education, and Welfare wrote an article for the "Federal Accountant" titled "Increasing Use of CPA's by the Federal Government" in which he stated that "the Federal Government has recognized the contribution of independent audits and increased reliance has been placed on such audits. The avoidance of unnecessary duplication of audits between Federal and State or local agencies was the subject of a recently-announced Government wide policy which stated in part 'While the Federal Government cannot automatically accept audits performed by a representative of the grantee, maximum use should be made of audits performed by the grantees' internal or independent auditors, so as to avoid unnecessary duplication by Federal auditors.' This new policy holds great promise for the future. We are at the threshold of a new era in the relationship of the Government to its people and its institutions. The new will emerge from the traditional strengths of our country. Certified public accountants have an important role to play in this process. All of our efforts up to now to improve financial management for recipients of Federal funds are really just pilot projects. The real breakthrough is yet to come, and the prospects are exciting."<sup>29</sup>

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<sup>28</sup> Ibid., p. 45.

<sup>29</sup> Increasing Use of CPA's By The Federal Government, (The Federal Accountant, Vol. XVI, No. 4, Dec. 1967) p. 85.

This chapter, so far, has given emphasis to data relating to the importance and improvement of financial management as found in the literature. The various aspects of the current research of the study will conclude this chapter.

### III. THE CURRENT RESEARCH

The current research encompasses various steps carried out in sequence for the purpose of verifying and evaluating the hypotheses as related to sound financial management.

#### Interviewing Members of Certified Public Accounting Firms.

The first step explored was to conduct personal interviews with members of Certified Public Accounting firms.

Twenty CPA firms were selected from Montgomery County, Maryland. The firms were selected from the 1971 Annual Register, Certified Public Accountants and Public Accountants of the State of Maryland. The firms selected were convenient to the researcher for conducting personal interviews but did in fact represent all of the CPA firms located in Montgomery County, in the Washington, D.C. metropolitan area.

The twenty firms were listed in alphabetical order and a twenty five percent random sample chosen by starting with the second firm listed. (It is recognized that this is not a true probability sample since the 2nd, 6th, 10th, 14th,



and 18th firms listed had a 100 percent probability of being selected and the other firms no probability but since the starting point, the 2nd listed firm, was chosen from a table of random numbers the approximation to a probability sample was seen as being sufficient for the research purpose.) A senior member of the selected firms was telephoned to arrange a personal interview. However, during phone conversations with each of the individuals called, it was determined that none of the firms contacted had audit or accounting experience with educational institutions, therefore, they were unable to comment on the merits of the financial management at educational institutions.

Several of the accountants called volunteered that all of the area educational institutions are audited by so-called national accounting firms and in the case of one of the universities, audit is conducted by the State of Maryland. The local offices of the national accounting firms consider information regarding their clients to be privileged and refer all inquiries to the educational institutions.

On the basis of the information obtained, it was decided that personal interviews with members of the other CPA firms would not provide beneficial information regarding financial management at educational institutions. Thus this phase of the study was eliminated.

Discussions with Government Auditors and Government Procurement Personnel.

The second research step was to discuss the study of financial management in institutions of higher education with Government auditors and procurement personnel.

The auditors advised that they perform their audits in accordance with prescribed Government regulations and procedures and base their audit findings on those regulations and procedures. No overall financial management review is made at this time. They said that the prime objective of their review is to determine whether administrative and financial internal controls are adequate to insure proper accounting for and reporting of the funds provided and that the expenditures were incurred only for purposes of the research projects and in accordance with applicable agency regulations and terms of the contract. They concurrently examine the accounting procedures and system of internal control to determine the adequacy of the university's management policies and decisions affecting costs. The auditors also advised that examination was performed on a selective basis in accordance with generally accepted auditing standards and included tests of the accounting records and a review of the internal control and such other auditing procedures as are considered necessary in the circumstances.

According to the auditors, the universities are not

required to follow any particular accounting system and if the university under audit has complied with Government Manuals and the various Circulars which identified research cost by projects, the costs were accepted. The auditors perform what is known as a comprehensive audit of most universities. This is basically an audit of the universities accounting procedures. If the procedures are acceptable then all the contracts completed during the period of the audit are considered acceptable for closing.

The study was also discussed with Government procurement personnel in the Department of Health, Education and Welfare who advised that they negotiate and administer research contracts with universities according to regulations and procedures found in the Federal Procurement Regulation. The section that primarily concerns the financial management aspects of research contracts with educational institutions is Section 15-3. Government procurement personnel are usually assisted by Government financial management personnel in most research procurement with institutions of higher education.

Procurement personnel, particularly the contracting officer, is responsible for the business evaluation. This normally centers around cost analysis and analysis of the university's financial strength and management capability. Elements considered in cost analysis generally include

direct material and labor costs, subcontracting, overhead rates, general and administrative expense, travel costs, etc. Elements considered in evaluating the university's financial strength and management capability include organization, past performance or similar contractual efforts, reputation for reliability, availability of required facilities, cost controls, accounting policies and procedures, purchasing procedures, personnel practices, property accounting and control, and financial resources.

The university must provide evidence and supporting documentation for an adequate business evaluation either prior to or during negotiation of the contract.

#### Inquiries Mailed to Accounting Associations.

The third step was to mail letters to three national accounting associations requesting information as to available publications and research studies regarding the financial management in institutions of higher education.

The American Institute of Certified Public Accountants replied that there is no AICPA literature on the subject. The Institute made the following suggestions: (1) request information from the Department of Health, Education, and Welfare; and (2) request information from the National Association of College and University Business Officers.

The American Accounting Association replied that they have only a small administrative office without a large research staff, therefore, they are unable to delve deeply into the subject or offer much assistance. The Association did suggest that past issues of "The Accounting Review" be reviewed for articles and book reviews.

The National Association of Accountants responded that they have no publications dealing directly with the particular subject being investigated. The Association suggested, because the topic is very specialized, that contact be made with organizations involved in this type of work such as M.I.T. and the Rand Corporation.

Most of the suggestions submitted by these organizations were investigated and found to be helpful.

#### The Questionnaire Pretest.

The fourth step was the pretesting of the questionnaire. Based on the earlier steps a two page questionnaire was designed and then pretested by mailing it to six universities which included three private and three public schools. These universities are located in Illinois, Massachusetts, New Jersey, New York, North Carolina, and Virginia.

Response to this questionnaire was excellent. Five of the six universities returned completed questionnaires within two weeks. A follow-up letter was mailed to the remaining

university, however, the completed questionnaire was received the day after the follow up letter was mailed.

Each of the questions in every questionnaire was completed. No questionnaire was answered inappropriately and none of the universities indicated any difficulty in answering the questionnaire. Based on this strong evidence the original instrument was adopted without modification to serve as the mainstay of the mail survey. It should also be noted that fifty percent of the universities in the pretest expressed an interest in receiving a copy of the completed study.

#### Mailed Questionnaires to Universities.

The fifth step was the mailing of questionnaires to selected universities to obtain essential data for the study.

The universe used for the sample included both public and private educational institutions located throughout the United States. This universe is found in a listing prepared by the National Center for Educational Statistics, Office of Education, Department of Health, Education and Welfare.<sup>30</sup> The list includes a total of one hundred and sixty universities of which ninety five are public and sixty five are private. The public universities include State and Federal schools and the private universities include independent

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<sup>30</sup>Opening Fall Enrollment in Higher Education 1970, (The National Center for Educational Statistics, Office of Education, Dep't. of Health, Education, and Welfare, Wash., D.C.) pp. 29-80, Table 5.

non-profit and church affiliated schools.

The one hundred and sixty universities are listed alphabetically by states and include student population ranging from 3,121 to 74,125. Forty one universities, which represent twenty five percent of the total universe, were selected to be sampled. The forty one universities were divided into two strata, the public and private schools. Every third private and every fifth public university was systematically selected for the sample. Starting with the first listed (as determined by a random number table) the selection of every third private and every fifth public university is based on the ratio of 22 to 65 private and 19 to 95 public universities. From the total 160 universities, 22 private and 19 public universities were selected as the recipients of questionnaires for the research survey.

#### Review of Final Audit Reports from Files.

The sixth step somewhat relates to the second step, "Discussion with Government Auditors" and the fifth step, "Mailed Questionnaires to Universities."

A review was made of final audit reports reporting costs incurred for the period of performance under cost reimbursement Government research contracts with thirty universities. The reports reviewed were those submitted by several

Government audit agencies and taken from the files of an agency within the Department of Health, Education and Welfare. The audit reports were submitted within the past two years and final payments were made to the applicable university based on the report, therefore, they are considered representative of all final audit reports of acceptable costs incurred during performance of research contracts with universities.

The thirty audit reports consisted of fourteen public and sixteen private schools and included those with large as well as those with small student populations. They are geographically located throughout the United States.

#### The Questionnaire.

The questionnaire, used in this survey, contained eighteen items requiring the respondent to check an applicable blank space and one item for comments including any desired criticism (see appendix). The length of the instrument was two pages. It was mailed to individuals by name and position title. These questionnaires were mailed to forty one universities which consisted of nineteen public and twenty two private universities. To secure the attention of a top member of the financial staff of each university, the initial questionnaires were mailed with a covering letter signed by



the dissertation advisor.

The questionnaire and covering letter, along with a self addressed stamped envelope, was mailed in a nine by twelve white envelope which was preprinted with the researcher's name, certified public accountant, and address in the upper left hand corner. The same size and color envelope, with the researcher's name, etc. preprinted was used for the questionnaire replies.

