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HIGHER EDUCATION--STATE AND LOCAL GOVERNMENTS.

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DESCRIPTORS- *HIGHER EDUCATION, *STATE GOVERNMENT, *CITY GOVERNMENT, *EDUCATIONAL RESEARCH, *EDUCATIONAL FINANCE, ECONOMIC DEVELOPMENT, ENROLLMENT TRENDS, EXPENDITURES, INCOME, STATE FEDERAL AID, PUBLIC SCHOOLS, FONTANA,

THE ACADEMIC COMMUNITY HAS BECOME A PART OF PUBLIC AFFAIRS, CONTRIBUTING TO NEW TECHNOLOGY IN GOVERNMENT, ADVISING STATE AND LOCAL GOVERNMENTAL OFFICIALS, BUTTRESSING GOVERNMENTAL STAFFS, AND AIDING IN THE FORMULATION AND EXPRESSION OF PUBLIC POLICY. PAST AND FUTURE PREDICTED TRENDS IN RESEARCH, ECONOMIC GROWTH, AND FINANCE, AS THEY RELATE TO CURRENT OR PREDICTED PROBLEMS IN EDUCATION, ARE DISCUSSED, ESPECIALLY AS THEY CONCERN STATE AND LOCAL GOVERNMENTS. RESEARCH EXPENDITURES BY COLLEGES AND UNIVERSITIES HAVE RISEN FROM LESS THAN $50 MILLION PRIOR TO WORLD WAR II TO $2.1 BILLION IN 1965, AND THEY ARE EXPECTED TO REACH $4 BILLION BY 1970. THE IMPORTANCE OF INVESTMENT IN PEOPLE'S EDUCATION AS A SOURCE OF ECONOMIC GROWTH HAS BECOME APPARENT THROUGH ECONOMIC RESEARCH. THE GROWTH OF ENROLLMENT IN HIGHER EDUCATION TO 7.7 MILLION STUDENTS BY 1970 AND THE INCREASED EXPENDITURES WILL CREATE ADDITIONAL PRESSURES ON THE ALREADY HIGH STATE AND LOCAL EXPENDITURES (68 PERCENT OF THE TOTAL SPENT ON HIGHER EDUCATION, OR $1.2 BILLION.) THIS PAPER WAS PRESENTED AT THE COLLEGE SCHOLARSHIP SERVICE COLLOQUIUM ON FINANCIAL AID (3D, FONTANA, WISCONSIN, MAY 22-25, 1966) AND THE COMPLETE DOCUMENT, OF WHICH THIS IS ONE PAPER, "THE ECONOMICS OF HIGHER EDUCATION," IS AVAILABLE FOR $2.00 FROM THE COLLEGE ENTRANCE EXAMINATION BOARD, PUBLICATIONS ORDER OFFICE, BOX 592, PRINCETON, NEW JERSEY 08540. (HW)

The Econom[illegible]

The Economics of Higher Education

Papers Presented at the Third College Scholarship Service Colloquium on Financial Aid, May 22–25, 1966, Held at The Abbey on Lake Geneva, Fontana, Wisconsin

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Contents

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Foreword

In 1962 the College Scholarship Service held its first colloquium on student aid. Because of the long-standing concern of the CSS about gaining the maximum effect from a given amount of aid available, the CSS planned and conducted that Colloquium during both sessions of the Eighty-Seventh Congress. At that time aid to education bills, including a federal scholarship bill, were pending before Congress, but it was just before the time in America's history when Americans and the Congress were ready to back up the goal of equal access to higher education – not only with money, but, more important, with the moral support and commitment reflected in the dollar support.

In 1962 the federal government was in the student aid field primarily through the National Defense Student Loan Program. Since that program was enacted in 1958 as part of the defense-focused reaction to the new space age, federal appropriations for it have grown from an initial $57 million in 1959–60 to more than $190 million. The Congress added a work program in 1964 as part of the Economic Opportunity Act and, finally, a grant program under the Higher Education Act of 1965 to complete the three-part federal program of student aid at the undergraduate level. These new programs have already added $200 million annually to the available resources for financial aid. When they are fully operative in 1969–70, they will contribute approximately $400 million and bring the total federal support for these three programs to almost $600 million.

State governments have entered the student aid field in an accelerated fashion over the past 10 years; 17 states now have competitive scholarship programs open to candidates, without restriction as to field of study. Of these 17 programs, all but New York's have been established since 1956 (New York enacted the first program of this kind in 1913 – the New York State Regents College Scholarship Program). And 9 of the 17 state programs have been established since 1963. Under these 17 programs, more than $100 million is available annually to roughly 300,000 students. When these funds are added to the $600 million from the three federal programs, the public share of the total student budget for college attendance will be greatly in excess of what it was five or even three years ago. In addition, the potential of the permanent GI Bill adds substantial funds, possibly $400 million a year, to these figures, depending on the extent to which veterans avail themselves of this opportunity.

