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ABSTRACT

The impact of recent national economic trends on both public and private institutions is discussed. Tuition and student charges have continued to increase to help meet escalating institutional expenditures, much of which is due to national inflation. It is contended that there is much evidence of an abating of these economic conditions, as well as encouraging signs that higher education has passed through the financial crisis of the early 1970's. However, there still is a "confidence" crisis afflicting higher education, which may not diminish until institutions spell out more clearly to their various funding public how the student is being served. A set of comprehensive indicators of institutional health, to be developed nationwide with federal and state cooperation, is advocated that should receive the highest legislative priority. (LBH)

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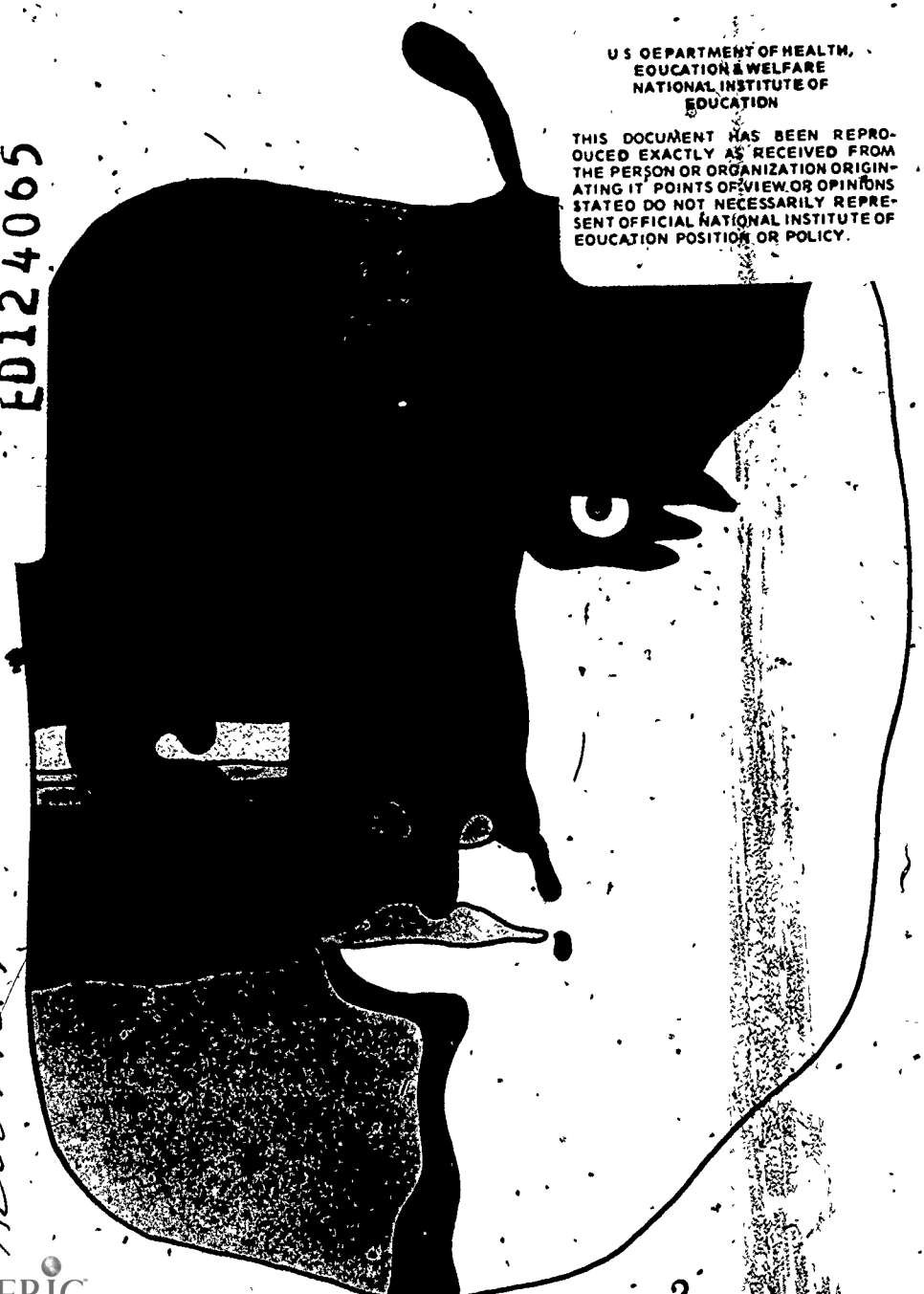

Higher Education and the Economy

Hans H. Jenny

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Foreword

Recent national economic trends have had a profound impact on both public and private institutions. Tuition and student charges have continued their upward spiral to help meet the unrelenting escalation of institutional expenditures, much of it due to an unbridled rate of national inflation. The author believes there is much evidence of an abating of these doleful economic conditions, and encouraging signs that higher education has weathered the financial storm of the early 1970's. However, he counsels there is still a "confidence" crisis afflicting higher education, which may not diminish until institutions spell out more clearly to their various funding publics how the student is being served. In this regard, Jenny believes a set of comprehensive indicators of institutional health should be developed nationwide, with federal and state cooperation, which should receive the highest legislative priority. Hans Jenny is Vice President for Business and Finance, The College of Wooster, Wooster, Ohio.

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Overview

Higher education has recently experienced its own "depression" in part caused by political action affecting the funding of higher educational programs, and in part caused by the recession and depression in the general economy. An early source of trouble were sharp changes in enrollments.

Today, higher education appears to be emerging somewhat stronger from the economic onslought, although with budgets that have diminished significantly in their purchasing power. When the economic decline set in during the late 1960's and early 1970's, there were many who sensed that the groves of academe had become rich playgrounds and that much fat had been accumulating without which the quality of education and research might in fact be better off.

There can be little doubt that the budget trimming of the last several years has been taking place and that on the whole institutions have weathered the often sizeable adjustments rather well. There exist a number of trouble spots, to be sure, and there is great uncertainty as to whether the nation has a discernible policy in educational affairs. But even if superficial impressions are permissible, the present evidence suggests that both private and public higher education are viable and that the majority of institutions have proven they are capable of making significant as well as painful adjustments if necessary.

There also is evidence that we are beginning to better understand how higher education functions. An important contribution to our knowledge comes from the demand studies described in this essay. They should help legislators formulate student aid policy, as they struggle with the question of who should have access to higher education and how much individual freedom of choice unobstructed by inability to pay there should be. The demand studies can also be useful to institutional policy makers.

When the national economic depression deepened, higher educational enrollments seemed to improve and a type of countercyclical benefit came to the rescue of the industry at a very opportune time. Unfortunately, not all institutions were able to take advantage of the suddenly favorable enrollment situation, in particular some of the state institutions whose budgets had been in anticipation of fewer students. But where the increased enrollment impact was being

felt, institutional revenues improved and with them the short-term financial condition. In the rush for students, however, some private institutions appear to have over-extended their student aid obligations for future years; thus, their financial strength is actually eroding.

Other higher education revenues suffered temporarily in the aftermath of external economic contraction. The plight of endowments has been publicized widely, and in many institutions alumni giving has been affected by the economic depression. But here again, more recent events point to improved conditions, and endowment and gift income may again become a fundamentally stabilizing influence among recipient institutions. In contrast, government appropriations continue to be fraught with uncertainty; recent reports concerning state funding of publicly controlled institutions point to more difficult times ahead.

If tuition and student charges have continued their uninterrupted advance, a key reason for this has been the unrelenting escalation of institutional expenditures. This escalation has proceeded in spite of the much advertised retrenchments. A primary factor bringing about this expenditure growth has been the rapid national inflation and, of late, the sharp increase in the cost of utilities.

Another reason for higher educational expenditure growth arises because of the service industry character of college and university activity. This essay describes some recent efforts of higher education inflation measurement. While there has been considerable progress, there still does not exist a set of appropriate instruments that would allow policy makers to have accurate knowledge of higher education inflation and productivity. But present developments suggest that help may just be around the corner.

This essay touches on several recent studies that might help policy makers within institutions and in government. Thus, there are highlights of endowment management guidelines, comments about alternate statistical information, and in the penultimate chapter a summary of two recent surveys of the financial condition of higher educational institutions. The differences and similarities in the two studies should be convincing evidence that much work is needed in the art of evaluating the performance of higher education. Both of the studies cited make recommendations and both point in new directions.

We can only hope that general readers and policy makers alike will see the merit of what is being said in these studies so that we may proceed toward improved understanding with some of the new tools being described.

Introduction

Higher education is poised at or moving along the jagged crestline of an as yet not clearly discernible watershed. After scaling unprecedented peaks in enrollments and budgets, and after an explosion of research, public service and, at times, even bizarre educational activities, there followed a quick descent into what many have called the depression in higher education.

At this writing, somewhat chastened, considerably leaner in terms of the number of institutions, the scope of their activities, and their expectations, higher education appears to be regaining some semblance of at least temporary stability. There is much evidence of a turning around, of the coming-out-of-the-slump into which higher education fell during the early 1970's.

Economic events have been the dominant and most persistent concern of institutional managers and planners, but the social and political climate in which colleges and universities must function frequently has also been unsettling and often hostile. The Kent State affair, preceded by the Berkeley demonstrations, brought a new dimension to university and campus life, altering fundamentally the human relations aspect that had been one of the features distinguishing American higher education from foreign university life. This was followed by the revolution in official student life styles: the revolution in sexual mores may have been more imagined than real, but the advent of drugs hit universities and colleges with a vengeance.