A total of twenty seven replies were received from the initial mailing. Twelve public and fifteen private universities responded. The universities responding were 63 percent of the public and 68 percent of the private for 66 percent of the total number surveyed.

Two weeks after the initial mailing, a follow up of the same questionnaire was mailed with a covering letter signed by the researcher to those universities which had not responded. There were six additional replies, two from public and four from private universities. This was 80 percent of the questionnaires, 74 percent from public and 86 percent from private schools.

Two and one half weeks after the first follow up, a second follow up letter was mailed to those universities that had not replied. Three additional public universities submitted

completed questionnaires.

The total number of questionnaires from the forty one universities was thirty six, seventeen from public schools and nineteen from private schools or 89 percent public and 86 percent private for an overall percentage of 88 percent.

The questionnaires were fully completed by thirty five universities and one university stated that they did not perform research for the Government. Two public and three private universities did not respond even after the second follow up, however, there is no indication that those universities were essentially any different than those that did respond. It was verified that all five non-responding universities perform research for the Government.

Each covering letter to the universities and the second follow up letter stressed that all replies are strictly confidential, are for the purpose of the doctoral study, and will be presented only in statistical form. Within the thirty five completed questionnaires, all questions were answered and some expressed their interest by requesting copies of the completed study. The researcher feels that he received excellent cooperation from the administrators of the universities.

The first two chapters presented the research problem and the steps used in the study of evaluating sound financial

management in the institutions of higher education. In the following chapter, an analysis of the findings regarding the study is presented.

## CHAPTER III

### RESULTS: PROBABILITY SURVEY

The previous two chapters presented the research problem, the theoretical material, and the methodology including the sampling processes used in the investigation of sound financial management in institutions of higher education as related to Government negotiated research contracting. The prior two chapters also stated the five hypotheses which formulate the research study.

This chapter contains an analysis of the variables found in the mail questionnaire. The findings are discussed in more detail in Chapter V.

#### 1. FINANCIAL MANAGEMENT IN INSTITUTIONS OF HIGHER EDUCATION AIDS IN DEVELOPING THE CLIMATE IN WHICH RESEARCH AND SPECIAL TRAINING CAN BEST BE PERFORMED

##### Research Agreements and Projects.

The research discloses that funding for Government research performed at universities is provided through the use of both grants and contracts. Only one out of thirty six universities responding to the survey performs no research for the Government through the grant and contract mechanism. Of the thirty five performing research for the Government, all have contracts and 97 percent (34) have grants. By

Government agency all of the public and 94 percent of the private universities have either research grants or contracts with DHEW; 87 percent of the public and 90 percent of the private currently do research for DOD; and 94 percent of the public and 90 percent of the private do research for some other Government agencies.

There is only a minor difference between the number of public and private universities performing research for the Government, however, it is worth noting that about 10 percent more universities perform research for the civilian agencies than for the defense agencies. This is primarily due to the type of research usually performed by universities which is of a non-defense nature.

#### Independent Management Advisory Service.

Management advisory service has become an essential function of many independent accounting firms. In addition to auditing the fiscal records, the service encompasses over-all financial management review. This provides management with important financial information and a sound basis for entering into contract and grant negotiations.

Thirteen of thirty five universities responding to the questionnaire had management advisory services. Fifty percent of the private institutions avail themselves of the service

while less than one half of that percentage or 24 percent of the public institutions have advisory service. A chi square analysis shows this difference to be non-significant at a .05 level of confidence despite a ratio of 2 to 1 of private to public universities.

#### Staff Training for Financial Management.

Staff training, in the field of financial management, is being encouraged in most Government agencies and within many organizations, industries, and large businesses.

The current analysis of the universities responding to the survey revealed that 31 percent have some form of staff training. Forty four percent of the private and 18 percent of the public institutions have a staff training program. It is realized that the quality and degree of training will vary greatly from university to university.

#### Summary.

An analysis of the first two variables, types of research agreement and the Government agencies that the research projects are with, only reflect minor differences between public and private universities. Variable three, independent management advisory service shows a ratio of 2 to 1 in favor of private universities over public ones. The final variable, staff training for financial management,

TABLE 2

COMPARISON OF 17 PUBLIC AND 18 PRIVATE UNIVERSITIES WITH  
RESPECT TO TYPE OF RESEARCH AGREEMENTS, FUNDING  
AGENCIES, MANAGEMENT ADVISORY SERVICE, AND  
STAFF TRAINING

University Characteristic	Total		Public		Private	
	Number	Percent	Number	Percent	Number	Percent
Research Agreement: <sup>a</sup>						
Contracts	35	100	17	100	18	100
Grants	34	97	16	94	18	100
Research Projects With: <sup>a</sup>						
DHEW	34	97	16	94	18	100
DOD	31	88	15	88	16	90
Other Agencies	32	91	16	94	16	90
Independent Management Advisory Service:						
Yes	13	37	4	24	9	50
No	22	63	13	76	9	50
Total	35	100	17	100	18	100
Staff Training for Financial Management:						
Yes	11	31	3	18	8	44
No	24	69	14	82	10	56
Total	35	100	17	100	18	100

<sup>a</sup>The same university may have contracts and grants with Government agencies. They may also perform research for more than one Government agency during the same period.

shows a 2 to 1 ratio that private schools provide training in the field of financial management.

The study has shown that Government sponsored research is performed by almost all institutions of higher education. However, utilization of management advisory service and provision for staff training appear to be areas where many universities can improve and thus foster a better climate in which research may be performed.

## II. INSTITUTIONS OF HIGHER EDUCATION AND THE GOVERNMENT HAVE A COMMON INTEREST IN ASSURING THE CONSERVATION OF PUBLIC FUNDS

### Type of Accounting System.

The survey of the institutions of higher education verifies that they have integrated ADP and computers into their accounting systems. Ninety four percent of universities performing Government research had automated accounting systems. This percentage is constant for both the public and the private universities. Automated accounting systems are highly desirable since their presence makes financial information readily available both to management and Government agencies.

### Indirect Cost Proposals Reviewed by Accounting Firms.

The survey also revealed that a large percentage of the universities do not have indirect cost proposals reviewed



by their accounting firms. Eighty eight percent of the institutions do not have the proposals reviewed. However, eleven percent more of the private than the public universities do have a review performed. The indirect cost is contained in the grant or contract proposal, therefore, accurate reporting to Government agencies is essential to obtain an equitable and accurate indirect cost rate.

Maintains Individual Accounts for Research Costs.

The Government does not prescribe any particular accounting system for universities performing research but it does require that the system is adequate for accumulating costs for all research projects.

The survey shows that all universities maintain individual accounts for accumulating research costs. This meets the Government's requirement.

Summary.

The first variable, type of accounting system, does not show any difference between public and private universities. Variable two, indirect cost proposals reviewed by accounting firms, shows that 11 percent more private than public universities have the indirect proposals reviewed and the percentage of universities having their proposals reviewed is an overall 12 percent.

TABLE 3

COMPARISON OF 17 PUBLIC AND 18 PRIVATE UNIVERSITIES WITH  
RESPECT TO TYPE OF ACCOUNTING SYSTEMS, INDIRECT  
COST PROPOSAL REVIEW, AND RESEARCH COST  
ACCOUNTS

University Characteristic	Total		Public		Private	
	Number	Percent	Number	Percent	Number	Percent
<b>Type of Accounting System:</b>						
Automated	33	94	16	94	17	94
Manual	<u>2</u>	<u>6</u>	<u>1</u>	<u>6</u>	<u>1</u>	<u>6</u>
Total	35	100	17	100	18	100
<b>Indirect Cost Proposal Reviewed by Accounting Firm:</b>						
Yes	4	12	1	6	3	17
No	<u>31</u>	<u>88</u>	<u>16</u>	<u>94</u>	<u>15</u>	<u>83</u>
Total	35	100	17	100	18	100
<b>Maintains Individual Accounts for Research Costs:</b>						
Yes	35	100	17	100	18	100
No	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	35	100	17	100	18	100

An analysis of variable three discloses that public and private universities are uniform and consistent in their accounting for research cost.

The findings indicate that institutions of higher education and the Government have a common interest with respect to the type of accounting systems and the maintaining of individual accounts for research costs as these areas reflect sound financial management. However, the lack of indirect cost proposals being reviewed by accounting firms shows need for improvement. There could be a conservation of time by having the proposal reviewed by the accounting firm prior to submission to the cognizant Government agency. This variable will be discussed more fully in a subsequent chapter.

### III. FEDERAL GOVERNMENT FINANCIAL POLICIES AND REGULATIONS, AS THEY PERTAIN TO UNIVERSITIES, ARE PROVIDED TO ENCOURAGE MAXIMUM REALIZATION OF RESEARCH AND SPECIAL TRAINING PROJECTS

#### Costing Methods - Depreciation or Use Charge.

The findings of the mail survey establishes that both public and private universities prefer the use charge rather than depreciation to recover costs for the use of their buildings, capital improvements, and useable equipment. Ninety one percent of the institutions prefer the use charge. Comparing the public and private universities, the percentage

is 88 and 94 respectively.

Title to Research Property Transferred at Negotiation.

The question asked the universities surveyed was if they request Government agencies to vest title of property acquired with Governmental research funds at the time of negotiating the contract. Forty six percent of the universities responded that they do request research property to be transferred to them at the negotiation. Sixty one percent of the private and thirty percent of the public universities request transfer of title at the time of the negotiation.