Concurrent with this significant increase in public responsibility for student expenses, a number of other trends have been noticeable. First, and most important, the number and the percentage of students enrolled in public institutions of higher education have increased markedly, in comparison with enrollment in private institutions of higher education. In 1959–60, for example, enrollments were 1,474,000 in private and 2,136,000 in public colleges and universities. In 1964–65, the respective numbers were 1,916,000 and 3,655,000. This trend shows no sign of reversal and leads to some major questions about national policy.

It was in this context that the College Scholarship Service decided in 1965 to hold its third colloquium on the topic, "The Economics of Higher Education." The concern of this Colloquium, and an ongoing concern of

the 860 institutions that make up the membership of the College Scholarship Service Assembly is the pattern for the financing of higher education, including the pattern of attendance. To what degree are the problems of cost and facilities solved by the increasing pattern of public attendance – especially attendance in community colleges free of the financial burdens of construction, housing facilities, and housing fees to students? Even if the growth of these institutions solves certain financial problems, what is the cost in diversity, in student choice, and in the role of the private institution?

Even if some agreement can be reached in national policy about the respective roles of private and public institutions, what patterns can be agreed upon for the cost of college attendance to students? What percentage of the total institutional cost should the student bear in public institutions as well as in private institutions? What level of cost differential between the private and public institutions will the general public support? How high can the cost for the undergraduate years, grades 13 to 16, be set in a society that heavily subsidizes all other levels of education? If more public support were to be made available to private institutions, how can their independence be preserved?

These are difficult questions that must be faced and answered as America passes into the last third of the twentieth century. And this Colloquium was planned and held in an effort to help national thinking in finding the answers to some of these questions. It is the hope of those who planned the Colloquium that the published papers will stimulate some thinking about these key questions.

I want to take this opportunity to thank James L. Bowman for his work in directing the Colloquium. At the time of the Colloquium, Mr. Bowman was director of financial aid at Johns Hopkins University. He is now associate program director of the College Scholarship Service at Educational Testing Service, Princeton, New Jersey. I also want to thank the 12 speakers who, through their papers and in discussions, contributed much to this ongoing debate. The CSS hopes that these papers will prove valuable to the groups and commissions that have been established to study the structure of higher education in this country.

GRAHAM R. TAYLOR
Associate Director
College Scholarship Service

May 1967

Introduction

Reflecting on the Colloquium at which the papers in this volume were presented, I am reminded of a passage from Lewis Carroll's great children's classic:

" 'Will you tell me which way I ought to go
from here?'
'Depends on where you want to get to,'
replied the Cheshire cat.
'Well, I really don't very much care,'
replied Alice.
'Then, it doesn't matter much which way
you go,' said the cat."

For when looking at an area as broad as "The Economics of Higher Education," one can very readily feel like Alice. However, with the assistance of a very able advisory committee, the Colloquium planners were able to ascertain where they intended to go.

As envisaged by the planners of the meeting, the Colloquium was intended to deal broadly with the question of the most effective methods of financing higher education, and with the role and problems of the educational consumer. It was hoped that the Colloquium program would provide a guide to the problems, both present and implied, in current trends of financing higher education and would raise questions regarding the future that the participants could carry back to their own institutions. The role of the speakers, then, was not to present the results of research, but to present and discuss stimulating issues and assist the financial aid officers in looking at some of the implications for the future. That the speakers succeeded in this endeavor I think there can be little doubt.

I will not try to summarize the papers that were presented at the Colloquium and that now appear in this volume. To do so would not do justice to the presentations, for what one person views as important may be entirely irrelevant to another. It may be helpful, however, to review the framework of the program in which the papers were presented.

The initial address "Broadening the Socioeconomic Base of Higher Education in an Era of Rising Costs," by the Honorable Peter H. Dominick, Senator from Colorado, and the paper by Professor Seymour Harris on the economics of higher education, provided for discussions in the relatively broad area of the economic problems of higher education.

From this broad overview there followed discussion of the ways higher education can be financed, in view of the continued rise in the cost of education and society's desire to make higher education more accessible.

Of great concern, with respect to student accessibility to higher education, is the pricing problem of higher education and its concomitant effects on institutions, student choice, and the socioeconomic mix of the student body. It is to this area that the papers presented by Allan Cartter and Fred Glimp were directed. As pointed out in the discussions that followed these papers, some source of funds other than parental income and college endowment must be used if access to higher education is to be broadened.