One immediate reaction came from certain state legislative bodies, and it was felt by publicly controlled institutions both in its negative impact on budgets and through the hostile rhetoric that became fashionable in some of the state capitals. But government embraced higher education in other ways. While federal lawmakers enacted landmark legislation, in responding to the enacted mandates, federal administrators designed ever more complicated, often duplicative, and increasingly costly compliance regulations. At one time institutions looked to state and federal governments as friendly allies in a common cause; now institutions are keenly aware of the power wielded by a bureaucracy that can withhold essential operating funds if it believes that an institution is not living up to the letter of its everchanging regulations.

Another significant alteration in the climate in which higher educa-

tion functions came to employee-employer relations with the spreading practice of collective bargaining and of faculty unionization. And as if the confrontations between administrators and faculty were not enough of a novelty to which both sides would have to get accustomed, higher education itself was called into question as a useful pursuit. Those who like to look at education with an eye that focuses on manpower needs began to see all manner of redundancies in allegedly no-longer-needed educational, research, and doctoral programs, lest these produce vast future manpower surpluses or displacements.

Surely, these and other noneconomic events must be viewed as phenomena no less complex, causing widespread managerial puzzlement, than the volatile national financial arena. It is worth mentioning that within the higher education community a pronounced malaise seemed to be spreading while external forces were shaping and changing the conditions and climate in which it must function. What is the mission of higher education? What objectives should individual institutions set for themselves? How should institutional and public policies interact? A plethora of task forces have addressed such questions, but in a rapidly changing world, where individual institutions are redefining their missions and objectives, the higher education industry still is searching for its proper identity.

Higher education as an industry seems to have weathered with remarkable vigor and success its first significant contretemps since the 1950's (Howard Bowen 1975). This is especially remarkable when one considers how slowly institutions respond to current events due to the peculiar form of governance that is higher education's contribution to management technique. While there have been significant advances in the art and science of institutional planning, the lead time for decision making and institutional change is long and often exceeds eighteen months.

However, higher education's reaction time may be sorely tested in the near future. Over the not very distant horizon lurks the certainty of deteriorating enrollment prospects for the age group that traditionally has supplied the bulk of college and university teenage undergraduates. The Carnegie Council on Policy Studies among others has produced alternate estimates of future higher education enrollments (The Carnegie Commission on Higher Education 1973), and Lyman Glenny's downward sloping enrollment curve is by now almost in the nature of a statistical cliché. The Radner-Miller (1975) projections assume a significant decline in high school graduates be-

tween 1980 and 1985 (−13 percent) followed by an increase by 1990 (+5.4 percent).

The specter of massively lower enrollments in *teenage* freshman fall registrations is beginning to have its impact on institutions as they plan ahead or try to amidst somewhat conflicting estimates of future demand. Higher educational institutions need not view their future missions within an enrollment constraint that is defined by the age groups they have served well traditionally. Many institutions already are addressing themselves to a diverse student clientele. But they are able to do this because they are located in appropriate markets, because they offer classes at convenient hours and on subjects that are in demand or, as in the case of publicly controlled institutions, because they charge prices (after state subsidies) that attract a different clientele of undergraduate students. At any rate, given the demographic evidence before us, *the probable shrinking of the teenage demand for higher educational undergraduate services is* the single most salient fact confronting all institutions as they contemplate the no-longer-distant 1980's.

For most of higher education and those charged with the planning and financing of its future, the prospect of declining traditional undergraduate enrollments is unnerving, to say the least, and full of promise for as yet unforeseen change. While the event lies in the future, the solution of the anticipated problem must begin today. Institutions and planners know this; policy makers know this, for they talk about the issues incessantly. The malaise stems from the fact that so little seems to be happening. Thus, we can observe with considerable satisfaction how recent events have been shaping higher education and how the latter seems to have overcome great difficulties. Current evidence about planning seems to be pointing to a less optimistic conclusion with respect to the future, at least as it may affect some individual groups of colleges and universities.

This essay will attempt to provide a somewhat personalized sketch of how certain economic, social, and political events of recent years have been affecting higher education. The exposition will be based on pertinent literature and on the author's experience and perceptions. Economic and financial events will be emphasized and the primary focus will be on undergraduate education.

Higher Education and the National Economy

Conventional wisdom might conclude that the depression in higher education had its roots in the recession that has befallen the national economy since 1968. To some extent this is true, but it is far less so than many presume.

According to prevailing economic doctrine, one way to describe the business cycle is by measuring long-range changes in effective aggregate demand. A significant and protracted decline in aggregate demand can or will lead to either a recession or a depression. An economic recovery could not exist until aggregate effective demand started to grow again, as seems to be the case in the present economic recovery. Faith in whether a recovery will be sustained depends upon how persistently aggregate demand is growing.

The terms recession and depression have very unsavory connotations for at least two reasons. When aggregate demand continues to decline, the number of business failures tends to increase and unemployment spreads. The rate at which unemployment grows is a measure of the severity of the economic contraction. One reason why the latest such contraction has been called a depression is that the unemployment level increased on the average to more than 9 percent of the labor force. Double digit unemployment rates among teenagers and among certain industrial sectors have also been common and persist to this day. In a classic economic recovery, aggregate demand will improve first, after which unemployment will begin to decline if the pickup demand persists and is strong enough to eliminate industrial inventories. Normally, unemployment will last well into a recovery phase and lessen but gradually.

To understand what may be meant by a depression in higher education, it is necessary to know something of how this particular industry functions. The aggregate level of economic activity is determined by the amount of specific and historical sources of revenues that are available to the industry at any one time. Contrary to what happens in the economy at large, say in industry and commerce, *total revenues* are not directly and solely related to the demand for educational services. Depending on whether we observe privately or publicly controlled colleges and universities, the structure of revenues differs significantly as do the factors that determine their size.

Conventionally, we distinguish among the following major types of

revenues in higher education: net tuition revenue, which in the aggregate is a function of a given number of students paying a specific net price; state government appropriations, which on the basis of varying formulas provides publicly controlled institutions (in some states, privately controlled institutions as well) with revenues on behalf of enrolled students; revenue from gifts from individuals, corporations, and independent foundations; revenues from invested endowment funds, revenue from federal government grants, mostly for research, plant construction, equipment purchases, and student aid; and revenues from the sale of certain services other than instruction, such as research, and the traditional room-and-board and college stores services. In addition, both state and federal governments provide loans to institutions for student aid and construction.

In higher education, institutional budgets depend at the undergraduate level primarily upon revenues derived from student charges (for private institutions) and from student charges plus state, county, or local government appropriations (for public institutions). Here we are referring to total student charges, including tuition, room, board, and miscellaneous required fees net of student aid grants. Whatever the type of college or university studied, these student-centered revenues represent the overwhelming majority of the funds available in support of undergraduate expenditure budgets. Although the sources and structure of student aid funds available today to specific institutions complicates the picture, the foregoing conclusion does not change.

At the undergraduate level, using the model of the private four-year college or university, endowment income and revenues from philanthropy represent a significant percentage of total revenues in this sector. However, the weight of this income has been declining, its normal range currently being somewhere between 15 and 25 percent of total undergraduate revenues. Among publicly controlled institutions, endowment income and gifts on balance represent less than 5 percent of total income available for undergraduate activity.

The federal and state investments in student aid are very large; however, federal appropriations to institutions play a relatively small role in undergraduate educational budgets. At the undergraduate level, the federal dollar makes its appearance chiefly in capital budgets and in the support of research and debt interest (subsidy) expenditures. The bulk of the federal appropriations other than those for student aid goes to graduate education, graduate or advanced research, and public service activities.

A depression in higher education would occur if one of these major revenues declined significantly and persistently, or suddenly, as happened between 1971 and 1972 when the federal government and many state and other public revenue sources reduced their support of graduate education and advanced research (NCFPSE 1973). A protracted reduction in the public support of higher education may or may not be in response to falling enrollments. During the early 1970's there was much talk of "new" priorities, of the fact that higher education no longer enjoyed the public's unquestioning faith. In the public sector, higher educational institutions receive the bulk of their support from tax revenues, and tax revenues are always under pressure when the general economy dips into a recession. Thus, independent of what may be happening to enrollments or, more to the point, what the trend may be in applications by potential students to colleges and universities, changes in institutional revenue will depend on what is taking place in the general economy and in government fiscal policy.

The trends in the scope of public funding of higher educational institutions may in turn affect the levels and trends in enrollment. The rapid growth in public funding made possible the enrollment explosion of the 1960's. Conversely, retrenchment in public funding during the 1970's has resulted in "enrollment rationing" by publicly controlled institutions whose government controlled budgets could not accommodate all the potential students who applied for admission between 1974 and 1975.

Similarly, if trends in the general economy produce a reduction in endowment earnings or in general philanthropic support, college and university budgets will begin to show operating deficits and eventually expenditures must be reduced. Such retrenching may become necessary even when student demand for educational services has not declined. Thus, again, a general economic recession can and will induce a recession in higher educational institutions that must rely heavily on revenues that fluctuate in concert with general economic trends.

An important fact of higher educational economics is that institutions differ widely in their dependence on these particular sources of revenue: endowment income and gifts. In some instances, their weight as a percentage of total revenues is small, and in numerous cases the dollar amounts also are small. Therefore, recessionary manifestations at large do not always have serious internal economic consequences. Overall, publicly controlled colleges and universities will be affected the least, since endowment income and gifts normally

represent only a small percentage of total revenues. But there are noteworthy exceptions, and even the marginal impact can be severe if it jeopardizes that "edge of quality" that these institutions say is provided by these revenues.