Government Financial Regulations and Procedures are Uniform and Consistent.

The universities sampled do not acquiesce that regulations and procedures established by the Government relating to financial aspects of research contracts to be uniform and consistent. Sixty six percent of the universities do not think they are uniform, but, on this point, there is a difference of opinion between the public and private universities. Eighty two percent of the public and fifty percent of the private do not find the regulations to be uniform. Chi square analysis shows  $p$  to equal .05 but less than .02 and the ratio is 3 to 1 that private universities accept the regulations as being uniform and consistent.

### Summary.

The findings show a definite preference for the use charge rather than depreciation as an indirect cost.

There is a wide variance between the public and private universities as to the title to research property being transferred at negotiation. The difference indicates that private universities have more interest in obtaining the research equipment.

There is also a considerable variance between the public and private universities regarding uniform Government regulations. The ratio is 3 to 1 for the private universities.

The sampling reflects a consensus that both public and private universities and the Government are in accord with the treatment of recovering cost for use of buildings, equipment, etc., however, there is a difference of opinions regarding the transfer of title of research property and whether Government regulations and procedures are uniform and consistent. This difference will be further discussed in a subsequent chapter.

#### IV. THERE IS A MUTUAL FINANCIAL RESPONSIBILITY OF INSTITUTIONS OF HIGHER EDUCATION AND THE FEDERAL GOVERNMENT AS RELATED TO NEGOTIATED RESEARCH CONTRACTS

### The Use of Predetermined Indirect Cost Rates.

The sampling of the universities shows similarity in

TABLE 4

COMPARISON OF 17 PUBLIC AND 18 PRIVATE UNIVERSITIES WITH  
RESPECT TO COSTING METHODS USED, TRANSFER OF  
RESEARCH PROPERTY TITLE, AND UNIFORMITY  
OF GOVERNMENT FINANCIAL REGULATIONS

University Characteristic	Total		Public		Private	
	Number	Percent	Number	Percent	Number	Percent
<b>Costing Method Used:</b>						
Depreciation	3	9	2	12	1	6
Use Charge	<u>32</u>	<u>91</u>	<u>15</u>	<u>88</u>	<u>17</u>	<u>94</u>
Total	35	100	17	100	18	100
<b>Title to Research Property Transferred at Negotiation:</b>						
Yes	16	46	5	30	11	61
No	<u>19</u>	<u>54</u>	<u>12</u>	<u>70</u>	<u>7</u>	<u>39</u>
Total	35	100	17	100	18	100
<b>Government Financial Regulations and Procedures are Uniform and Consistent:</b>						
Yes	12	34	3	18	9	50
No	<u>23</u>	<u>66</u>	<u>14</u>	<u>82</u>	<u>9</u>	<u>50</u>
Total	35	100	17	100	18	100

all the universities as well as the comparability of the public and private institutions in the use of predetermined indirect cost rates. The universities are almost equally divided and the ratio between the public and private universities is nearly equal.

Receipt of Payment from the Government.

The period of time between submission of a contract cost voucher and receipt of payment from the Government varies only slightly between the public and private universities. The analysis shows that 41 percent of the payments are received within 30 days, 41 percent received within 60 days, and 18 percent received within 90 days according to the public universities, and 44 percent received within 30 days, 44 percent within 60 days, and 12 percent within 90 days according to the private universities.

Assist in Preparation of Proposal Budget.

The cost budget submitted with a research proposal contains the items of cost relating to the research project. A question was included in the sampling which stated, "Are you or a member of your staff consulted at the time the budgets for proposed research contracts are formulated?" Sixty six percent

of the universities answered ALWAYS, while 34 percent answered SOMETIMES. In comparing the public and private universities, it was found that 60 percent public and 72 percent private answered ALWAYS and 40 percent public and 28 percent private answered SOMETIMES.

#### The Use of the Letter-of-Credit.

The single letter-of-credit is a method of reimbursing the universities for cost incurred under research contracts. Sixty six percent of the universities are using the letter-of-credit. Seventy percent of public and 61 percent of the private are being reimbursed under the letter-of-credit. The ratio of public to private universities is 12 to 11.

#### Summary.

The first variable, the use of predetermined indirect cost rates, shows no difference between public and private universities.

The second variable, receipt of payment from the Government, indicates very little difference between public and private universities as to the period of time in being reimbursed for cost incurred under research contracts.

The third variable, assist in preparation of proposed budget, shows that 12 percent more private than public



universities are always consulted at the time budgets for proposed research contracts are formulated.

The use of the letter-of-credit as reflected in the fourth variable shows a ratio of 12 to 11 in favor of the public universities, however, this is not a significant difference.

The responses to the four variables in Table 5 establishes that there is mutual financial responsibility of educational institutions and the Government as related to research contracts. However, additional clarification is essential to fully evaluate the mutual financial relationship.

V. THE AUDIT FUNCTIONS OF THE GOVERNMENT AUDIT AGENCIES  
REGARDING THE AUDITING OF RESEARCH CONTRACTS  
PERFORMED BY INSTITUTIONS COULD BE  
PERFORMED BY THE INSTITUTION'S  
INDEPENDENT ACCOUNTING FIRMS

Engagement of Independent Accounting Firms.

The survey of the universities included a question regarding whether or not they engage an independent accounting firm to audit their records.

The response of the thirty five universities performing research for the Government and responding to the inquiry specify that 66 percent engage accounting firms while 34 percent do not. However, when comparing the public and private

TABLE 5

COMPARISON OF 17 PUBLIC AND 18 PRIVATE UNIVERSITIES WITH RESPECT  
TO PREDETERMINED INDIRECT COST RATES USED, RECEIPT OF  
PAYMENT FROM THE GOVERNMENT, ASSIST IN PREPARATION  
OF PROPOSAL BUDGET, AND USE OF LETTER-OF-CREDIT

University Characteristic	Total		Public		Private	
	Number	Percent	Number	Percent	Number	Percent
<b>Predetermined Indirect Cost Rates are Used:</b>						
Yes	18	52	9	53	9	50
No	17	48	8	47	9	50
Total	35	100	17	100	18	100
<b>Receipt of Payment from the Government:</b>						
30 Days	15	43	7	41	8	44
60 Days	15	43	7	41	8	44
90 Days	5	14	3	18	2	12
Total	35	100	17	100	18	100
<b>Assist in Preparation of Proposal Budget:</b>						
Always	23	66	10	60	13	72
Sometimes	12	34	7	40	5	28
Total	35	100	17	100	18	100
<b>Letter-of-Credit is Used:</b>						
Yes	23	66	12	70	11	61
No	12	34	5	30	7	39
Total	35	100	17	100	18	100

universities, it is found that 94 percent of the private and 35 percent of the public institutions engage independent accounting firms. A chi square analysis shows  $p$  to be .001. This is a ratio of about 3 to 1 for the private institutions. Some of the variation between public and private is to be expected since many of the public universities are audited by state auditors or by a central audit office of church affiliated schools in lieu of independent accounting firms.

#### Number of Government Audit Agencies Auditing Cost Records.

The survey shows that twenty eight out of thirty five or 80 percent of the universities have their research contract cost records audited by one Government agency. However, when comparing the public and private universities, it is found that 94 percent of the public but only 67 percent of the private universities are audited by one Government agency. The analysis shows 33 percent of the private and 6 percent of the public institutions have two Government agencies auditing their records.

#### Cost Records Audited by Government Auditors.

An analysis of the responses received from the thirty five universities completing the questionnaire shows twenty five universities are audited annually, seven are audited

biennially, and three audited every three years by Government auditors. A comparison of the public and private universities shows ten public and fifteen private audited annually; five public and two private audited biennially; and two public and one private audited every three years.

Cost Records Audited and Indirect Cost Negotiated by Same Agency.

In response to the question, "Does the same Government agency audit the costs of research agreements and negotiate the indirect cost rates?", thirty two of the thirty five universities completing the questionnaire responded positively. Sixteen out of seventeen public and sixteen out of eighteen private universities answered YES to the question or 94 percent for public and 90 percent for private.

Summary.

The first variable shows a larger percent of private universities engaging independent accounting firms. There is a ratio of a 3 to 1 variable between private and public institutions.

The second variable shows there is a ratio of 4 to 3 that one Government audit agency audits the cost records of the public institutions. Eighty percent of the total univer-

sities sampled are audited by one audit agency.

The third variable shows 71 percent of the universities audited annually and 20 percent biennially.

The fourth variable provides that one Government agency audits the costs and negotiates the indirect cost rates for 91 percent of the universities sampled. No significant difference exists between public and private universities.