Given the fact that the resources of society must be used in the support of higher education if accessibility is to be broadened, what is the rationale for society's investment? Economists and sociologists have long been interested in the economic and social returns to the individual and to society that result from investment in higher education. There is

little doubt that there is some return from this kind of investment, and this reason is often advanced in support of proposals to rely upon long-term credit to the individual as the means of financing higher education. It was within this framework that Lee Hansen presented his paper. He left the thought with the Colloquium participants that, while there is a return to society and the individual, reliance on quantitative figures may be misleading, for there is much more work to be done in this area.

From the discussion of the rationale for society's investment, the participants progressed to discussions of the actual investment that is taking place within the public sector in the support of higher education and the broadening of accessibility to higher education. At the same time, alternative measures and future implications must also be of concern.

The United States government has long been a major provider of funds in support of education at all levels. Historically, the support has been directed toward the institutions in terms of grants, appropriations, tax support, and a host of other means. With the growing emphasis on accessibility to higher education for more of America's youth has come an increasing support of programs devoted to student financial aid. The interest of the federal government in educational opportunity was viewed by Peter Muirhead of the Office of Education in his discussion of federal financial aid programs. Within the area of state and local support of higher education, Selma Mushkin raised many questions for the future by projecting the need for expenditures in the decade ahead and the requirements that this expenditure will impose on the financial structure of state and local governments.

While current support of higher education by government is higher than ever before, a feeling exists that much more support is needed. An alternative solution that has been proposed, in lieu of increased direct federal support, is the provision of tax credits for educational expenditures. The pros and cons of such an approach to educational financing and its implications for the future are the target of the papers presented by Roger Freeman and Edwin Young. That the subject proved interesting to the Colloquium participants was demonstrated by the fact that the question and answer period continued long past the normal hour for adjournment.

The final phase of the Colloquium was devoted to some implications for the future in existing student financial aid programs. The growing proliferation of long-term credit for student financing of higher education has become of increasing concern to financial aid officers, and to institutions of higher education. As students continue to make substantial investments in current education from future repayments, what are the implications with respect to individual students and the institutions? In his paper relating to this area, Jack Critchfield gives financial aid officers great food for thought. Although concern has been expressed over the proliferation of loan funds, the judicious use of loans, in combination with other forms of financial assistance, is firmly entrenched in the student financial aid program. Consequently, the availability of funds for the purposes of long-term student credit is of importance. With increasing emphasis being placed on the commercial banking systems as the provider of funds for student credit, the effect of monetary policy on the ability of the banks to make loans is of great interest to financial aid officers. Many implications for the future were presented by Eliot Swan in his discussion of monetary policy and its effects on the financing of higher education.

An area of concern to institutions of higher education and to student financial aid officers is the effect on private philanthropy of the expanding role of government in the provision of student financial aid. The discussion by Robert Kreidler within the framework of support to higher education provided great insight.

While this summary has briefly sketched the framework of the Colloquium and the individual papers collected in this book, there is no way to reflect the discussions and interchanges, in both formal and informal settings, that took place among the participants in the Colloquium. That those who came were interested was evidenced by the fact that there was full attendance at all the sessions, in spite of the many diversions offered by the meeting place.

As director of the Colloquium, I would be remiss if I did not express my appreciation to the speakers for their excellent presentations, to the participants for their warmth and responsiveness, and to the staff of the College Scholarship Service for attending, in such a competent way, to the myriad of administrative details that are involved in such a meeting.

JAMES L. BOWMAN
Director of the Colloquium

April 1967

Higher education: State and local governments[1]

by SELMA J. MUSHKIN

In this era of advancing technology new ideas are needed that can give innovational direction to governmental programing and can help to anticipate and meet not yesterday's problems but tomorrow's. The college stands in the center of idea creation and of the new technology that is in the making, and its tasks grow as the urgency of invention and innovation increases.

At this time a discussion of state and local governments in college and university affairs must start by focusing on the college and university in state and local affairs. The academic community has become a part of public affairs, contributing to new technology in government, advising state and local governmental officials, buttressing their staffs, and aiding in the formulation and expression of public policy.

The growing research task

Through the centuries universities have been centers of research, but research today has taken on a significantly different meaning. Research today demands interdisciplinary cooperation. Its success depends on effective use of the vastly complex technology of research instrumentation. The complexity of research makes it costly; its costliness calls for organization and providing funds.

Prior to World War II total research expenditures in the colleges and universities of this nation amounted to less than $50 million a year. In the 10-year period—from the academic year 1951–52 to the academic year 1961–62—there was a four-and-a-half-fold increase in the annual research expenditures of colleges and universities. In 1965, research outlays exceeded $2.1 billion; and these outlays are expected to reach $4 billion by 1970.