Privately controlled colleges and universities are more likely to be affected should general recessionary economic trends reduce endowment income and gifts. Among these institutions the dependency on this type of revenue tends to be significant and widespread. Thus when endowment revenues falter, the entire private sector tends to be affected, and most particularly those well known universities and colleges with substantial endowments. The fact that large endowments make a college look rich does not change the devastation that can take place in one's budget if general recessionary forces produce a 20 to 30 percent drop in endowment income. And should the decline continue, the budget effect may eventually be reflected in the number and quality of educational programs and other services available to students. In a highly competitive higher educational market this in turn may cause some students to look elsewhere in the hope or with the knowledge that they can find there what the affected institutions are no longer offering.

The most severe and central manifestation of recession in higher education generally and within institutions occurs when enrollments begin to decline and when this decline persists over time. Relatively small enrollment decreases can produce large revenue reductions, and colleges and universities who have had the experience know that revenues tend to fall faster than expenditures, particularly within the current budget period. *The enrollment recession differs significantly in its nature from other types of revenue recessions mentioned earlier.* Protracted enrollment reductions are certain to lead to teaching staff retrenchment, and this in turn will signify at some point that the nature of the educational program will be affected. Of course, as the critics of higher education have pointed out repeatedly, the need to rethink what and how we teach has always been there, and if it should take a few "lynchings" to get the process underway, so be it. Whether the best thoughts are mobilized during economic recessions and amidst economic retrenchment remains open to question (Boulding 1975).

As one looks at the management of economic decline elsewhere in the national economy, for instance in industry and commerce, one is struck by the popularity of firings in the name of "efficiency" and greater "productivity." As sales decline, production is reduced and with it employment. The costs of the recession are rolled over onto

society, that normally is not equipped to handle the situation except for short durations. Recessions in business do not appear to be characterized by excessive imagination or creativity; rather they are the result of less and less spending in all those areas where spending might help turn things around. During the downward slope of the business cycle, innovation and venturesomeness appear to be infrequent commodities. *Venture capital,* a scare item in higher education even under the best of circumstances, will be lacking almost totally during a period of economic contraction. And whether managerial or service innovation can flourish in higher education when it faces a recession remains to be seen.

Inflation is another economic condition that affects higher education programs and policies. Economists are interested in real rather than simply monetary events. Thus when the discussion is about recessions and economic recovery, we ultimately are concerned with the purchasing power of the several types of revenue that are available to colleges and universities. During periods of rapid inflation an illusion of economic expansion may persist for a considerable number of months, perhaps even for several years. Budgets may in fact increase and support the idea that there is growth; but if the rate of inflation exceeds the rate of growth in budgets, the economy or the industry in question is actually declining in real terms.

Therefore it is important to remember that a real recession can have begun while current dollar outlays continue to grow. In higher education the danger of internal inflation is particularly great, since such a large segment of aggregate expenditures represents labor costs. Higher education is part of what the Bureau of Economic Research has called the "third" sector of the economy or the service sector. Although there is evidence that over time technology helps improve service sector productivity, such increases tend to be smaller than those we expect from industry, and on the whole they happen less often or at longer intervals. Depending on the severity of inflation in higher education, recessions will tend to be "hidden" for protracted periods or they will become "overt." But without proper measuring tools the extent of the problem will be difficult to assess.

In conclusion, then, we know that a recession at large can cause economic downturns in higher education; we further know that there can exist internal economic contraction within higher education without the need for a general recession. We have not yet said anything about some possible stabilizing effect that a general recession with rising unemployment may produce within higher education. For instance, if jobs are scarce, students may prefer to stay in school

rather than to drop out; and given the need-based nature of most student financial aid practice, some of the otherwise unemployed may actually be induced to enter colleges and universities. During recent recessions, net attrition rates declined noticeably, thus contributing to relatively more enrollment stability within higher education than would otherwise have been the case.

Given the foregoing general sketch, it is now time to turn to some of the specific manifestations of the recession in higher education We shall consider student demand and institutional purchasing power. And we shall take a look at what is known of the changing financial condition of colleges and universities. Finally we shall ask whether there have occurred significant changes in college and university expenditures, and if there have been such changes, what this may portend for the future of higher education.

Recession and Sources of Higher Education Revenues

Among the types of higher education revenues we shall briefly consider the following: enrollment or student demand, endowment investments, philanthropic or gift support, and government appropriations.

Enrollment or Student Demand

Enrollment or student demand is the central variable that influences college and university financial well being. When institutions finally falter economically, the primary reason is that their enrollment foundation has eroded. Many forces can contribute to the decline in enrollments, beyond some indeterminate point, a continuation of enrollment erosion will signal the institution's financial demise.

Therefore it is not surprising that enrollment and student demand studies have of late become paramount in the literature that deals with economic and managerial issues in higher education. The National Commission on the Financing of Postsecondary Education made the issues of student access and choice a central focus of its analytical and financial discussions. The Carnegie Commission on Higher Education has devoted several of its studies to questions relating directly or indirectly to student demand. And several of the nation's leading university graduate programs in higher education have been sponsoring research into the nature, scope, and causes of student demand for higher education. Demand studies stood at the center of the recommendations the Committee on Economic Development made on behalf of higher education just three years ago (Committee For Economic Development 1973)

Among the names that come to mind, the following represent but a fragmentary listing of the increasing number of scholars who have found professional satisfaction in this particular subject: Astin, Balderston, Bowker, Bowles, Campbell, Cartter, Coleman, Corazzini, Denison, Feldman, Froomkin, Haggstrom, Hoenack, Jewett, Kolin, Manski, Miller, Mundel, Spiegel, Solow, and Radner. These are by no means all of the noteworthy contributors, but these names crop up without fail as essential references (Radner and Miller 1975).

The specific questions that the analysts have asked cover a wide

spectrum. For instance, Astin is known for his studies on student achievement, institutional selectivity, and institutional quality. Bowles has applied econometric techniques to demand analysis. Froomkin has focused on student demand forecasting. Hoenack has studied student aid for the State of California and has written on the efficient allocation of public subsidies to students. Miller and Radner, a research team that has functioned for some time now, have developed models in the analysis of supply and demand in higher education, and Radner has encouraged a significant number of studies by his graduate students since the 1960s, all of them dealing with specific aspects of the higher education enrollment or student demand problem.

The forecasting of student demand is as important as it is elusive. Forecasts are needed by institutions for their internal planning and by state and federal agencies in the planning of educational systems and the financial measures and policies that will allow these systems to function effectively. A frequent question is What kind of enrollment response will result from specific financing schemes and from specific price changes? Since the issue of access to higher education has important political ramifications, the National Commission made some calculations and developed a tentative framework for analyzing financing policies where student demand analysis was a central feature (Carlson et al., 1974).

George Weathersby and Gregory Jackson describe some of the findings of seven student demand studies in "Individual Demand for Higher Education." Some useful conclusions emerge that are not overly startling but somewhat more authoritative than common sense and informal experience alone would make them. Furthermore, some of the studies provide a sense of precision as well as a methodology for others to employ and test. The most important finding provided by the Weathersby-Jackson comparison is that demand studies tend to confirm a general conclusion on the effects of price changes on individual demand in higher education:

- Potential students are sensitive to price changes;
- Applicants from low income backgrounds respond more to price changes in higher education than do applicants from middle or high income families;
- Price increases reduce the proportion of individuals who attend higher education; and
- Weathersby and Jackson estimate from these and their own studies that a price change of $100 will "induce an average change of

2.5% in the enrollment in higher education under 1974 conditions" (Weathersby and Jackson 1975, p. 2).

The demand studies that lead to these conclusions are not yet as refined as one should wish. For instance, they omit the impact produced by the total student financial aid package that normally includes loans, grants, and work. For this the researchers should not be blamed; unfortunately, not enough reliable net price and structured student aid data have been available in the appropriate forms required for this type of analysis. Given enough time, more comprehensive studies will be undertaken.

However, an important finding for policy guidance has been established: unbridled inflation in higher education is detrimental to enrollment growth, and it is particularly harmful to those interested in higher education who come from low-income backgrounds. Since one of the chief reasons for continued price increases is the labor intensive nature of production in higher educational institutions, the demand study findings provide a rationale for subsidies to low-income students. And because of unrelenting upward price pressures, they eventually become a rationale for extending such subsidies to other income groups as these increases reduce their ability to enroll.

We said that these findings are not startling. It would have been surprising if the law of supply and demand did not function in the market of higher education. But the increased legitimacy that these studies provide is welcome and should be of some help to policy makers.

It is of course important to realize that higher education already subsidizes students in every institution. Generally, student revenues do not defray the total cost of education. Tax monies, gifts, and endowment income supplement what the students do not provide. And independent of specific student aid subsidies provided by governments, public and private institutions give discounts to many students who otherwise might not be able to attend higher education institutions.

Price discrimination that otherwise is illegal both under state and federal laws is encouraged on the broadest possible scale in higher education. Even in a relatively small college where the enrollment does not exceed 1,500 students, there may exist more than 100 different net prices in response to the degree of demand elasticity spoken of in many studies.

The available price range is further enlarged when we recall that in the publicly controlled institutions tuitions tend to be much lower than in most privately controlled ones, that publicly controlled

institutions also grant discounts below their official prices, and that community colleges have even lower prices than established state colleges and universities. Some public institutions provide tuition-free education. So, the potential customer has quite a range of prices to choose from. But can this customer choose the institution of his first preference? If demand studies find their impetus because policy makers are concerned with the question of access, the findings really tell us something about the sort of financing policy that ought to be helpful in promoting individual free choice about where one prefers to be educated.