TABLE 6

COMPARISON OF 17 PUBLIC AND 18 PRIVATE UNIVERSITIES WITH RESPECT  
TO ENGAGING INDEPENDENT ACCOUNTING FIRMS, AUDIT OF  
COST RECORDS, AND NEGOTIATION OF INDIRECT COST  
RATES

University Characteristic	Total		Public		Private	
	Number	Percent	Number	Percent	Number	Percent
<b>Engage Independent Accounting Firms:</b>						
Yes	23	66	6	35	17	94
No	<u>12</u>	<u>34</u>	<u>11</u>	<u>65</u>	<u>1</u>	<u>6</u>
Total	35	100	17	100	18	100
<b>Number of Government Audit Agencies Auditing Cost Records:</b>						
One	28	80	16	94	12	67
Two	<u>7</u>	<u>20</u>	<u>1</u>	<u>6</u>	<u>6</u>	<u>33</u>
Total	35	100	17	100	18	100
<b>Cost Records are Audited by Government Auditors:</b>						
Annually	25	71	10	60	15	83
Biennially	7	20	5	30	2	11
Other	<u>3</u>	<u>9</u>	<u>2</u>	<u>10</u>	<u>1</u>	<u>6</u>
Total	35	100	17	100	18	100
<b>Cost Records Audited and Indirect Cost Negotiated by Same Agency:</b>						
Yes	32	91	16	94	16	90
No	<u>3</u>	<u>9</u>	<u>1</u>	<u>6</u>	<u>2</u>	<u>10</u>
Total	35	100	17	100	18	100

## CHAPTER IV

### RESULTS: FINAL AUDIT REPORT EXAMINATION

The previous chapter presented tables and analysis for five hypotheses formulating the study of sound financial management in institutions of higher education. The basis of the contents of the previous chapter was responses from a selected sampling of universities.

The focus of this chapter is on the findings in final audit reports. The reports examined are the results of auditing the costs applicable during the period of the research contract. The technical aspects of the contract have all been satisfactorily performed and accepted by the sponsoring Government agencies. Based on these audit reports, final payments were made by the Government to the university.

This review will aid in either accepting or rejecting some of the concepts of financial management as previously presented.

#### Audit Exception to Accounting System.

It is essential that auditors include a statement in their report regarding the university's accounting system. Twenty nine out of the thirty universities' audit reports

examined had acceptable accounting systems for accumulating cost for cost-reimbursement research contracts.

The one university that the auditor found to be an exception does not have an accounting system which provides for the recording of expenditures by element of cost for Federal grants and contracts. The university which did not meet the Government's requirement for accumulating cost has an automated accounting system and is a public university.

In cases where auditors report an exception to the acceptability of the accounting system, the sponsoring Government agency usually makes an administrative determination by further reviews or other examination to justify the amount of acceptable cost.

The university is required to improve its system to provide auditable records to support all costs claimed for the performance of the research project.

#### Audit Exception to Direct Cost.

The examination of thirty final audit reports, submitted by Government auditors, of fourteen public and sixteen private universities disclosed that exceptions of direct cost were taken for two universities. One of the exceptions regarded the disallowance of a small amount of cost claimed by a private university. The disallowance was so minor that no



administrative action was necessary.

The other exception was disallowed cost due to an "overrun" of cost on a research contract performed by a public university. An "overrun" is costs incurred during the performance of a contract but is excessive of the amount negotiated and written into the contract for the research project. According to Government regulations, the university must notify the contracting officer of the sponsoring Government agency that the funds negotiated are inadequate to complete the required performance of the research project. If there is a timely notification before the completion of the contract, the contracting officer may modify the contract to provide for the excessive costs. The Government is not obligated to reimburse the university unless proper notification is given by the university.

An "overrun" can be quite detrimental to a university since the costs may not be reimbursed and it may be necessary to obtain funds from other sources than research for the amount of the "overrun." A sound financial management system will provide adequate safeguards to prevent this happening.

#### Audit Exception to Indirect Cost.

The indirect cost element provided in the final audit reports for research contracts in fourteen public and sixteen

private universities was examined and found that there were seven exceptions taken to acceptable actual indirect cost. Five public and two private universities had the exceptions reported. One exception regarded a fixed indirect cost amount in a research contract with a public university. A fixed determined amount of indirect cost based on the scope of work was negotiated in lieu of an indirect cost rate. The amount was payable in equal monthly increments. During the period of performance, the scope of work was reduced, therefore, the fixed amount of indirect cost was overstated. The university claimed the total amount of the fixed indirect cost despite the reduced scope of work. The error came to light when the auditor applied the university's applicable indirect cost rate to the services performed.

Under a cost reimbursement type contract, the university is reimbursed for direct and indirect cost actually incurred during the period of the contract. In this specific case, the university had claimed an amount in excess of the costs incurred, therefore, an administrative determination was necessary.

There was also another exception where a public university did not claim full indirect cost based on its negotiated final rate. The university accepted the provisional rate in closing the contract. The final indirect cost rate is

the rate negotiated between the Government and the university for the university's fiscal year and is applicable to all research contracts performed within the year. A provisional rate is a rate that has been agreed upon between the Government and the university for the purpose of claiming indirect cost prior to a final rate being negotiated. Usually the indirect cost amount is adjusted by applying the final rate when the rate has been negotiated. In this case, the university accepted indirect cost based on the provisional rate rather than the final rate. The final rate was greater, therefore, the university was not reimbursed for all of its indirect cost.

According to the auditor, the university frequently signs a release for the amount claimed without computing an additional amount due for indirect cost. This is in the nature of cost sharing by the university and should be fully approved by the financial management office since total cost is not being recovered and other sources must provide the cost not recovered.

The other five exceptions reported for two private and three public universities regarded limitations on indirect cost rates or what is commonly known as "ceiling rates." The universities accepted a provision that the indirect cost rate would not exceed a stipulated rate in the contract for the period of the contract. The indirect cost reimbursed by

the Government may not exceed the stipulated rate regardless of the final rate negotiated. In each of the cases examined, the final rate exceeded the stipulated rate by a substantial increased percentage. The universities were not reimbursed for their total indirect cost.

"Ceiling rates" are often written in to a research contract without the knowledge of the university's financial management office. Financial management officers must be aware of this arrangement since this is sharing the cost of the research project which may provide a financial deficiency as the amount of indirect cost not recovered must be provided from other sources.

#### Negotiated Indirect Cost Rates.

The thirty final audit reports examined, consisting of reports of fourteen public and sixteen private universities, disclosed that the fourteen public universities used three different methods for deriving indirect cost rates; seven used final rates, six predetermined rates, and one a fixed rate. The sixteen private universities also used three different rates; ten used final rates, four predetermined rates, and two fixed rates.

The indirect cost rate used by universities is the ratio between the total indirect cost and some direct cost

base, usually direct salaries and wages but occasionally total direct costs exclusive of capital expenditures, etc. is used. Of the thirty universities' audit reports examined, twenty nine used the salary and wage base.

The final indirect cost rate used by the seven public and ten private universities is established after the universities' actual costs for a given accounting period, usually their fiscal year, are known. Once established, the final rate is not subject to adjustment. The final indirect cost rate is used to adjust the indirect cost amount which was claimed on public vouchers using a provisional indirect cost rate.

The provisional indirect cost rate is a temporary rate established, usually the university's last final rate, to allow the obligation and payment of indirect cost prior to establishing a final rate.

The predetermined indirect cost rate used by six public and four private universities is a fixed rate negotiated and agreed to for a specified future period, usually a year. Except in unusual circumstances, the rate is not subject to adjustment. Some universities object to the predetermined rate because of fluctuation of their indirect cost regardless of the expediency of closing the research contract.

The fixed indirect cost rate used by one public and two private universities is a rate with a carry-forward provision which has the characteristics of both the provisional and predetermined rate. A rate is established and fixed for a specified future period. It is not subject to adjustment for the period specified. However, after the end of that specified period, if the actual rate varies from the fixed rate and the variation results in an over or under recovery of indirect costs, the difference is carried forward as an adjustment to the next period for which a rate is established. This method of establishing an indirect cost rate is the most recent one mutually agreed to by Government and universities. This method will probably be used more frequently in the future.

The Standard Auditors Statement.

One public university's final audit report, of fourteen public and sixteen private universities' reports examined, contained a qualification statement by the auditor. If there are no major exceptions to the claimed costs incurred during performance of a research contract, the auditor will include an unqualified statement in the audit report somewhat as follows: We have examined the university's accounting records and financial operating procedures for

the purpose of determining whether the amount claimed for reimbursement by the university, as represented by billings submitted, constitute allowable costs under the terms of the contract. The examination was performed in accordance with generally accepted auditing standards and accordingly included such tests of accounting records and such other auditing procedures as were considered necessary in the circumstances.

Based on our examination, we are of the opinion that "Dollars" represent costs which are allowable under the contract and are therefore reimbursable. All Government furnished and/or university acquired property under the contract has been properly accounted for and/or disposed of.

In the cited case, the university claimed an amount in excess of the allowable cost which was reported by the auditor and he qualified his statement to reflect the audit finding.

#### Disposition of Government Research Property.

The thirty final audit reports examined disclosed that seventeen of the thirty universities did not have provisions for the use of Government property in the research contract. The seventeen universities were divided into seven public and ten private. However, there were four public and four private universities which had acquired Government research

property either by transfer or purchased with research funds and no determination had been made as to the disposition of the research property at time of audit. Final payment to the university is not made until the disposition of research property has been completed. The arrangements to dispose of the property after completion of the contract either by transferring title to the university or transferring the property from one university to another may delay the closing of the contract for a considerable period of time.

The analysis also disclosed that title to research property had been transferred to three public and two private universities prior to the final audit.

Title to research property may be transferred to universities at time of negotiation if requested by the university.

Cognizant Government Audit Agency.

The examination of the audit reports revealed that twenty four universities (80 percent) were audited by the same Government audit agency. However, according to the Office of Management and Budget Circular A-88, which is currently being implemented, Department of Health, Education, and Welfare is assigned the responsibility for the audit of 1,980 universities of a total 2,047 or 96.7 percent. DHEW



will also be responsible for negotiating indirect cost rates for the same universities.