National defense and the economic policy of the nation and of the states have become interwoven in the research policies of colleges and universities. As research in colleges and universities has grown, old traditions of science as an intellectual possession of the university, divorced from day-to-day affairs, have given way to the fulfillment of the requirements of a science-based society. Precedents for reorientation of research are provided by the pattern of interrelated research, education, and community economic activity through the agricultural experiment stations, the land-grant colleges, and agricultural extension work. The coordinated activities of land-grant colleges, experiment stations, and extension services have linked university, community, and government. They have linked the physical and biological sciences to the behavioral sciences and to public policy, helping to formulate that policy, to disseminate it, and to gain its implementation. The pattern was an outstanding social invention of the United States that has been adopted abroad. A spread of that pattern to nonagricultural disciplines as a part of functional federalism is urgently needed. Adoption of the pattern would mark only one step forward. Uniformly, governments are concerned that the research and talent capa-

1. This paper draws on the work of a project of research and education on state and local finances supported by a special grant from the Ford Foundation to The George Washington University, Washington, D. C.

bilities of the colleges and universities be involved in public services, whether the task is applying atomic energy to peacetime uses, or learning about methods of teaching and of learning, or improving the curriculums for elementary and secondary school grades, or improving health services for children, or controlling cancer, or establishing the causes of public dependency, or improving highway construction, or developing new waste-disposal systems "Investment of Federal funds in the Nation's universities," to quote a recent United States Bureau of the Budget report, "has been highly beneficial to both the Government and the universities. . . . The welfare and security of the United States have been materially enhanced through scientific and technological advances which have resulted. American science has pressed to a position of world leadership."[2]

While the availability of federal funds for research upgrades the quality of university staffs, achieves a more favorable faculty-student ratio in graduate schools, and helps to keep teaching programs more in tune with scientific advance, it also creates a series of basic problems for the recipient institutions, including the problems of balance between research and teaching and between the sciences and the humanities. Moreover, concentration of private and federal research funds in the prestige institutions has set off a chain reaction that intensifies the urgent need in other institutions for attracting and retaining well-recognized scholars and research workers.

The national government now has the major responsibility for research and is the major source of funds for this work. Obligational authority for federal research in colleges and universities proper is estimated at $1.5 billion for the fiscal year 1967. Off-campus research at such facilities as the Lincoln Laboratory and Argonne National Laboratory brings the total federal financial commitment for 1967 to about $2.2 billion. If it is assumed that these federal funds will account for three quarters of the total, the amount of research and development in the colleges and universities is set at almost $3 billion in the fiscal year 1967.

Research support by the national government in the universities has been fragmented, and direct relationships have developed between individual agencies of government and specialized constituencies in the academic world. In recognition of these complexities, the Bureau of the Budget, in its March 1966 circular on the administration of government-supported research, focused on aligning the variety of agency policies and procedures and the different legal instruments in use.[3]

The fragmented national programs that encourage the use of college and university facilities for research through project grants need to be evaluated as a step toward broadening the range of interdisciplinary skills that are focused on public problems and encouraging the working together of colleges—both public and private—and community governments. The physical scientist, the engineer, and the city planner must together explore the use of automatic pilot devices in motor cars, the application of computerized systems for traffic controls, and the complex of other emerging problems of highway construction and use. Learning about learning is a task that runs the gamut of the disciplines from physics to psychology, social work, and teaching. The present grant procedures do not give adequate encouragement to interdisciplinary research on public services and facilities. Nor are they structured so that local and state officials have access to the college or university carrying out the research. The perspective of the local decision maker and his identification and definition of the problem issues are not reflected in the research design.

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2. U. S. Bureau of the Budget, *Administration of Government Supported Research at Universities*, Washington, D. C.: U. S. Bureau of the Budget. 1966.

3. *Ibid.*

Broad support of institutional research is needed to encourage colleges and universities to establish interdisciplinary public-services laboratories for working to discover new methods of meeting public-service needs, thus strengthening the scientific base for public policy decisions. Industrial research laboratories today provide the focal point for design of new commercial products, new and improved packaging of products, and ways to reduce costs of production. Similar laboratories are needed for publicly produced goods and services. Only through intensification of research on the affairs of government can there be gained invention and innovation in the public sector, a better public-service package, and reduced costs of producing the services. Despite the variety of missions of the colleges and universities, almost all these institutions have something to contribute to a more scientific approach toward decision making in the public sector.

To make public-services laboratories succeed, college faculties must be prepared to dirty their hands with the problems of governments, and government officials must be prepared to bring their public-service problems to the colleges and to work as teams with college scientists.