An example of a study concerned with more global or general answers is the latest work published by the Carnegie Commission, a Radner-Miller production with support from Adkins and Balderston, entitled *Demand and Supply in U. S. Higher Education*. Closely related to this study and contributing essential background data to it is Adkins' *The Great American Degree Machine*, also sponsored by the Carnegie Commission.

The Adkins' study represents a monumental analysis of the human resources output of higher education from 1890 through 1971. It produces estimates of the annual output of academic degrees by level and academic specialty. The estimates are presented for age groupings, by sex, for three levels of degree and for 44 academic specialties. At the heart of the study lies a so-called "stock-transition" model from which the degree population estimates are derived.

The author obviously likes the "machine" image (as he calls it) that the growth and expansion of the academic degree population suggests. The number of academic degree holders advanced four times as fast as the adult population between 1930 and 1971; the annual growth rate was 5.3 percent. "In 1971 there were over 12 million persons aged 70 or under in the United States labor market who possessed academic degrees conferred by U.S. institutions of higher education, eight times as many as there had been in 1930" (p. xix). Although this sort of population expansion might portend great instability within the several subgroupings, the opposite appears to have been the case: ". . . the degree holder population displayed remarkable stability in composition, even as it expanded eightfold." But there also were sudden shifts to and from certain academic specialties, such as osteopathy, medicine (1905-6), computer science (1960's), and engineering (1959-1971). Adkins also provides evidence of slow, long-term cumulative change that eventually produces a significant shift in the distribution of degree groupings. The study

concludes with some controversial degree-holder population formation models whose empirical merit is discussed and evaluated.

If the "great American degree machine" goes full tilt during a secular expansion of both the population and the higher education industry, how will it behave during a period of college population collapse? Not using such wording, but addressing themselves to this question, Radner and Miller build on Adkins' data. In his foreword, Clark Kerr writes:

> The present volume—the work of sophisticated econometricians—is based on studies that were initiated during the rapid growth period. Yet it includes a surprising number of investigations that shed light on the implications of slower growth and on the ways in which the future rate of growth could be affected by policy change (p. xxiii).

Both Kerr and the authors' introductory chapters provide a perspective on the scope and conclusions of this impressive study.

In general, Radner and Miller reaffirm that the law of supply and demand works in higher education just as it functions elsewhere in the economy. The interaction among key variables appears to be highly complex and the number of relevant variables is large. Also, the gathering of the appropriate data is an enormously difficult and time consuming task.

Three interrelated policy issues mentioned in this study are pertinent here. One of these centers on how one might influence the demand for freshman matriculations, on how the ability to pay, academic aptitude, and academic selectivity interact, and how this interaction differs among certain types of students. Another theme derives from the fact that as access to higher education improves, places and staff must be provided. If student demand represents the input, degrees or graduates represent the output of higher education. Within the transformation, the student-faculty ratio emerges as the key aspect of educational technology. By tying together student demand, population or enrollment projections, and student-faculty ratios, the authors produce estimates of the academic demand for doctorates between the present and 1990.

Many readers will find this the most useful part of the study given the number of dire predictions that have surfaced since Cartter shocked the higher education community by his forecast of the shrinking need for Ph.D.'s. The authors confirm the outlook for a depressed Ph.D. labor market, but suggest some measures that might soften the blow.

Finally, in Chapter 10, a most challenging input-output model is

presented that the authors apply toward the design of a universal two-year undergraduate program. Here they explore the financial implications and staff requirements for a program in which disadvantaged students would be instructed in much smaller classes (ratio of 1 to 6) than is now the case (ratio of 1 to 25) for more effective learning. Throughout the study the authors' approach is to develop different assumptions that are then tested. In this regard they are convincing that research results based on one assumption only should be carefully scrutinized. Not only do the results change as assumptions are changed, but, given the nature of higher education demand and supply, it would seem reasonable to expect a number of causes for the same event.

The Radner and Miller findings will not alter the fact that the number of high school graduates will decline significantly during the 1980's. But their study offers policy makers much food for thought; there are solutions both to the demand creation and the supply maintenance questions. Whatever may be meant by "universal" access to higher education, more rather than less access during the 1980's could be a national goal. Similarly, unemployment among Ph.D.'s and dramatically reduced production of advanced degrees are not necessarily in the national interest; therefore, policies that provide stable employment to and stable output of higher educational manpower might be viewed as highly desirable state and national goals.

Recent enrollment trends in higher education could tempt one to be complacent or these trends could be considered as the calm before the storm. Consider the enrollment statistics between 1970 and 1975. From a business cycle point of view, we observe the typical saucer or recovery effect. For instance, the period of declining enrollments ended in 1973, but the growth rate was modest between 1972 and 1973 for certain types of institutions, and declines are still recorded by some. By 1975 almost no negative signs can be seen when conventional, relatively large aggregates are used, as for instance those in the following tables.

Certain trends emerge from these data. First, figures show that when enrollments expand it is the publicly controlled sector that grows the most, with two-year community colleges having the fastest enrollment expansion. Second, given the population studies projecting future conventional college and university enrollments through the balance of the 1970's, it would be prudent to assume that the accelerating enrollment trend cannot be sustained; for many institutions future enrollment growth will probably be smaller and may even decline. Third, in comparing the growth rate for first-time students with

Table 1. Opening Full-and Part-time Student Fall Enrollments by Type of Institution with Percent Increase from Year to Year, 1972-1975

Year	Public Institutions	Percent Increase	Private Institutions	Percent Increase	Total	Percent Increase
1972	5,377,199		1,810,027		7,187,226	
		3.69		.93		3.0
1973	5,575,782		1,826,773		7,402,555	
		5.29		2.08		4.5
1974	5,870,663		1,864,837		7,735,500	
		9.02		5.27		8.12
1975	6,400,434		1,963,022		8,363,456	

Source: *The Chronicle of Higher Education* December 16, 1974, p. 8 and December 15, 1975, p. 5.

Table 2. Opening Fall Enrollments for First-time Students Only, 1972-1975 with Percent Increase from Year to Year

Year	Public Institutions	Percent Increase	Private Institutions	Percent Increase	Total	Percent Increase
1972	1,725,934		445,334		2,171,268	
		4.3		.41		3.5
1973	1,800,931		447,169		2,248,100	
		7.5		2.2		6.4
1974	1,935,838		457,031		2,392,869	
		7.0		4.2		6.5
1975	2,071,361		476,256		2,547,617	

Source: *The Chronicle of Higher Education* December 16, 1974, p. 8 and December 15, 1975, p. 5.

that of overall full-time equivalent enrollment, it is quite clear that the 1975 enrollment results do not stem solely from new students; because attrition was smaller than normal, total enrollment was larger than expected. Fourth, there has been a rapid growth of part-time student enrollments, particularly among women, a phenomenon that appears in both the publicly and the privately controlled sectors of higher education.

At this writing the 1975-76 student aid data are not available. But we have enough evidence to know that almost every kind of student aid has been expanding, and when the final figures for the school-year 1975-76 are reported, we shall find that student aid grants or discounts have reached their highest level ever. One reason for this growth is the new need calculation guidelines that became effective for the current year. Another source of the expanded student aid effort is the growth in federal and state student aid funds. A third contributing factor, particularly among privately controlled four-year institutions, is the accelerating competition for new students and in some cases the rapid growth of "unfunded" student aid discounts.*

If it is correct to assume that high unemployment and prevailing student aid practice have stabilized or reduced enrollment attrition and are contributing to first-time student enrollment growth, what does this portend for institutional financial viability?

As the general economic recovery asserts itself, student attrition may revert to the more normal and larger annual percentage rates, and this would then tend to weaken total enrollment prospects among the affected institutions.

We have already commented that some demographic studies tell us we should not expect the recent accelerating enrollment growth to continue. Therefore, enrollment and enrollment-based real revenue growth may be more moderate in the future; and given the projections for the 1980's both may decline.

But there is another aspect of the financial impact that already discloses a significant weakening of strength: net cash flow from and on behalf of students is growing less rapidly in many institutions than total student revenues before we deduct student aid discounts. As the 1975-76 statistics will show, particularly in many privately controlled four year institutions, the so-called unfunded student aid grant or discount has been increasing faster than either total revenues or total expenditures. And since endowment and gift income has not been

*The term "unfunded" refers to the excess of student aid grant expenditures over student aid grant revenues.

keeping pace with inflation (see below), the larger enrollments reflect in some institutions not a favorable, but a gradually worsening financial condition. Unfortunately, representative figures are not available at this writing; however, among 27 liberal arts colleges, 10 report an increased relative cash flow after student aid discounts, 10 others show no change, and 7 colleges or 26 percent report a significant decline in relative cash flow after student aid discounts (Jenny, forthcoming).

Many institutions are now rethinking their student aid practices in an endeavor to restore some sort of balance and with the aim of obtaining more favorable net cash flows in anticipation of tightening enrollment prospects. The enrollment growth of 1975-76 appears to have been completely unexpected during the normal (and always very early) budget planning activity in both the publicly and privately controlled sectors. When it became apparent that there would be a larger enrollment than anticipated many institutions were not in a position to accommodate all eligible applicants. In some cases budget limitations forced many publicly controlled institutions to "ration" late admissions during the summer.