Negotiated Contract Amount and Acceptable Audited Costs.

The thirty final audit reports disclosed that the mean negotiated contract cost is \$53,545 with the mean audited acceptable cost being \$48,600. The difference is due primarily to the universities performing the research for less than the negotiated amount of the cost reimbursement contracts.

Table 7 reflects that eighteen of thirty universities or 60 percent had negotiated research contracts with cost of \$50,000 or less. Eight of thirty universities or 27 percent have contracts with cost of between \$50,001 and \$100,000 and four universities or 13 percent have negotiated cost of over \$100,000. Seven of fourteen public universities or 50 percent and eleven of sixteen private universities or 70 percent had contracts with cost of less than \$50,000 and six public and two private or 43 percent public and 13 percent private had contracts with cost of \$50,001 to \$100,000. One public and three private or 7 percent and 17 percent respectively had contracts of over \$100,000.

Period of Contracts and Period From Completion To Final Audit.

The fourteen public and sixteen private universities'

TABLE 7

NEGOTIATED CONTRACT COSTS AND ACCEPTABLE AUDITED COSTS OF  
30 COMPLETED RESEARCH CONTRACTS

Dollar Amount	<u>NEGOTIATED COST</u>			<u>ACCEPTABLE AUDITED COST</u>		
	<u>Number of Contracts</u>			<u>Number of Contracts</u>		
	Total	Public	Private	Total	Public	Private
Less than \$15,000	0	0	0	2	1	1
\$15,000 to \$25,000	10	4	6	9	4	5
\$25,001 to \$50,000	8	3	5	7	2	5
\$50,001 to \$75,000	2	2	0	2	2	0
\$75,001 to \$100,000	6	4	2	8	5	3
Over \$100,000	<u>4</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>0</u>	<u>2</u>
Total	30	14	16	30	14	16

final audit reports examined discloses that the greatest number of contracts are negotiated for periods between six and thirty five months (Table 8). There were 43 percent negotiated for the period between six and twenty three months and 43 percent for the period between twenty four and thirty five months or a total of 86 percent for the period between six and thirty five months. Table 8 also reflects that twenty four of thirty contracts or 80 percent were completed between twelve and thirty five months before the final audit. Forty seven percent were completed between twelve and twenty three months and 33 percent were completed between twenty four and thirty five months before final audit. Twenty percent were not audited until thirty six months or later after the contract was completed. This analysis will be discussed in Chapter V regarding the lapsed time from completion to final audit of the contract.

The results in this chapter are utilized in Chapter V which develops the conclusions and discussions of the research study.

TABLE 8

RESEARCH CONTRACT PERIOD AND PERIOD FROM COMPLETION TO  
FINAL AUDIT OF 30 RESEARCH CONTRACTS

Number of Months	<u>Period of Contract</u> <u>Number of Contracts</u>			<u>Period From</u> <u>Completion to Final Audit</u> <u>Number of Contracts</u>		
	Total	Public	Private	Total	Public	Private
6-11	4	1	3	0	0	0
12-23	9	5	4	14	5	9
24-35	13	5	8	10	7	3
36-48	2	2	0	4	2	2
Over 48	<u>2</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>0</u>	<u>2</u>
Total	30	14	16	30	14	16

## CHAPTER V

### DISCUSSION, CONCLUSIONS AND SUMMARY

The previous two chapters presented the research findings. This chapter's objective is to discuss the research findings as they relate to the five hypotheses of the study. The discussion will attempt to join and clarify information obtained from the literature and the findings of the research.

#### Aids in Developing the Climate in Which Research Can Best Be Performed.

The financial management of a university definitely aids in developing the climate or environment in which research is conducted as will be discussed in this part of the chapter.

The researcher believes there are areas which require improvement but weaknesses are always present in any expanding and changing financial system.

According to the educational institutions sampled, 97 percent of the public and private universities negotiate research contracts with the Government.

The Government expects sound financial management in every institution of higher education, which it provides with funds, to support research projects. Without sound financial

management, the Government cannot depend on the university to provide the necessary assurance that the funds entrusted to them are being properly administered.

The overall management of universities also depends on financial management to provide them with the necessary assurance that the cost of research projects being performed under cost reimbursement contracts is being reimbursed by the sponsoring Government agency.

According to a study which was included in the literature material reviewed, Federal research funds are highly concentrated in a few large universities and Federal support to these may increase the difficulties for nonrecipient institutions in maintaining a good faculty and a stimulating atmosphere.<sup>1</sup> The current sampling of public and private universities (with student populations ranging from 3,121 to 74,125) show 97 percent perform research for the Government. This disputes such a claim and in fact supports the contention that small universities perform research as well as large ones.

The mail questionnaire disclosed that only thirteen (37 percent) of thirty five universities performing research for the Government use an independent management advisory

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<sup>1</sup>Alice M. Rivlin, The Role of the Federal Government In Financing Higher Education, (Brookings Institution, Washington, D.C., 1961) p. 59.

service. A management advisory service can be described as the function of providing professional advisory services, the primary purpose of which is to improve the university's use of its capabilities and resources to achieve the objectives of the institution. These objectives include the functions of analysis, planning, and organizing; the introduction of new ideas, concepts, and methods; the improvement of policies, procedures, systems, methods, and organizational relationships; the application and use of managerial accounting, central systems, data processing, and mathematical techniques and methods; the conduct of special studies, preparation of recommendations, development of plans and programs, and provision of advice and technical assistance in their implementation.

The mail questionnaire also disclosed that only eleven (31 percent) of the thirty five universities provide staff training for their financial management personnel. The researcher believes that an acceptable training program should be designed to progressively provide university personnel with knowledge and skills necessary to perform the duties of their present position and to keep pace with the demands of advancing technologies. The program should meet the continued requirements for improving and enhancing professional

development in the field of financial management. Changes in management concepts and technological advances demand that the staff of the financial management office engage in training which broadens their knowledge and provides new insights into their positions. The instructional material pertaining particularly to research contracts should include evaluation of pricing proposals, contract cost principles, etc.

The study provides evidence that sound financial management in the universities performing research for the Government aids in developing the climate in which research can best be performed, since it shows that research is performed in almost all the institutions of higher education. However, it is believed that the institutions would greatly enhance and improve the climate if they would utilize management advisory services and provide staff training for their financial management personnel.

#### Common Interest in Conservation of Public Funds.

Response to the mail questionnaire discloses that 94 percent of the universities sampled have automated accounting systems. This is true with both the public and private institutions. It was found in our examination of final audit reports of thirty universities that twenty nine of the thirty schools had acceptable accounting systems. The auditor took



exception to one of the university's accounting system (automated) because it did not provide for the recording of expenditures by element of cost for Federal grants and contracts.

An automated accounting system may be defined as one which controls an environment by receiving data, processing them and returning the results sufficiently quickly to affect the function of the environment at that time. The benefits of management from the system are significant because of the more timely and accurate information that may be used for over-all planning and decision-making. The availability of current information and the computational capability of the system enables financial management to exercise budget and accounting control not otherwise obtainable. In cooperation with over-all university management and Government, the financial management officer should determine the financial information needed for effecting control but he must be careful to prepare only those reports that are needed and not simply prepare reports because they can be easily generated.

The financial management officer should recognize the capabilities and limitations of his particular system and its applicability to the areas related to financial control of Government research projects. His office should consist of a

group concerned with the preparation of programs and be concerned with producing financial reports and also, as a group, be concerned with measurement, system requirements, and special studies or projects.

The Department of Health, Education, and Welfare, is responsible to audit and negotiate indirect cost rates for 96.7 percent of the universities doing research for the Government. These universities are required by DHEW to submit a proposed final indirect cost rate no later than six months after the close of their fiscal year, or such other period that may be specified in the research contract. The proposed rate is based on the university's actual cost for the period ended. Supporting data is submitted with the proposal. Since the proposal should be accompanied by cross-references, and reconciled to the institutions independently audited financial statement, it is desirable to have the proposal reviewed by their external auditors. Only 12 percent have the proposals reviewed according to the mail questionnaire. The failure of an institution to submit a timely indirect cost proposal may result in the disallowance of indirect cost previously awarded on a provisional basis.

An audit of the indirect cost contained in the proposal is conducted to ascertain whether indirect costs are reasonably

incurred, reliably recorded, and assembled into appropriate cost groupings for equitable distribution to all Government research projects. Because of the multitude of income, expense, and fund accounts maintained by educational institutions, an institution's proposal for indirect cost rate should be reconciled with the financial books of account and published annual statement. The individual accounts should be analyzed to the extent necessary to determine their reasonableness and allowability.

The researcher believes the university could provide the Government with an indirect cost proposal reviewed by their accounting firm which may be used for negotiating an indirect cost rate without a detailed audit by the Government. This would in many cases conserve time and cost.

All of the universities sampled maintain individual accounts for research costs. This is in compliance with their agreement to maintain books, records documents, and other evidence pertaining to the costs incurred during the performance of the research contract. These records should be maintained to the extent and in such detail as will properly reflect all net costs of labor, materials, equipment, supplies and services, etc. for which reimbursement is claimed under provision of the contract. These costs may be direct or

indirect.

The American Council on Education in their publication, "College and University Business Administration," which is a reference for university business officers, provides in the chart of accounts for individual research project accounts. According to the response, all of the universities comply with this recommendation.