More than public-service laboratories is needed. A reward system must be found for both the inventor of new and improved ways of carrying out the public objectives and the innovator who puts them into practice. The patent system works well for hardware, but a system of prizes for the soft goods of social innovation is needed.

Demonstration grants have helped to provide small amounts of "risk" capital for new public services, but until recently the demonstrations were exclusively tied to very specific activities so that program interactions were neglected. Fragmented approaches will not suffice. Better ways must be found to test potential "payoffs" from alternative public-service packages. A systematic search for such program alternatives must be built into state and community planning and budgeting procedures, and the colleges and universities must assist with this vital task.

Title I of the Higher Education Act authorizes grants up to $50 million for each of the two fiscal years 1967 and 1968 for community service and continuing education programs. This is a beginning toward providing funds that I believe could well be used for training public officials so that they may become more familiar with the purposes and techniques for more rational public decision making and for encouraging joint ventures with the colleges in their communities.

But state and local purchases of goods and services exceed those of the national government. State and local general expenditures are now running in the neighborhood of $75 billion a year, and this total is projected for 1970 at $108 billion. Spending of such sums warrants support of research in far larger amounts than are now committed. Americans incur a research and development bill of $15 billion a year for defense and military hardware. A research and development effort on the order of 1 percent of state and local expenditures would be fully justified – for example, $750 million a year now, and $1 billion four years hence.

The notion is not new. For many years state governments have turned to the universities in their states for research and professional assistance in problems concerning taxes, expenditures, and economic development. The use of more scientific approaches to governmental operations is forging a stronger link between governments and the colleges, so that as full a measure of support for research is provided as is feasible. Through a closer working relationship between college and government the issues of public policy that lend themselves to research may be identified, research results relevant to public decision making may be disseminated more quickly, communication may be improved between the scientists and the "rest of the world," and problems in translat-

ing scientific findings into workable governmental instruments may be solved. In this process, college and university research gains added vitality and better informational tools, and governments gain easier access to the brainpower available in the college and university.

State governments can and should join with the national government in fostering public-services laboratories in the nation's colleges and universities. The responsibilities for local government essentially fall on the state, because in law, the local governments are creatures of the state. But more important in our functional federalism, as it has emerged, the state is the only instrumentality that has the power to deal with the interjurisdictional problems of the multiple governments that exist within a single economic region – an economic region that is termed a metropolitan area.

National and state governments and qualified colleges and universities are already involved in a joint enterprise to raise the technological level of American business. The State Technical Services Act of 1965 is intended to develop a five-year plan for the economic and industrial growth in the states and to provide industry with information on scientific advances and with workshops and seminars in advanced technology adaptable to local industries.

A primary mission of colleges and universities is developmental work of another kind, the development of talent, and, I should add, the discovery of that talent.

Education and economic development

Economic research has underscored the importance of investment in people through education as a source of economic growth. Drawing on this finding, state and local governments look to education as a way of carrying out their objectives for economic development. A routine function of state and local governments thus takes on a new vitality as an instrument for achieving economic ends, and added weight is given to the major decisions concerning allocation of resources for education. One-third of all expenditures of states and localities in the fiscal year 1964 was devoted to educational services and facilities; members of school staffs accounted for 48 percent of state and local employees, and the salaries of those staffs accounted for 52 percent of state and local payrolls. Of the total of capital outlays undertaken by the states and localities, more than $5 billion per year or about 24 percent went for schools and related educational facilities.

Governor Brown of California, in his Second Economic Report, stated the economic case for education in this way: "California's educational and scientific community . . . has given our State leadership in an economy increasingly dominated by technology." And he presented as a primary goal, "To maintain our educational advantage. . . . To continue our scientific leadership and build a strong base for the scientific-technological economy of the future."

Preparation of young adults for living, working, and playing in a world in transition is reasonably well accepted as a college-university responsibility. Much less attention has been directed to the role the colleges and universities are being called upon to play in retraining and refreshing the educational capabilities of people in the work force. Scientific advances exact a toll of educational obsolescence, and as technology changes and becomes more complex, so also do the capacities of the men who work with the more complex machines. Occupational skills become outmoded, and the content of the occupations is transformed. The rapid movement that characterizes all this nation's society is spurred by new technology and produces an ever quickening pace of new scientific and technolological advances and of more educational obsolescence. New arrangements for reeducation of people

in the work force are needed, and the responsibility for the new arrangements will of necessity fall on the colleges and universities. Old patterns and methods for short-term and sporadic education of adults will hardly suffice for the task ahead. New teaching methods, new teaching equipment, new facilities will be needed; patterns of training and content need to be experimentally tested. I have presented elsewhere an approach to a system of encouragements for reeducation that would in effect be a sabbatical leave plan for all, at full pay; but for providing educational services there are few alternatives other than college-university programs.[4] Whether the colleges and universities directly undertake to provide the retraining services, or indirectly undertake to supervise and experiment with these services, the involvement in retraining will be sizable. A widened responsibility of universities and colleges for manpower training provides an opportunity for breaking ground in the effective utilization, during the course of the educational process, of the competence of men and women who come from industry and government for refresher education with a knowledge of new research findings and new questions that need to be answered through research. The flow of communication between university and industry would be improved as a consequence.