Thus the recession in the national economy appears to be contributing (at least temporarily) to larger college and university enrollments, intensified competition among institutions and more liberal student financial need standards are pushing up student aid grant or discount budgets, all of which is slowing down the net cash flow growth in some instances. The overall effect seems to be that many institutions remain very vulnerable to short-term adverse influences and that an apparently favorable enrollment trend may in fact disguise the prospects of a significant weakening in institutional finances.

State Government Appropriations

In publicly controlled institutions, government appropriations provide the bulk of the revenues that finance undergraduate instructional activity. These appropriations come from tax receipts; however, during a general economic recession, tax receipts decline unless new taxes and higher tax rates are being instituted.

Though historically, state and local spending have played a countercyclical role, the trend may change because of the shift from budgetary surpluses to deficits following the 3rd quarter of 1973 (*Business Week*, March 10, 1975, pp.78-79). With less income for state governments to dispense, what place higher education occupies on the tax dollar priority list becomes more important. Public confidence in higher education during the last eight years has also slipped from 61 percent

to 40 percent according to a 1974 Harris Poll. This may have made it easier for legislators to take a hard look at the relative importance of appropriations to education.

There is wide variance in the way institutions have fared. One survey of 36 institutions indicates that on the average over the past two years state aid to education for operating expenses has risen 28 percent, the range being from a low 4 percent to a high of 126 percent (*Chronicle*, November 10, 1975, p. 7). Within this range, 64 percent of the increases were below the average rate of growth. When the national 28 percent average increase is deflated, the actual average increase becomes only 10 percent during a period when the Consumer Price Index rose 21 percent and the Higher Education Price Index (HEPI)* rose 16 percent. Some of the reported appropriation figures may exceed actual spending because of orders from some governors to limit spending (p. 7).

In a survey of 96 universities, the National Association of State Universities and Land-Grant Colleges found that appropriations had risen 9.4 percent between 1973-74 and 1974-75. During the same period the HEPI rose 8.6 percent, so real income per student from state appropriations actually declined. Since many institutions enrolled students for which the state did not appropriate funds, and because tuition income (even the higher out-of-state tuitions charged by publicly controlled institutions) does not cover the full cost of education, state institutional budgets experienced a marked shrinking of purchasing power. *Nearly one-fourth of the institutions* received allocations that fell below the 8.6 percent increase in the HEPI and therefore also experienced a loss of real buying power (*Chronicle*, October, 6, 1975, p. 6).

Another survey shows that two-year colleges are averaging a larger share of 1975-76 state appropriations than other public types of higher educational institutions over the same two-year period. State appropriations for local community colleges are up 40 percent; vocational-technical institutions increased 39 percent; and state junior colleges rose 33 percent compared to the 28 percent increase for all state-supported institutions. During the same period, enrollments rose 37 percent in the public two-year institutions, or twice as fast as the average for all public institutions (*Chronicle*, January 19, 1976, p. 13).

Many reasons are given for these consistently large enrollment increases at two-year colleges. The low tuition with and without student

*See below for comments on why this index may be inadequate as a true measure of inflation.

aid subsidy and the heavy vocational emphasis are two of them. But it would be incorrect to accept these as the primary reasons. The two-year college serves its immediate community in many ways and it offers high-school graduates a higher educational alternative that more traditional collegiate institutions do not or cannot provide. Whether vocational or technical, whether low-priced or free, the public two-year college is a new force in higher education that will have an impact on future higher education enrollments and the effect may well continue to be to a large extent at the expense of enrollments at the more traditional public and private colleges and universities (Gleazer 1976).

What has been the effect of the level of state funding on the planning of educational budgets given the rapid erosion of purchasing power as illustrated by exorbitant utility costs and other support expenditures? For affected institutions whose allocations have been cut in real terms, the options are not particularly palatable. They include faculty and staff reductions, a freeze on hiring, a freeze on salaries or only token increases, tuition increases, and the elimination of courses and programs. In a 1974 survey of more than 1200 college and university administrators, Lyman Glenny of the University of California at Berkeley discovered that between 1974 and 1980, 14 percent of the institutions were projecting the elimination of undergraduate courses and 9 percent the elimination or consolidation of undergraduate programs (*Chronicle*, September 22, 1975, p. 1). Glenny's survey also provided the basis on which the Carnegie Foundation for the Advancement of Teaching predicted in its publication *More Than Survival* (1975) that approximately 10 percent of the nation's postsecondary educational institutions would either merge with another institution or cease to exist by 1980.

Thus there appears to be considerable evidence that publicly controlled institutions have experienced a recession in real government appropriations. Given the enrollment trends, it also appears that this recession has largely been independent of changes in enrollment. On the contrary, of late the budgetary limitations themselves seem to cause lower enrollments in the aggregate for this sector than would exist if financial support were more adequate. Finally, it is not clear from available data whether or to what extent the appropriations trend is directly related to the general recession and the effect the latter has had on tax revenues. But, according to the most recent surveys the public university's budget pinch may become worse in the years ahead (Magarrel, February 9, 1976, p. 1).

Philanthropic Support in Higher Education

When referring to philanthropic support of higher education it is customary to distinguish gifts and endowment income for current operations from capital gifts. In this discussion only voluntary support of institutional operations will be considered.

Voluntary Support or Gifts for Operations—While the national economy was moving into a recession and the bottom fell out of the stock market and bond markets, philanthropic support for colleges and universities remained at $2.24 billion for the 1973-74 school year, the same total as in 1972-73, when voluntary giving had reached an historic high. In reality the results for 1973-74 may have been slightly better than for 1972-73, since 32 fewer institutions participated in the survey than the year before (CFAE 1975).

Nevertheless, there is considerable reason for concern. First, giving for current operations did not grow enough to compensate for the accelerating rate of institutional inflation. Second, giving from individuals dropped significantly, i.e., by 5 percent for alumni and by 7.3 percent for non-alumni. The day was saved by the increasing support from religious groups (up by 17.2 percent), who responded to the crisis faced by denominational four-year institutions, and by support from corporations (up by 10.6 percent). Private independent foundations increased their support by 2.1 percent.

The need for philanthropic support to higher education has been documented and reaffirmed in several recent studies. *Giving in America* by the Commission on Private Philanthropy and Public Needs is the result of two years of extensive study of numerous aspects of philanthropy in the United States. It is based on 85 formal studies, abstracts of which are published in a *Guide to Sponsored Research* issued by the Commission. The studies themselves are being made available by the Commission.

Two of the above mentioned research reports are devoted specifically to higher education. *Private Philanthropy and Higher Education: History, Current Impact and Public Policy Considerations* by Earl F. Cheit argues for increased philanthropic support because of the threat posed by steady-state conditions that endanger the quality of higher education. *Philanthropy in Higher Education: A Study of the Impact of Voluntary Support on College and University Income* by Jenny concludes that any significant weakening of giving would be a serious threat to the continuing viability of much of the privately controlled sector of higher education, in that the burden of reduced giving would have to be shifted to the student, which would result in enrollments being affected adversely.

Both studies provide data to support the contention that gifts represent an important as well as essential revenue source for colleges and universities. In the publicly controlled sector, gifts often constitute what administrators have termed the "edge of quality"; although the weight of gifts in state university budgets may look small, the dollar amounts are often impressive. In state and community colleges, private gifts have in the past underwritten plant and equipment acquisitions that public funders did not wish to finance. And publicly controlled institutions report annually that endowment capital is also increasing. Among all types of institutions, publicly controlled universities and colleges have reported the fastest increases in philanthropic support during the last three years of the survey made by the Council for Financial Aid to Education.

But for privately controlled colleges and universities gift income represents the essential life blood for continual relative independence and financial stability. The share of total revenue represented by gifts varies considerably among institutional types; this is less important than that share's relative stability over time. Two interesting facts stand out. First, with few exceptions, the long-range trend has been that gift revenues represent a falling percentage of total revenues. From year to year, the decline has been small; but there is almost no interruption in the downward trend. Second, normally gift income does not fluctuate sharply or erratically from one year to the next. Instead there is fairly steady growth in current dollars but, as mentioned above, at a rate slower than that necessary to compensate for inflation. In spite of the decline in the relative weight of gift income, the latter has represented a stabilizing influence in privately controlled colleges and universities. For instance, it stands in sharp contrast to the gyrating federal appropriations of the late 1960's and early 1970's that first helped precipitate a financial crisis among many institutions, particularly those commonly referred to as research universities. It is especially among the latter that private giving has acted as a countervailing force, a fact described in the report issued by the National Commission on the Financing of Postsecondary Education (NCFPE, Ch. 5).

During the last five years, private giving has been affected not only by general economic conditions but also by the revisions in tax legislation that pertain to how philanthropic giving is to be treated in the determination of taxable income. Furthermore, the special legislation that addresses itself to philanthropic foundations also has had its impact. All in all, the latest legislation has not had as its objective the liberalization of incentives to reduce taxes for philanthropists. In

the whole discussion of tax reform, until the creation of the Commission on Philanthropy and Public Needs, the debate centered on isolated, though admittedly, important issues. A case in point had to do with the treatment of appreciated real property, particularly such things as art objects, books, and the like. Because the law now deals with such gifts differently than with gifts of appreciated stocks or bonds, the former have all but vanished. Thus, the elimination of certain tax reducing incentives can produce a reduction in giving, and the econometric analyses that the Commission has sponsored provide sobering reminders of what could lie ahead if tax reform debates do not concern themselves with the broader question of nonprofit sector finance and, in this instance, of higher education finance. This warning has been sounded before, but in a vote-conscious political process it may carry little if any weight.