The study states that universities and the Government have common interest in assuring the conservation of public funds by the university having the capability of furnishing the Government with timely and accurate financial reports, accounting for the stewardship of the research funds and by maintaining the financial accounts in such a manner as to readily reflect the segregated costs applicable to each research project. The researcher believes it would be a great improvement to the common interest of the university and the Government if all universities had their accounting firms review and approve their indirect cost proposals. The Government should then be able to accept the proposal if certified by the university's accounting firm to be reliable enough to use for negotiating the indirect cost rate without an audit by Government auditors.

### Financial Policies and Regulations.

The financial policies and regulations, as they relate to universities performing research for the Government, establishes essential principles which will facilitate the administration of research programs. The procedures and methods to apply the principles will be defined in this part of the chapter.

The method utilized to compensate 91 percent of the universities for the use of buildings, capital improvements, and usable equipment was the use charge rather than depreciation. The cost principles agreed to by the universities and Government provide an alternative to the conventional depreciation computation by authorizing a use allowance. The alternative is provided in recognition that accounting for the expense of depreciation normally is not practiced by educational institutions, and detailed records of asset acquisitions and disposals may be inadequate. The use allowance, in lieu of depreciation, is not what is considered a generally accepted cost accounting principle but primarily as a method of expediency to avoid some bookkeeping and clerical work. It is recognized that a considerable amount of effort might be involved, particularly for the older and smaller institutions,

to reconstruct records of assets acquired in the past, to provide a basis for computing depreciation, but the maintenance of adequate records on future acquisitions might be desirable. The university could apply the use charge to the assets acquired in the past and use depreciation for assets acquired in the future. However, a combination of the two methods may not be used in connection with a single class of fixed assets.

In recent years, the use of accelerated depreciation has become common in industrial organizations, in order to provide a greater cash flow to the enterprise. In view of the rapid obsolescence of buildings and equipment, used in Government research, it seems appropriate to use accelerated depreciation in order to increase cash flow to the universities and thus stimulate their financial position.

Forty six percent of the universities sampled responded that the title to research property acquired with Governmental research funds was requested at the time of negotiation. A review of final audit reports of thirty universities disclosed that five out of thirteen had title to the research property transferred prior to final audit. Research property was not involved in seventeen of the audit reports.

In many instances, performance of research specified in contracts requires the acquisition of equipment. Frequently universities purchase equipment and are reimbursed by the Government. In other instances, Government-furnished property is used by the university. Such property is transferred from Government stocks, from a completed contract, or purchased directly by the Government and delivered to the university.

Government regulations provide that the cost of permanent equipment is allowable when approved by the sponsoring agency or provided for by the terms of the research contract.

The definition of permanent equipment is an item which has an acquisition cost of two hundred dollars or more and has a life expectancy of one year or more. Approval must be obtained to acquire all general purpose permanent equipment. However, approval need not be obtained by educational institutions for permanent research equipment which cost less than one thousand dollars.

The title to scientific research equipment is to be vested in the educational institution when it is acquired or as soon thereafter as possible. The objective of this Government policy is to strengthen the scientific capability

of educational institutions. This policy also eliminates the university reporting to the contracting officer regarding the custody of equipment. It also lessens the administrative cost to the Government of accounting, shipping, storing, and disposing of the research property at completion of the research project.

The Government, in its contracting, does reserve the right to require the university to transfer title of equipment to the Government. However, this must be effected no later than twelve months following the final fiscal report.

The sampling of the universities disclosed that 82 percent of the public and 50 percent of the private universities do not think Government financial regulations and procedures are uniform and consistent. The concluding question in the questionnaire suggested that the respondent comment regarding financial management of research agreements with the Government. The majority of the comments were in regard to the lack of uniformity and consistency of financial regulations and procedures. However, most of the respondents commented that there was some evidence of improvement. There seems to be a concerted effort on the part of representatives of universities and the Government to develop financial



regulations and procedures which provide procedures designed to recognize the full allocated costs of research under generally accepted accounting principles.

The Office of Management and Budget Circular A-88 provides uniformity since it establishes that one Federal agency will negotiate the indirect cost rate or rates for all agencies at a single educational institution. That same Government agency will also be responsible for the audit of both direct and indirect costs. Office of Management and Budget Circular A-21 provides principles as a policy guide but it does not dictate the extent of a Government agency and educational institution participation in the financing of a particular research project. Any arrangement for the financing of a research project is subject to negotiation. Only broad financial criteria equitable to both the Government and the institution should be applied. The application of the cost principles contained in the Circular does not require the university to make any changes in its generally accepted accounting practices.

The research has established that financial policies and regulations are provided to encourage maximum realization of research. The representatives of universities and

Government have worked together and made great progress in formulating procedures and methods for improving the financial aspects of research contracting.

Some of the methods and procedures are presented to provide evidence of the mutual endeavor of universities and Government.

The method used by most educational institutions providing reimbursement for the use of buildings, capital improvements, and useable equipment is acceptable under Office of Management and Budget Circular A-21. This method is also approved by the American Council on Education and according to the responses to the mail questionnaire, it is preferred rather than the depreciation method.

The procedure for vesting title in the university at negotiation is provided in Office of Management and Budget Circular A-101 and should be considered as an improved procedure since it clearly establishes title of the research property and aids in administering and closing the research contract without undue delay.

The policy of one Government agency performing audit of direct and indirect costs, as well as negotiating indirect cost rates for a single university, greatly improves the uniformity of mutually accepted cost principles by universities

and Government.

Mutual Financial Responsibility.

The hypothesis regarding the mutual financial responsibility of institutions of higher education and the Federal Government as related to negotiated research contracts appears to be verified by the responses to the questions regarding mutual financial responsibilities.

The responses show that eighteen of thirty five universities used predetermined indirect cost rates. Universities are the only recipients of research funds that are authorized to use the predetermined indirect cost rate. However, many universities are reluctant to use the rate because of the fluctuation of their indirect cost since it is not subject to adjustment except in very unusual circumstances.

The examination of final audit reports of thirty universities revealed that ten institutions (one third) used the predetermined rate.

The universities may now use another method of establishing an indirect cost rate. This rate is known as a fixed rate with carry-forward provisions. The rate has both the provisional and predetermined indirect cost rate characteristics. It is established and fixed for a specified period

of time and is not subject to adjustment for the period, however, if the actual rate is found to result in an over or under recovery of indirect cost, the difference is carried forward as an adjustment to the next period.

It is the mutual responsibility of the university and Government to provide equitable recovery of cost incurred during the performance of contracts for research. Quite often so-called "ceiling" rates are used, therefore, the university in many cases does not recover the full indirect cost. This is actually sharing the cost of the research by the university and should be recognized as such and accounted for as this cost will have to be recovered from other sources of funding. Whenever cost-sharing arrangements are made, it is advisable to have it clearly defined in the language of the contract.

The sample taken of the public and private universities showed no difference regarding the period of time from the submission of public vouchers and receipt of payment. Forty one percent received payment within thirty days and the same percent (41) received payment within sixty days. Therefore, 82 percent of both the public and private institutions received payment within sixty days.

Universities find it necessary to use their own funds for costs incurred under research projects due primarily to

the time required to prepare and process payment vouchers under cost-reimbursement contracts. The researcher believes, since universities are allowed neither a fee nor recovery of interest lost on funds used to finance cost-reimbursement contracts, that Government should provide all of the universities with sufficient advance funds to cover all cost on research projects. This is another situation where the university does not recover all of the costs incurred for a research project but it is not recognized by the Government as cost-sharing.

Sixty six percent of the universities sampled, in response to the question, "Are you or a member of your staff consulted at the time the budgets for proposed research contracts are formulated?" answered "always" while thirty four percent answered "sometimes."

Research proposal preparation is generally the responsibility of the individual desiring to perform the research. However, the completed proposal is usually reviewed by several management levels, including the researcher's department and the officer in charge of research for the university.

The proposal usually includes a detailed budget showing the elements of cost, including costs for salaries, material, equipment, travel, reports, computer time, and any other anticipated needs as well as the university's indirect cost

rate. Since the proposal contains a detailed budget, the financial management office should be consulted and the elements of costs reviewed prior to submitting the proposal to the Government agency.

Most Government agencies have the proposed budget reviewed by an experienced price and cost analyst to determine the applicability and reasonableness of the costs in relation to the scope of work to be performed. If the Government reviewing personnel has a question regarding any financial aspects of the proposed budget, they will usually contact the university's finance office. It would be helpful and conserve time, for both the university and the Government, if the financial personnel of the university is familiar with cost budgets for all research projects.

Sixty six percent of the responding universities use the letter-of-credit as a financing mechanism. The policy of the Department of Health, Education, and Welfare is to provide all educational institutions with advance funding for research work in reasonable amounts. The Treasury Department's letter-of-credit method of financing advance payments should be utilized whenever feasible. Office of Management and Budget Circular A-101 supports the objective of strengthening the research capabilities of educational institutions by providing

advance payments through the use of the letter-of-credit procedure to the maximum extent, whenever practical.

The universities, by using the letter-of-credit, will not be required to provide funding for any period of the research contract. They may instead draw on the letter-of-credit funds as they incur research costs without waiting for reimbursement of public vouchers from the sponsoring Government agencies.