The financial outlook

The word "challenge" has been used so often in describing the future of higher education that it has come to lose its meaning, but there is a growth process under way that has its origins in the science-based society of today. Expansionary pressures are exerted on the colleges and universities in a continuous pattern with every new enlargement of their functions. And in this growth process some of the issues of a former day lose their meaning. Federal support of higher education is one such issue. The issue of state-supported education versus privately supported education begins to lose its sharpness as state loan and scholarship programs are introduced and expanded and as more extensive sharing of facilities and curriculum offerings takes place without regard to auspices, public or private.

What are the financial prospects for public colleges and universities in the period ahead? About two years ago, as part of a larger study on state-local finances as projected to 1970, my colleagues and I completed a projection of the expenditures of public colleges and universities in the United States, by state, showing separately current operating expenditures for teaching purposes, public services, and research, and also capital outlays for research facilities, dormitories, classrooms, and so forth.[5] Without the help of the educational community and the help of many other people in the several states, this nearly impossible thing could not have been done, and without encouragement, my colleagues and I would not have undertaken to follow through on the next steps of trying to develop better methods for long-term projections. While I am sure that from the point of view of the educational community it is inappropriate to assess the finances of the public colleges and universities *only*, the overall objectives of this study required this limitation.

Project '70, as the study has come to be called, was undertaken for the following purposes: to determine the probable future impact of state and local governmental expenditures on the national economy; to measure the impact of national policy directions on the expenditure programs of the states; to experiment with a new measure of fiscal capacity, a

4. S. J. Mushkin, "Resource Requirements and Educational Obsolescence," in E. A. G. Robinson and J. E. Vaizey, *The Economics of Education*. New York: St. Martin's Press, 1966, pp. 463–478.

5. S. J. Mushkin and E. McLoone, *Public Spending for Higher Education, 1970*. Chicago: Council of State Governments, February 1965.

measure that would help answer the question: What are the differences in the capacity of the states to meet their future expenditure requirements?

More than a research objective was in mind: it was planned that the study be conducted in such a way that the states would be involved in the processes of projection and would be encouraged through this involvement to engage in their own advance fiscal planning and programing.

The study projected 1970 expenditures for teaching, public services, and research in the public institutions at more than two and one-half times the nation's base year 1961–62 level, or $7.6 billion.[6] If one applies the United States Office of Education's ratios of public and private college and university expenditures to that $7.6 billion figure, spending in 1970 for teaching, public services, and research in all institutions of higher education would amount to about $12.3 billion. The study earlier projected $4.1 billion as the amount of 1970 outlays for organized research in public and private institutions combined; and the remainder, $8.2 billion, would be the expenditure for teaching and public services. Including construction outlays, but excluding auxiliary enterprises and student aid, public and private colleges and universities will be spending almost $17 billion by 1970. When one considers that a decade ago higher education was about a $3 billion annual affair, one begins to grasp something of the magnitude of the expansionary forces at work. If the full range of tasks in support of governmental affairs and of manpower training and retraining were undertaken by the colleges and universities in the years ahead, the total spending would be enlarged further, adding to the financial requirements of higher education and the commitment of the nation and the states to it.

Enrollment growth. Five years or so ago, public concern centered on the capacity of the nation's colleges and universities to meet the mounting number of young people of college age. Autumn of the peak year – 1965 – came and has passed; the one million additional 18-year-olds, compared with the number five years earlier, and the 1.5 million added number of 18-year-olds over the decade resulted in a rise in first-time enrollments that was greater proportionately than population growth. Despite allowances for an increase in college attendance among American youth, the United States Office of Education had underprojected enrollments by about 4.5 percent. In the academic year 1966–67 the number of 18-year-olds will drop off and will continue to be below the 1965 peak for almost five years. The colleges and universities thus can look back at the past crisis in freshman enrollment. There is no reason to expect that total enrollment will not climb above the 1965 level, but only that the population pressures on enrollment have abated somewhat. And the graduate-school enrollment peak lies ahead.