The Commission on Philanthropy points out that nonprofit sector finance and the question of efficient and equitable taxation are complex issues. Since they are serious issues, the economic consequences of new tax legislation affecting philanthropy can also be serious. Just how far reaching can economic consequences be? Consider how the recession can affect individual giving. For instance, if one combines the twin facts of a 5 percent drop in alumni giving (or some $27,000,000) and the 1973-74 double-digit inflation of rougly 12 percent, the real or constant dollar loss of revenue will be much more than $27,000,000.

Now that the securities markets have recovered and the recession seems to be turning into a believable expansion, the prospect for continuing and growing philanthropic support in higher education exists. Although we do not yet know the results for the elapsed 1974-75 business year, the expectations for 1975-76 have been improving. The progress report on 102 capital-gift drives is encouraging (Scully 1975).

Since the general economy has restored some of the capital values from which operating gifts to colleges and universities are normally made, the climate on the philanthropic front is healthy. The cloud on the horizon at the moment is not economic but political and centers on the tax reform issue.

Endowment Income—Like operating gift income, endowment income plays an important part in college and university revenues. In dollar terms it has been increasing consistently although it represents a very small percentage of total income among publicly controlled institutions. For privately controlled colleges and universities

it is a major income source, and in the past it has been a stable one. Unless dividends have been cut or eliminated by corporations during a recession, endowment payouts tend to be recession-proof.

But the latest recession and the sharp rise in inflation has altered the situation, at least temporarily. Depending on investment policies and because of new payout formulas, endowment investment payout has recently been cut back significantly in a number of colleges and universities. Some of the decline appeared in last year's audit reports: many will be reported during the 1975-76 business year; additional declines may occur during 1976-77. In some instances, endowment investment performance was a veritable debacle. That it happened at all was only in part the result of outside economic forces.

In the middle and late 1960's, the strength and at times exuberance of the stock market enticed more and more endowment investment managers to place their future hopes and faith in equity investments. Common stocks became the predominant investment vehicle. By the time the two or three tier market was fully developed, many college portfolios reflected in their common stock component a high preference for growth stocks.

Not every endowment investment manager was on the bandwagon when the Ford Foundation published its report *Managing Educational Endowments.* The report bluntly castigated the timid and extolled the bold. Cary and Bright issued their study *The Law and the Lore of Endowment Funds,* in which they rationalized the legality of expending capital gains rather than merely dividend and interest income. Shortly thereafter the Common Fund was created under the initial sponsorship of The Ford Foundation. There was some criticism, but on the whole higher education embraced the Ford Foundation position, the Common Fund got underway fast and successfully and prodded in part by all of this activity and in part on their own initiative, the several states began to change their uniform codes dealing with the management and investment of trust and endowment funds.

The timing for all of this constructive innovation and regrouping could not have been worse. A short time after many institutions had reorganized and adopted a "modern" point of view, a more aggressive outlook, and shifted to so-called total return investment strategies as well as to market-value-based payout formulas, interest rates began to move up and the stock market started its downward trend. The first interest cycle went by and hope for better days was rekindled.

The next interest cycle proved to be the undoing of the stock market, with bond prices also suffering huge setbacks. Month after

month of economic forecasts displayed enough optimism to provide investors with courage not to liquidate everything. Endowment portfolios were battered.

The period of hectic downward activity spawned a host of literature. The National Association of College and University Business Officers (NACUBO) began an annual survey of Comparative Endowment Investment Performance in 1971, and the 1974 edition incorporates a number of features worth careful study including some guidelines for *Reporting on Investments of Endowment Funds*. The most striking aspect of the 1974 report, however, is the monotonous regularity with which negative total rates of return are being reported. There can be no question but that the business year from July 1, 1973 through June 30, 1974 was an unmitigated disaster.

Given this negative performance, one would suspect that endowment payouts stopped altogether during the episode for the affected institutions, particularly those operating under some total return payout formula. Instead, as they had to under the pressure of escalating expenditures, the payouts continued, even though at reduced rates in many instances. Those who had tied their payout to the changing market value of their assets discovered that while a moving average formula will smooth the transition from year to year, it will also continue to reduce the payout long after market values begin to firm up and increase. It would be interesting to have been privy to the confidential discussions of governing boards and investment committees as they assessed the extent of the damage and what to do about it.

Concerns such as these prompted The Twentieth Century Fund to call together a task force to study in *Fund for the Future* the importance of endowments for institutions of higher education and to raise questions concerning proper management of the entrusted capital. In addition to the Task Force's report, there is an extensive study by J. Peter Williamson of Dartmouth College, which follows an earlier study of his for the Common Fund entitled *Performance Measurement and Investment Objectives for Educational Endowment Funds*. Both the report *Funds for the Future* and Williamson's exposition and references are worth studying (see also Ennis and Williamson 1976).

The Twentieth Century Fund Task Force writes with those colleges and institutions in mind whose endowments are small, who have none, and whose policies on endowment cultivation and investment practice are yet to be developed fully. Even the seasoned institutions with large endowments might benefit from some of the recommenda-

tions. The report is addressed to trustees or governing boards and to trustee finance and investment committees.

After calling for a reevaluation of existing policies concerning endowment management, development, and spending, the Task Force makes a number of specific recommendations. For instance, it states that investment objectives should be written and explicit and "that they should incorporate expected return and limits on risk and volatility, expressed in terms of limits on investment strategy" (p. 12).

Because of the Task Force members' philosophy concerning the manner in which industry will obtain its future capital, there is a recommendation favoring equity and equity-related investments over the long run as a better protection of purchasing power than might be had from bonds or other fixed income investments. The Task Force readied its conclusion even though it was fully aware that during the late 1960's and early 1970's equity investments made a poor showing. Among the equity related investments would be shares in professional partnerships, in smaller private businesses with sound earnings potential, even portions of closely held rather than publicly listed corporations.

Furthermore the Task Force cautions that colleges not be too timid and that they have a courageous investment policy; but also that the trustees "agree on a range for the proportions of stocks and bonds, with a clear understanding in advance of what an extreme drop in the market will mean to the overall value of the endowment" (p. 13).

Additional recommendations concern the degree of risk that one might be willing to take (Williamson dwells on this point extensively), and there is a caution about too liberal payout policies. For instance, there is a clear statement that a consistent payout in excess of 5 percent of the endowment's market value will endanger the long-range viability of the funds, since not enough will be reinvested for the future. It is our estimate that the implementation of this recommendation would lead to a lowering of payouts from current levels in many colleges and universities. In spite of this, the Task Force's recommendation is valid, since higher education inflation has tended to be more than that for the economy as a whole.

One of the most difficult recommendations to accept in times of all sorts of revenue shortfalls is the following: ". . . spending needs should not dictate investment policy nor investment policy dictate conditions of spending" (p. 17). The Task Force believes that a proper balance between investment policy, spending rule, and long-

range planning of budgets is such a fundamental requirement that the preceding rule is defensible. The achievement of this balance is no doubt among the most difficult tasks for trustees and managers of institutions alike.

It may be appropriate to set forth some guidelines for those who are not already practicing what others and the Twentieth Century Task Force are and have been recommending. For the reader who is interested in pursuing the matter in some depth it may be useful to recall a few of the early works dealing with efficient investment portfolio selection. Pathbreaking in this respect was Harry M. Markowitz's Cowles Foundation Monograph 16, *Portfolio Selection: Efficient Diversification of Investment.* Published in 1959, it set forth the now famous "expected return—variance of return" or E-V theory. Earlier, Arrow (1951) and Martin (1955) had laid important groundwork for mathematical portfolio selection. Later Baumol (1963) and Sharpe (1963) provided conceptual and theoretical refinements, and Fama (1965) added some improvements to the portfolio diversification problem.

An entirely different, though related approach to portfolio selection was developed at the then Carnegie Institute of Technology under Herbert E. Simon by Geoffrey P. E. Clarkson, whose dissertation *Portfolio Selection: A Simulation of Trust Investment* still makes interesting reading. Clarkson developed a computer program which simulated the decision making of a bank trust department officer; the mathematical model displayed a high degree of consistency and frequently produced superior results.

More recently numerous other names have joined the list of these pioneers, too many in fact for listing them here. But the names of Lorie, Fisher, and Hamilton must be mentioned since they have played an important role in shaping attitudes and in providing guidance for portfolio performance measurement and evaluation (Lorie and Hamilton, 1973).

To recommend that *investment objectives* be articulated clearly means that a specific percentage target be set for such things as the total rate of return, the planned dividend or income growth rate, and the long-range rate of capital appreciation. Such phrases as "optimizing" or "maximizing" the long-range total rate of return are not very precise or helpful. Often members of governing boards are asked to perform as investment decision makers instead of functioning as policy formulators. To prevent future embarrassment investment objectives will frequently be stated in a manner designed to protect the reputation of those involved. This is quite understandable, but so

are the lackluster results that often derive from such practice. Today, the analytical tools that make possible investment management by objectives are available, and governing boards should avail themselves of these. Williamson and others have written copiously on the subject.

An important aspect of investment policy determinaton is the degree of *market risk* one is willing to assume, and this in turn has an influence on the specific payout policy one will wish to pursue. The risk question will be difficult to answer if those involved in policy formulation are not familiar with current jargon and technology. A familiar trap involves an investment policy of average market risk that simultaneously expects the investment manager to outperform the average consistently. There is enough evidence to show that you cannot outperform the market for long or consistently; from this fact the random walk theorists have concluded that it does not pay to hire expensive investment management talent and that instead one might be better served by investing in a representative slice of the market. Among colleges and universities this is not at present a very popular or widespread policy stance, but it is worth pondering the question, Should one try to outperform the averages? An affirmative answer is taken for granted too often without careful study of either the alternative or the implications.