The study verifies that there is mutual financial responsibility of universities and Government since representatives of both contractual entities are making a concerted effort to recover indirect costs of university research through an equitable method and to provide a method of advancing funds for research through the letter-of-credit which alleviates the need of the university to use their own funds. The researcher believes more emphasis should be placed on the review of cost budgets of the proposed research to be performed by the university. Every cost budget should be reviewed and approved by the financial management officer of the university.

#### Auditing of Research Contracts.

The audit functions of Government audit agencies regarding the auditing of research contracts performed by universities could be performed by independent accounting firms

and this should be accepted as an improvement in the area of sound financial management of the educational institution.

Response to the mail questionnaire indicated that 66 percent of the universities engage independent accounting firms, however when public and private institutions are compared it is found that seventeen of eighteen private but only six of seventeen public universities engage external auditors. Most public universities are audited by state auditors or by auditors from a central office of church affiliated schools. This is a probable explanation for the difference of responses from the public and private universities.

The universities, in order to fully comply with the recommendations of the American Council on Education, should engage the services of an independent accounting firm. However, the audits of those universities audited by the state or central offices of church affiliated schools, should be just as comprehensive as those done by public accounting firms and should be in accordance with generally accepted auditing standards.

The educational institution doing research for the Government should maintain their accounts in conformity with generally accepted accounting principles for colleges and



universities. If the accounts are maintained in this manner, and accurate statements and schedules are prepared, the auditor will render an unqualified opinion as to the fairness with which they present the financial condition of the institution.

The sample also indicated that 80 percent of the universities have their research cost records audited by one Government agency and the same survey showed that 91 percent or sixteen of seventeen public and sixteen of eighteen private universities have their research cost records and indirect costs negotiated by the same Government agency.

The Office of Management and Budget Circular A-88 provides that one Government agency will be responsible for the auditing of direct and indirect costs of a single university and will negotiate the indirect cost rate for the same university. According to the Circular all Government agencies will accept the negotiated rate. Whenever this policy is completely implemented, the universities will no longer be subject to various Government agencies' concepts and interpretation of applicable total cost as it relates to research projects. Since all of the Government agencies will be accepting the one agency concept of auditing the cost and negotiating the indirect cost rate, guidelines could be provided to the educational institutions'

independent auditor or state auditor and have them submit certified cost reports to the responsible Government agency.

Twenty five of the thirty five universities responding to the questionnaire, show that their cost records are audited annually by Government auditors. However, there were three universities which were not audited within a two year period.

The universities are required under the record retention clause of contracts to retain their records for a period of three years subsequent to final payment. Usually the final payment is not made until a final audit has been conducted. The university is not fully reimbursed for the cost incurred under the contract until final audit.

The examination of final audit reports for fourteen public and sixteen private universities disclosed that final audits were performed within two years for fourteen of the universities and up to four years for another fourteen of the institutions.

The examination also revealed that only two exceptions were taken by the auditor regarding direct cost reported in the thirty final audit reports. One of the exceptions was minor and did not require administrative action and the other regarded an "overrun" on a contract. Of the thirty final audit reports examined, the auditor qualified his statement in only one to

reflect that the university claimed an amount in excess of the allowable cost.

The researcher believes the university should be more promptly reimbursed in full for the total cost of the research project. This could best be accomplished by accepting a certified cost report (adhering to Government guidelines) from the university's external auditors.

The study has supplied evidence that the audit functions performed by Government auditors of auditing research contracts performed by universities could be performed by independent accounting firms.

Most universities have their accounting records audited by either independent accounting firms or by the state or some independent audit group. These auditors are external auditors and have professional integrity to maintain, therefore the audit performed by them and the financial reports issued should be acceptable to any interested party provided the reports contain an unqualified auditor's opinion.

The researcher believes that the Government agencies could provide guidelines of any specific area they wish to be emphasized which may be of interest to them and not to other recipients of the reports. Since the external auditors

of the university are expected to be familiar with the over-all management of the university, they are in a position to provide the Government agencies with comprehensive studies upon request.

The finalization of the research contracts could be handled more expeditiously if the Government would accept the verification of the total costs incurred under cost-reimbursement contracts. Since there were very few exceptions, according to the final audit reports examined, it seems feasible to rely on the universities accounting procedures for accumulating applicable research cost and process payments for the total cost.

#### Additional Research Contemplated.

Additional research in the area of financial management in the educational institution is planned by the writer.

The objective of the research will be to obtain textual material for a book suitable for use in educational courses regarding financial management in the universities as related to Government research.

There is a need to promote greater recognition in universities that financial management concepts as pertaining to Government research require professional and technical skills,

talents, and understanding. The additional study could have a significant impact on updating, expanding, and synthesizing the available material pertinent to financial administration in educational institutions.

The replies to the inquiries mailed to the three national accounting associations regarding the current study, disclosed that they have not conducted any research or published any studies regarding the area of financial management in the universities as related to Government research.

#### Implications For Future Research.

Future research in the area of financial management in the universities relating to Government support of research through grants should be beneficial. The present study shows the importance and the areas for improvement regarding only research contracts, however, a study related to grants should prove to be useful since many of the cost and accounting principles are applicable to grants as well as to contracts. The two techniques of supporting Government research are probably quite different as to the procedures of initiating and administering the research instruments.

Future research should also be helpful regarding the

feasibility of establishing a central civilian Government agency for the accomplishment of basic and applied research procurement with educational institutions. This central agency would be available to all civilian agencies for the purpose of procuring research. There is a probability that centralization of this type of procurement could eliminate duplication by various agencies and could be more economical and efficient.

Recommendations.

The researcher recommends that the National Association of College and University Business Officer Committee on Governmental Relations develop a training program regarding financial management as related to Government research for both the public and private universities. This program should be in the form of seminars and on the job training. It should be designed to provide flexibility and be responsive to the needs of the entire financial management staff as well as the individual. The objective of the training is to develop the staff so they perform at a higher level of competence, therefore, they will contribute more effectively to the financial management of the university. University financial management personnel should also be encouraged to attend seminars given

by the American Institute of Certified Public Accountants and the American Accounting Association.

It is also suggested that university and Government financial management personnel develop joint seminars where there may be an exchange of information regarding accounting principles, cost principles, record keeping, reporting and auditing requirements pertaining to research. This arrangement would be beneficial to both the university and Government in proposing general uniformity for all universities and all Government agencies.

These joint seminars could also provide a basis for better communication between the university and Government in their research relationship. A better understanding of the problems could be developed during discussion. Joint meetings of the financial management and other university personnel responsible for research contracting could provide better understanding of the financial and technical aspects of research programs.

It is also recommended that the universities request the Government agencies to consider the acceptance of certified statements of cost prepared by their independent accounting firms or external auditors in lieu of the Government

auditing the research cost. This would definitely reduce the delay in closing contracts and the receipt of final payment. The universities' external auditors could also certify the indirect cost proposals submitted to the Government. This would expedite negotiation of indirect cost rates.

If these recommendations are implemented, they will improve the functions of the financial management office and should provide better understanding of all university and Government personnel responsible for research programs.

#### Summary.

This study explored five elements pertaining to financial management in institutions of higher education as related to Government negotiated research contracting. The research has tested the feasibility of five hypotheses presented as elements to be investigated in the study. Responses to a mail questionnaire were analyzed and final audit reports were examined. The data obtained were used as evidence to support the contention that sound financial management in universities as related to research negotiated contracting is important and can be improved through these five elements:

1. Financial management aids in developing the climate in which research can best be performed.



2. Universities and Government have a common interest in assuring the conservation of public funds.

3. Government financial policies and regulations, as they pertain to universities, are provided to encourage maximum realization of research.

4. Mutual financial responsibility of universities and Government as related to research contracts is essential.

5. Audit functions of Government audit agencies regarding the auditing of research contracts at universities could be performed by the institution's external auditors.

The evaluation of the prescribed elements of financial management in the universities as related to Government research contracts was elaborated on by comments regarding each element in this concluding chapter.

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## APPENDIX A

Questionnaire and applicable letters mailed to nineteen public and twenty two private universities, data were analyzed and commented on as part of the study.

Financial Management Survey

Name of University \_\_\_\_\_

Please check the appropriate answers to the following questions:

1. What type of research agreement or agreements does your institution have with Government agencies?  
Grants \_\_\_ Contracts \_\_\_
2. With which Government agency or agencies does your institution have research agreements?  
HEW \_\_\_ DOD \_\_\_ Other \_\_\_
3. Does your institution engage an independent accounting firm to audit your institution's records?  
Yes \_\_\_ No \_\_\_
4. What type of accounting system does your institution use?  
Automated \_\_\_ Manual \_\_\_
5. How many Government audit agencies currently audit your institution's accounting records to verify cost incurred under research contracts?  
One \_\_\_ Two \_\_\_ More than two \_\_\_
6. How often do Government audit agencies audit the cost records of your university?  
Annually \_\_\_ Biennially \_\_\_ Or every \_\_\_ years
7. Does an accounting firm provide management advisory service as well as financial advisory service to the university?  
Yes \_\_\_ No \_\_\_
8. Do you have your institution's indirect cost proposal reviewed by an accounting firm before submission to the Federal Government for audit?  
Yes \_\_\_ No \_\_\_
9. Does the same Government agency audit the costs of research agreements and negotiate the indirect costs rates for your institution?  
Yes \_\_\_ No \_\_\_
10. Does your institution negotiate predetermined indirect cost rates?  
Yes \_\_\_ No \_\_\_

11. Which method is used to compensate your university for the use of buildings, capital improvements, and usable equipment under research contracts?  
Use Charge \_\_\_ Depreciation \_\_\_
12. Does your institution request Government agencies to vest title of property acquired with Governmental research funds in your institution at the time of negotiating the contracts?  
Yes \_\_\_ No \_\_\_
13. Do you maintain accounts by individual research projects for costs incurred under research contracts?  
Yes \_\_\_ No \_\_\_
14. What is the approximate period of time between submission of a contract cost reimbursement voucher and receipt of payment from the Government?  
30 days \_\_\_ 60 days \_\_\_ 90 days \_\_\_ More than 90 days \_\_\_
15. Do you provide a program for your staff to train them in financial management as it relates to Government research agreements?  
Yes \_\_\_ No \_\_\_
16. Are you or a member of your staff consulted at the time the budgets for proposed research contracts are formulated?  
Always \_\_\_ Sometimes \_\_\_ Never \_\_\_
17. Do you consider the regulations and procedures established by the Government relating to financial aspects of negotiated research contracts to be uniform and consistent?  
Yes \_\_\_ No \_\_\_
18. Do you use the single letter-of-credit as a method of reimbursement for cost incurred under research contracts?  
Yes \_\_\_ No \_\_\_  
If the method were available to you, would you use it?  
Yes \_\_\_ No \_\_\_
19. Do you have any particular criticism regarding financial management of research agreements with the Government?  
If so, please comment.