Total enrollment is projected to reach almost 7.7 million by 1970 and 9.5 million by 1975.[7] In arriving at these projections my colleagues and I started with the number of people in the age bracket 18 to 21 years in order to include the high school classes that would be graduated in the four years just prior to 1970. In each state the percentage of high school graduates going to college, on the basis of 1963 data, was increased to reflect recent efforts to reduce the high school dropout rate and to encourage young people to complete their education, and to reflect also the increasing proportion of young people who come from families that have had some college experience.

In reviewing the state-by-state figures, it is important to bear in mind that the proportion of young people in the population varies from state to state, that the proportion of 18-year-olds graduating from high school varies similarly as does the proportion of high school graduates that go on to college, and that in-

6. *Ibid.*

7. *Ibid.*

terstate migration for college attendance differs markedly in different states. In developing the estimates, it was assumed that the proportion of out-of-state college students would remain unchanged and that college attendance by out-of-state students would be proportionate to the figure reported earlier. More specifically it was assumed that 12 percent of the students would be enrolled outside of their state of residence.

Public college and university enrollment was derived by subtracting the projected private school enrollments from the projected total enrollments. The numbers enrolled in private institutions were computed as a trend value over the period 1955 to 1963. This procedure is based on the assumption that the demand for higher education will be met and that that portion of the demand not accommodated by growth in private institutions will be met by the increase in the number of places in public institutions.

The growth in enrollments in public institutions is largest in the states in which private colleges and universities have been predominant in the past – in New England and in the Middle Eastern states.

Starting with the projected enrollments in public colleges and universities, my colleagues and I built assumption on assumption into a pyramid that yielded the final figures on additional fund requirements in each state. We converted the enrollment figures into full-time equivalents, applying concepts of full-time equivalents in undergraduate work used by the Office of Education,[8] and by Thad Hungate in his study *A New Basis of Support for Higher Education*,[9] and in a definition developed for graduate students by John Jamerich in his study for the New York State Committee on Higher Education.[10]

Expenditures per full-time student. An estimated student higher education expenditure per full-time student equivalent was computed for base year 1961–62 to 1970, allowing separately for increases in expenditures for personal services and in expenditures for commodities or contractual services. Over the period, average wage and salary payments are projected to rise about 33 percent for the nation as a whole, state-by-state differences reflecting past trends in nonfarm wages and salaries. In each state, salaries in institutions of higher education have been assumed to rise 1.5 times as much as do other wages and salaries in each state, or by about 50 percent over the 1961–62 base year.

It is further assumed, however, that student-faculty ratios also will rise by 1970. A 20 percent enlargement in staff utilization is assumed, on the basis of an analysis made by the Office of Education.[11] This early Office of Education study noted that the 20 percent rise in student-staff ratios was assumed as the maximum allowance that could be made without building in a planned reduction in quality, especially in view of the probable increase in the proportion of graduate students.

Expenditures other than payroll costs are projected on the assumption of a growth in such expenditures proportionate to increases in enrollment, with a further allowance for underlying price increases.

On balance, student higher education ex-

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8. F. H. I. Lindsay, *Financial Statistics of Institutions of Higher Education, 1959–60.* Washington, D. C.: U. S. Department of Health, Education, and Welfare, Office of Education, 1964, p. 50.

9. T. L. Hungate, *A New Basis of Support for Higher Education.* New York: Bureau of Publications, Teachers College, Columbia University, 1957.

10. J. Jamerich, unpublished preliminary manuscript for the New York State Committee on Higher Education. See: *Meeting the Increasing Demand for Higher Education in New York State, A Report to the Governor and the Board of Regents.* Albany, N. Y.: State Education Department, November 1960.

11. U. S. Department of Health, Education, and Welfare, Office of Education, *Ten-Year Objectives in Education; Higher Education Staffing and Physical Facilities, 1960–61 through 1969–70.* Washington, D. C.: U. S. Department of Health, Education, and Welfare, Office of Education, 1961, p. 9.

penditures per full-time student equivalent are projected for the United States to increase by 18 percent; without an allowance for the increase in student-faculty ratio, the comparable figure would be 41 percent.

In the academic year 1961–62, $1.8 billion of the $3 billion expenditures of public colleges and universities for teaching, research, and public services went for teaching, including in teaching expenditures an allocated part of overhead costs.