In an attempt to strike an appropriate balance between investment objectives and *endowment investment payout,* it is essential that colleges and universities operate within a long-range budget plan. Although this plan will be revised from time to time as events require it, once the plan has been agreed upon, investment objectives should be such as to support and not run counter to the plan. And in formulating the latter, endowment investment revenue expectations should be linked to the investment policy the governing board is willing and able to implement. As far as so-called total return payout formulas are concerned, several things ought to be kept in mind: (1) the formula should make sense within the overall revenue and expenditure plan; (2) it should take into account that prevailing rates of institutional cost inflation will require a consistent ploughing back of some of the total return achieved, lest the purchasing power of the endowment capital erode over time; (3) a volatile portfolio will tend to produce a volatile payout, which may not be appropriate when budget pressures become extreme, as is the case today—thus, there needs to be balance between payout and investment strategy (Massy 1974).

Governing boards should adopt formal procedures for investment

management performance evaluation and reporting. These have been described amply in the literature, but a word may be in order on the nature of internal or confidential performance measurement vis-à-vis the investment manager. A prerequisite is that investment criteria be specified clearly. Based on these criteria, one or several specific performance measures or performance indices should be agreed on with the investment manager. And to be fair and valid, performance evaluation should stretch over at least a full market cycle. At present there is evidence that only the largest and most professionally managed college and university portfolios receive consistent and ongoing objective scrutiny based on formal quantitative performance measurement. Fewer than 300 institutions have been participating in the annual survey conducted by NACUBO, which testifies to the enormous spread between superior and weak performance.

Expenditures and the Recession in Higher Education

A number of years ago, in one of the earliest Carnegie Commission studies, William G. Bowen described the scissors effect that is an all-pervading characteristic of long-range revenue and expenditure trends in colleges and universities (Bowen 1968). If one begins at the break-even point, as one projects expenditures into the future under plausible assumptions, a point will be reached when revenue growth will trail that of expenditures. Sidney Tickton also knew of this phenomenon when, on behalf of The Ford Foundation, he urged higher educational institutions to plan ahead and to formulate ten-year budgets. A fundamental intention behind the ten-year budget formula was to make colleges and universities realize how quickly the revenue-expenditure imbalance will normally occur.

If higher education expenditures are to remain within the available revenues, the scissors effect indicates over the longer term that expenditure growth must be slowed below its normal pace unless, of course, revenues can be expanded faster than would normally be assumed.

A special case is presented by revenues from student fees. Here we must distinguish on the one hand revenues from tuition and fees that are related to instructional activity proper, and on the other hand revenues from room and board charges that tend to be associated with so-called auxiliary enterprise activities and are part of the students' cost of living on a campus. To the extent to which enrollments are a function of external economic events, these revenues will fluctuate in response to the latter. During the recent economic recession, enrollments appear to have remained an independent force, even a counter-cyclical one. Thus revenues from students should be expected to move independently also.

The primary influence on revenues from students appears to have been the growth of institutional expenditures. To this must be added the limited growth of other revenues, particularly gifts, endowment income, and government appropriations. Also, there is the force of interinstitutional competition. When all is said and done, particularly in the privately controlled sector of higher education, expenditures appear to be the key determinants of the prices charged to students.

It must be underscored that tuition income and revenues from

other student charges come nowhere near covering total institutional expenditures. The price charged is not a direct function of the cost of producing educational services. But as expenditures grow, prices grow also; and frequently during the last decade and a half, prices have grown faster than per student expenditures. It is in this sense that it is an interactive process—expenditure growth pulls up prices in higher education.

The influence of educational expenditures is especially pronounced in the case of tuition and fee charges. Here, among privately controlled colleges and universities, the rate of inflation has tended to be considerably faster than for prices generally throughout the 1960's and thus far during the 1970's. This has also been the case for many of the public institutions, especially during the last six years or so when they have been forced into at times astonishingly large tuition increases. In the publicly controlled higher education sector, the 1970's so far seem to be the worst inflationary period for tuition and fees, and when one looks at the rate at which "out-of-state" tuition has been increasing in some states, one must stand in awe.

The Carnegie Commission has documented this price phenomenon in higher education in several of its studies (O'Neill 1971; CCHE 1973) and G. Richard Wynn and this author have described the history of four-year college tuitions and student charges in several reports (Jenny and Wynn 1970, 1972; Wynn 1972).

The upward pressure on college and university prices because of expenditure inflation has been especially pronounced among the institutions who historically tended to cater to less affluent students. During the 1960's, tuition inflation has at times been comparatively faster in schools serving low income students than among the well-to-do and highest priced colleges and universities. A fundamental reason for this in addition to the rapid expenditure inflation is the absence in these institutions of significant nonstudent fee revenues or nonstudent fee revenue growth (Wynn 1972, pp. 428-30).

To understand why college and university expenditures have put such relentless upward pressure on the prices charged, it is necessary to study the structure of the typical college expenditure budget.

Normally, college and university expenditures are divided into such major categories as instruction, general administration, student services, public relations and development, general institutional support, library expenditures, operation and maintenance of educational and administrative plant facilities and grounds, and research. These elements constitute what are known as "general and educational" expenditures. These are followed, depending upon institutional type,

by a variety of so-called public service and extension activities, among which hospitals and agricultural services are well known. Finally, there are the auxiliary enterprise budgets, which include dormitories, food service, college stores, and a host of other so-called income producing endeavors. National statistics on higher education are arranged along these types of expenditure classifications. Unfortunately, only the initiated know what activities take place within these conventional designations.

Common to each of the above institutional or budget subdivisions is the following expenditure structure by object categories: (1) there is the component for personnel compensation which includes salaries, wages, nonwage benefits (or fringes), and professional service costs such as fees for consultants, lawyers, and auditors; (2) the expenditures for travel, supplies, books, memberships, periodical subscriptions, and a whole host of such general support cost elements; (3) the object categories for equipment purchases, repair, and rental, and for plant repairs; (4) the utility cost package, including fuel, electricity, and telephone billings; and (5) grounds upkeep and underground utility maintenance and repairs represent significant object categories in most educational institutions, particularly among large, sprawling campuses. Other regular items are food, paint, lumber, medicines, laundry, merchandise for resale, and so on, depending on how detailed an object code is developed. Finally, there are expenditures for debt amortization, for debt interest payments, and in some instances for plant and equipment depreciation, and for major plant improvements.

The above list budget items can be condensed into five basic components:

- personnel costs
- various price elements for operating support
- library acquisitions
- utilities and food
- a capital component that includes new equipment, improvements, interest, and debt reduction.

It is remarkable that no regular and detailed national statistics are available that would allow policy makers and researchers to study this expenditure structure of colleges and universities. As a result, nothing is officially or formally known about changes in structure, of which there have been quite a few. Nor are there any known provisions to change the national data gathering habits to fill this gap in our knowledge.

In one sense there is nothing very extraordinary in the preceding classification of expenditures—every economic enterprise and industry has these types of expenditures. However, the mix of these expenditure categories within major college and university sub-budgets and in the total budget is somewhat special.

Economists like to speak of production functions and ask two basic questions: (1) What specific resource mixes can we identify that tend to produce identical production results? and (2) Which of these mixes costs the least? Thus, for instance, one might choose two units of labor and one unit of capital or one unit of labor plus two units of capital and obtain identical production results. Given the latter, the combination that costs the least would be chosen.

Whether the present expenditure structure described above is in fact the least-cost combination will remain a question for debate. However, the particular structure is an expression of the college and university production function. Furthermore, the structure is heavily weighted toward the labor-factor of production, particularly when new plant construction is eliminated from consideration, as is the case normally in college and university current expenditure accounting.

The expenditure classification by major object items describes the so-called *service industry* character of higher education. Although the National Bureau of Economic Research has been trying to fill the gap, Victor R. Fuchs wrote as late as in 1968 that the service sector of our economy "has long been the stepchild of economic research (Fuchs 1968, p. xxiii). This presents something of a problem when one realizes that it is the service sector that has annually been absorbing well in excess of 70 percent of all new manpower entering the labor market.

One of the most important features of *service industries* is that physical productivity improvement over time will tend to be limited or very slow. The designation *service industry* stems from the fact that *human* service is central both to what is being "produced" and to how it is done. The *time-consuming* nature of rendering services is at the heart of the service industry productivity problem. But if physical productivity change may be small, quality improvements in services rendered (and at times in deterioration in quality) are another matter altogether. So far we seem to have remained rather inept at measuring quality change, and as a result we know relatively little about it. Worse, when we do not measure a thing, we often treat it in policy making as if it did not exist at all.

The productivity issue has become something of a hot potato in

higher education. In certain states, legislators appear to be particularly engrossed in compelling universities to adhere to specific standards of physical (teaching) productivity; and this appears to have been a contributing factor when state appropriations to publicly controlled institutions have been declining in constant dollar terms. Such policy making could strike one as peculiar at best and probably dangerous. Considering the generally acknowledged weakness of statistical information available and the lack of appropriate and plausible measures of physical and quality productivity change in society in general and in higher education in particular. Thus the absence of appropriate information is no longer a mere oddity: without it, informed policy making is hindered because there is no real understanding of how specific economic events impringe on colleges and universities.