HOWARD C. HAIRE  
CERTIFIED PUBLIC ACCOUNTANT  
5507 EDSON LANE  
ROCKVILLE, MD.  
OL 2-6981

September 30, 1971

Dear

Mr. Howard Haire, a C.P.A. and a candidate for a Ph.D. degree, is currently collecting data about the financial management of public and private universities as related to government negotiated research contracting. The resulting information will form the basis of his doctorate dissertation which I am directing.

Your university was selected for inclusion in his research based on a probability sample of all public and private institutions of higher learning, a sample which took into account such variables as size of institution, type of institution, student population, etc. I would appreciate your completing the enclosed questionnaire at your earliest convenience and returning it to Mr. Haire in the stamped, self addressed envelope, which is enclosed. The questionnaire should take no more than five or ten minutes of your time. Your answers will of course be held in strict confidence and will be used only for the purpose of statistical analysis in such a manner that no individual or institution may be identified.

As you realize, the validity and reliability of a study such as this is totally dependent upon getting a high response rate. Your cooperation in this research will be greatly appreciated and the findings, if you so indicate on the questionnaire, will be sent to you as soon as they are available.

If you should have any questions, please call me at home collect Tel. No. 301-530-7726 or Mr. Haire Tel. No. 301-652-6981.

Very truly yours,

Michael S. Backenheimer, Ph.D.

HOWARD C. HAIRE  
CERTIFIED PUBLIC ACCOUNTANT  
5507 EOBON LANE  
ROCKVILLE, MD. 20852  
—  
DL 2-6981  
AREA CODE 301

155

October 18, 1971

Dear

Earlier I sent you a short questionnaire about the financial management of public and private universities as related to Government negotiated research contracting. The resulting information will be incorporated into my doctorate dissertation.

Since I have not yet received a response from you and since I realize that the pressures of time and business often cause these forms to become mislaid or lost, I am taking the liberty of sending you a duplicate questionnaire. It should take you no longer than five or ten minutes to fill out and it can be returned to me in the enclosed stamped self-addressed envelope.

Your answers will be held in strict confidence and will be used only for the purpose of statistical analysis in such a manner that no individual or institution may be identified. Since my research endeavor is totally dependent upon getting a high response rate from persons such as you, may I again ask for your help and cooperation in this study.

Should you have any questions, please call me collect at home (Tel. No. 301-652-6981) or my research director, Dr. Michael Backenheimer (Tel. No. 301-530-7726).

Sincerely,

---

Howard C. Haire

HOWARD C. HAIRE  
CERTIFIED PUBLIC ACCOUNTANT  
5507 EDDON LANE  
ROCKVILLE, MD. 20852  
—  
DL 2-6981  
AREA CODE 301

156

November 16, 1971

Dear

Earlier I sent you a short questionnaire about the financial management of public and private universities as related to government negotiated research contracting. The resulting information will be incorporated into my doctorate dissertation.

Since I have not yet received a response from you and since I realize that the pressures of time and business often cause these forms to become mislaid or lost, I am taking the liberty of sending you a duplicate questionnaire. It should take you no longer than five or ten minutes to fill out and it can be returned to me in the enclosed stamped self-addressed envelope.

Your answers will be held in strict confidence and will be used only for the purpose of statistical analysis in such a manner that no individual or institution may be identified. Since my research endeavor is totally dependent upon getting a high response rate from persons such as you, may I again ask for your help and cooperation in this study.

Should you have any questions, please call me collect at home (Tel. No. 301-652-6981) or my research director, Dr. Michael Backenheimer (Tel. No. 301-530-7726).

Sincerely,

\_\_\_\_\_  
Howard C. Haire

HOWARD C. HAIRE  
CERTIFIED PUBLIC ACCOUNTANT  
5507 EDEON LANE  
ROCKVILLE, MD. 20852  
DL 2-6981  
AREA CODE 301

157

December 1, 1971

Dear

I recently sent you a short questionnaire about financial management as related to Government negotiated research contracts. As of this date, I have not yet received a reply. May I stress again that the data being collected will be the basis of my doctoral dissertation and that all information supplied will be treated in strict confidence.

If you have not already done so, please take just a moment to fill out and return the questionnaire to me.

Sincerely,

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Howard C. Haire

APPENDIX B

Inquiries mailed to the three national accounting associations requesting information as to available publications and research studies related to this study.

HOWARD C. HAIRE  
CERTIFIED PUBLIC ACCOUNTANT  
5507 EDSON LANE  
ROCKVILLE, MD. 20852  
DL 2-6981  
AREA CODE 301

159

September 9, 1971

Administrative Office,  
American Accounting Association  
1507 Chicago Avenue  
Evanston, Illinois 60201

Gentlemen,

I have been a member of the American Accounting Association for approximately twenty years and have enjoyed and benefited from reading every issue of the Accounting Review.

At the present time I am in the process of writing a dissertation for the Ph.D degree and will appreciate any information you may be able to furnish me, such as studies and publications, etc., relevant to the dissertation. The title of the dissertation is "Evaluative Study of Financial Management for Institutions of Higher Education as Related to Government Negotiated Research Contracting".

Any assistance you are able to provide will be greatly appreciated.

Thank you,

---

Howard C. Haire

HOWARD C. HAIRE  
CERTIFIED PUBLIC ACCOUNTANT  
5507 EDSON LANE  
ROCKVILLE, MD. 20852  
DL 2-6981  
AREA CODE 301

160

September 9, 1971

American Institute of  
Certified Public Accountants  
666 Fifth Avenue  
New York, N. Y. 10019

Gentlemen,

I have been a member of the Institute since 1960 and have enjoyed and benefited from the membership.

At the present time I am in the process of writing a dissertation for the Ph.D degree and will appreciate any information you may be able to furnish me, such as studies and publications, etc., relevant to the dissertation. The title of the dissertation is "Evaluative Study of Financial Management for Institutions of Higher Education as Related to Government Negotiated Research Contracting".

Any assistance you are able to provide will be greatly appreciated.

Thank you,

---

Howard C. Haire

HOWARD C. HAIRE  
CERTIFIED PUBLIC ACCOUNTANT  
5507 EDSON LANE  
ROCKVILLE, MD. 20852  
DL 2-6981  
AREA CODE 301

161

October 12, 1971

American Institute of  
Certified Public Accountants  
666 Fifth Avenue  
New York, N.Y. 10019

Gentlemen,

The enclosed letter was sent to you September 9, 1971.  
However, I have not received a reply.

Please advise me whether you are able to provide any  
information regarding sources from which I may obtain  
data relevant to the dissertation.

Your assistance will be greatly appreciated.

Thank you,

---

Howard C. Haire



HOWARD C. HAIRE  
CERTIFIED PUBLIC ACCOUNTANT  
5507 EDSON LANE  
ROCKVILLE, MD. 20852  
DL 2-6981  
AREA CODE 301

162

October 12, 1971

National Association of Accountants  
919 Third Avenue  
New York, New York 10022

Gentlemen,

I have been a member of the National Association of Accountants since 1951 and have enjoyed and benefited from the membership.

At the present time I am in the process of writing a dissertation for the Ph.D. degree and will appreciate any information you may be able to furnish me, such as studies and publications, etc., relevant to the dissertation. The title of the dissertation is "Evaluative Study of Financial Management for Institutions of Higher Education as Related to Government Negotiated Research Contracting".

Any assistance you are able to provide will be greatly appreciated.

Thank you,

---

Howard C. Haire

## APPENDIX C

These pertinent items selected from final audit reports of fourteen public and sixteen private universities were reviewed, analyzed, and commented on as part of the study.

Pertinent Items Selected from Final Audit Reports of Thirty Universities:

Audit Exception to Accounting System.

Audit Exception to Direct Cost.

Audit Exception to Indirect Cost.

Negotiated Indirect Cost Rates.

The Standard Auditor's Statement.

Disposition of Government Research Property.

Cognizant Government Audit Agency.

Negotiated Contract Amount and Acceptable Audited Costs.

Period of Contracts and Period from Completion to Final Audit.