Revenues. In 1961–62, tuition and other fees provided 21 percent of the funds of public colleges and universities, federal payments almost 8 percent, and state and local tax funds 68 percent, or $1.2 billion of the $1.8 billion aggregate.[12]

For 1970, sources of funds also were balanced against projected student higher education expenditures. In each state, tuition payments per student are assumed to increase in proportion to the projected rise in family income. Federal payments are assumed to reach $200 million. (The proposed reduction in land-grant college aid is not reflected in this estimate.) State and local tax funds are projected to grow in response to economic growth. Essentially, the estimates of state tax revenues seek to measure the rise in tax yields, given the increased income in each state. The state tax estimates accordingly assume that there will be no changes in tax rates and no new taxes. In other words, the amount of state and local funds projected represents the enlarged public contribution to colleges and universities as a consequence of higher economic activity. State tax yields are estimated to rise 63.1 percent by 1970 throughout the nation, without additional tax levies, and accordingly the 1961–62 estimates of state and local tax funds were increased by the corresponding percentages for each state.

That portion of endowment earnings, gifts, and grants, as well as other income attributed to student higher education in 1961–62, was projected to be doubled by 1970. This doubling is consistent with the pattern of growth in gifts and endowment earnings in recent years and is below the target set by the Council for Financial Aid to Education.

The estimates of revenue by source, when compared with estimated student higher education expenditures, indicate a residual unfinanced amount, for teaching alone, of approximately $1 billion in 1970 in the nation as a whole. The additional funds required are also estimated for each state. For example, New York's deficit is estimated at $185 million, Maryland's at about $8.5 million. The size of the additional sums that would be needed is influenced greatly by out-of-state college attendance. If, in the face of large demands for education, additional restrictions are imposed on admission of nonresident students by the public colleges and universities, and migration of students is reduced as a consequence, without an offsetting enlargement of tuition charges, the state and local tax funds required in some states may exceed those estimated.

The estimated 1970 deficiency is almost as large as was total state and local governmental spending out of general tax funds for teaching purposes in public colleges and universities in 1961–62. State and local tax funds devoted to teaching are estimated at $1.2 billion for 1962. To finance the necessary teaching costs of 1970, states and communities will have to increase their tax contribution to $3 billion. Almost half of the increase may be expected to come from the higher tax yields associated with economic growth, but the financing of the remaining $1 billion requires new sources of financing.

Financing the teaching of students is only part of the educational problem before the states, for in addition large sums are needed for college and university plants. In the projections presented here, approximately $3.5 billion will be spent by the colleges and universities for facilities in 1970. While dormitory

12. Mushkin, *Op. cit.*

loans and federal and foundation assistance may substantially finance the costs of constructing the required student residences and research facilities, approximately $2.2 billion for teaching and other facilities will have to be financed. Under the present college facilities programs in which the national government participates, including the special programs for medical and dental school facilities, an additional half a billion may be provided by federal moneys. The remaining $1.7 billion will have to be paid for by the public colleges and universities, an amount perhaps $1.0 billion in excess of what those colleges and universities are now spending for teaching facilities, and $700 million in excess of 1961–62 capital outlays for all types of public college and university facilities, including research facilities and dormitories.

My colleagues and I have attempted to review the projections that were completed almost two years ago and to assess those projections in the light of more recent information from the Governments Division of the Bureau of the Census[13] and the Office of Education.[14]

This reassessment suggests the following. Our 1970 projections of enrollment are on the course that enrollments have been following during the last two academic years. However, there are some indications that freshman enrollments in 1966 will be below the level anticipated earlier. Capital outlays and current operating expenditures are not increasing quite as much as was projected, but the rise in enrollments in the higher-cost graduate schools is still ahead, and it is perhaps too early to judge.

State and local tax funds for public institutions have increased, and the record during the past two years is somewhat better than it was prior to that time. When I assessed state and local funds for public colleges back in 1960 or so, I concluded that state and local tax funds increased only in proportion to enrollments. Or in other words, additional students were accommodated but funds were not made available for quality improvement. M. M. Chambers' figures are the only ones now available for recent years.[15] He reports a 39 percent increase in tax funds during the period 1964–66 – a period in which public college and university enrollments rose 29 percent. Competitive pay increases (defined as increases proportionate to nonfarm wages and salaries) absorbed most of the 10 percent margin. Similar comparisons of state tax funds and enrollments show wide variations among states; many jurisdictions increase tax funds only in proportion to the growth in enrollments.

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13. U. S. Bureau of the Census, Governments Division, *Compendium of State Government Finances in 1965*. Washington, D. C.: Government Printing Office, 1966.

14. U. S. Department of Health, Education, and Welfare, Office of Education, *Opening Fall Enrollment in Higher Education, 1965*. Washington, D. C.: Government Printing Office, 1966.

15. M. M. Chambers, *Appropriations of State Tax Funds for Operating Expenses of Higher Education, 1965–66*. Washington, D. C.: Office of Institutional Research, National Association of State Universities and Land-Grant Colleges, 1965.