The most significant recent economic event has been the persistent and sharply accelerating rate of inflation, which has had far reaching effects on higher education not all of which are known. There have appeared a number of inflation studies for higher education, most of them very recent. Among the researchers and groups who have contributed important statistical data are Millett (1952), O'Neill (1972), Wynn (1974), Baughman (1974), Halstead (1975), The National Science Foundation, and the Bureau of Economic Analysis of the U.S. Department of Commerce.*

Whether one agrees with the specific measurement techniques or not, the following general conclusions can be found in all of these studies:

- Colleges and universities have been and continue to be labor-intensive in their current operations; overall, somewhere between 55 and 65 percent of total expenditures are represented by personnel compensation, although the weight may shift somewhat higher or lower depending upon the type of institution studied.
- If one studies Educational and General expenditures, the personnel cost component increases in weight to somewhere between 60 and 75 percent, in the Instructional component it will go higher yet, to a normal range of somewhere between 80 and 95 percent, depending on the type of institution.
- During the last ten years, all higher education inflation studies show that the "institutional cost of living" increased faster than prices

*Lyle H. Lanier and Charles J. Andersen briefly mention these contributors to the state of the art in their recent *A Study of The Financial Condition of Colleges and Universities: 1972-1975.*

in general; until about four years ago, the reason for this was that wages and salaries increased faster than prices; during the last four years, however, wage inflation has somewhat subsided, while price inflation in colleges and universities has been accelerating.

- Recently conducted inflation studies and the individual methodologies produce different results. Those that capture the changing weight of budget subcomponents would reflect the impact of the high interest rates, the exploding energy costs, and the rapid inflation in the food component. Although Wynn's numbers have not been brought up-to-date, his shifting weights would tend to reflect these structural changes; the same is true for Baughman's approach. The Halstead, O'Neill, and BEA analyses, on the other hand, rely on fixed weights and thus cannot capture the full impact on constant dollar resources use when weights shift significantly over time within the total expenditure structure.
- One of the fastest growing college and university expenditure items is that of Student Aid Grant expenditures. This is not a true expenditure in that it represents a discount in price to the student and is in fact a reduction in net cash flow, unless compensated for by specific revenues. Thus, there is disagreement on whether the component should be shown as an expenditure; nevertheless, as an item, its growth far exceeds that of many of the categories, save perhaps utilities, or plant maintenance and repairs generally (Bowen and Minter 1975).

An interesting and important issue is emerging from these as yet unofficial inflation studies and measures: will there be an official higher education "institutional cost or price" index and, if so, which of the prototype methodologies will be used?

William Bowen (1975) has commented eloquently on the inadequacy of the Halstead index, which at present has the greatest chance of becoming the official measure for the purpose mentioned above. The mere fact that the American Council on Education keeps referring to it as the Higher Education Price Index (or HEPI) conjures up an impression of "this is the measure we have been waiting for." Bowen points out that the Halstead index centers on Educational and General expenditures and that it thus weighs labor costs more heavily than would be the case in the total university budget. In overemphasizing labor, Bowen concludes, the Halstead approach will understate the kind of inflation we have been experiencing in the nonlabor sector of the budget. Furthermore, the fixed-weight theory to which Halstead is wedded distorts things even more, as was pointed out by Bowen. Therefore, he and others are not satisfied

with what may well become the official "inflation" measure in higher education after a few more years, unless his advice and that of other critics are taken into account.

Wynn and this author have argued also that the wage and the price elements of any higher education inflation or "institutional cost of living" measure should be cleanly separated. For one reason or another one will either be tempted or forced into combining them at some point in order to have one single measure. But the forces that govern wages and those that influence prices are often different enough to warrant a clear separation of the two expenditure categories. Furthermore, where product prices are concerned, the question of quality change over time can be and has been answered by index number statisticians. In contrast, there exists no such convention in the measurement of labor quality change over time, a state of affairs attested to in publications of the National Bureau of Economic Research, the Brookings Institutions, and the Department of Commerce (*Survey of Current Business*).

Somewhere around 1965, higher education began to experience a decline in constant dollar current spending growth. This is true even though the issue of how to and who will measure inflation in higher education is not resolved. By the 1970's the trend had become a general state of affairs. Therefore we had the classic case of a slowdown in real growth followed by a decline in real spending proper. Wynn (1974) is most explicit about this, and so is Cheit (1971) when he speaks of the "new depression" in higher education. O'Neill anticipated this possibility indirectly when she concluded that higher educational productivity did not materially improve between 1930 and 1967, although her data disclose at times significant productivity change in between.

If inflation experienced by institutions is not completely offset by institutional budget growth in current dollars, what is the significance for federal, state, and institutional policy? Should we fight higher education inflation with appropriate national monetary and fiscal policy tools? Should we control higher educational prices and wages so that the student-consumer will have his or her price escalation limited in turn? Must we accept what some call the "Postal Service analogy," according to which increasing prices to the consumer appear to be as inevitable as deteriorating service? In higher education this could mean, after a certain point of desirable belt-tightening, that students pay more and more while colleges and universities are compelled to offer less and less.

When increasing budgets, expanding enrollments, and growing per-

sonnel rosters produced rising tuitions (and government appropriations) during much of the 1960's, it could be concluded that the expanding curricula and the multiplying services constituted an upgrading of higher education. Was *more* better? O'Neill's data show that between 1948 and the early 1960's significant physical productivity increases did take place, so that even with crude measures one could speak of real growth in higher education. And because of the knowledge explosion and the many scientific breakthroughs one might conceivably speak of quality improvement as well. But what about more recent trends?

Is there something inherent in the service industry that leads naturally to pay-more-get-less pricing? We ought to reflect on this as we approach and pass the now famous steady-state conditions in higher education (Cheit) and begin to speak of dynamic budget equilibria (Massey 1974). Policy makers concerned with the financing of higher education, whether public or private agencies, increasingly will insist on knowing whether the amount and the quality of educational services are adequate as they are forced to increase the price to the student and to the taxpayer.

It is then not surprising that accountability has become an issue. Yet accountability involves more than merely recitation of the numbers. It requires appropriate tools. We have singled out the inflation problem and have concluded that, at this moment, there does not exist a proper measure of the sort of inflation that institutions suffer. We also suggested that the chances are good for the wrong measure to become the official yardstick. It is hoped the agencies involved are aware of these criticisms and recommendations, and that they will heed them. More sophisticated tools of analysis are needed in the assessment of how higher education functions, as Frank Newman and others have said often. Therefore, if there is one important policy recommendation that as yet remains unfulfilled, it is that of the Newman (1971) and the National Commission (1973) reports pertaining to improved and appropriate measurement of the educational and financial condition of higher education.

Finally, it would be an oversight not to mention the costs of new federal programs. Recently the American Council on Education conducted a study at six institutions and subsequently reported what institutional administrators have known all along—in ten years, the costs of these programs have increased 10 to 24 fold (Van Alstyne and Coldren 1975). One may disagree with ACE's list of programs that have been included, for instance, the cost of social security payments may be large, but is not the sort of thing that has tended to irk col-

leges and universities. (But some institutions do not pay social security taxes and that puts them at a competitive advantage financially).

The new social legislation and judicial rulings intended to advance social justice are necessary and worthwhile endeavors, and are not being called into question here. But the institutional cost spiral that has resulted from them must be addressed.

The most significant recent cost increases have come from what can be called "compliance" requirements. Normally, when legislation and court rulings increase the private cost (for social advancement), they tend to do this with the explicit or tacit understanding that the added cost will eventually be passed on to the consumer. But in higher education this is not so easily brought about if at all, and *lately the effect of compliance cost inflation has been that educational programs and institutional support programs have had to be curtailed in order to live up to the rapidly multiplying requirements.*

Milton Friedman (1975, p. 47) in writing about affirmative action programs has called them "one of those bureaucratic monstrosities that have become all too familiar: *noble objectives*, ignoble results" (italics added). Also George W. Bonham of *Change* (Winter 1975-76, pp. 10-13) has devoted an editorial to the problem posed by big government's far reaching encroachment on college and university affairs. He cites twelve major pieces of legislation and offers illustrations of some of the bureaucratic requirements that institutions must live with. Thus the costs of social advancement are not only monetary; they cost the institutions a loss of freedom and independence. There are also pressures from state governments as well. Some colleges and universities have decided to fight back. But as Friedman says: "Hell hath no fury like a bureaucrat scorned." He then describes the plight of Hillsdale College, which discovered that student aid funds belonging to or owed by the student are now interpreted to be "received" by the institutions. And this after a legislative debate that settled for grants to students rather than to institutions! Thus a college can be punished if it does not abide by the regulations—regulations that have yet to be tested in the courts. The question remains. Can the colleges afford the financial expense and the misunderstandings that arise from litigations in court for the purpose of establishing the appropriateness and fairness of costly regulations?

The issues have now come into the open so that it is possible to speak of the cost problem and about the nature of the regulations without appearing to be opposed to what is being implemented. And it is in this spirit that Glen A. Olds and others have asked Congress

to help defray some of the escalating compliance costs. William J. Farrell has recommended that Congress require of federal agencies that write compliance guidelines to "include a documented impact statement with each proposed set of regulations" (*Chronicle,* November 17, 1975, p. 13). Olds told Congress that business can deduct from taxes the cost of social welfare expenditures, so perhaps a negative income tax for nonprofit institutions might be appropriate.

In the meantime, costs are escalating while budgets are getting tighter: ". . . except for the cost burden we know almost nothing about the *impact* of review procedures" (italics added). This is Cheit's concern in his excellent "What Price Accountability" (*Change* November 1975, p. 60).

Cheit presents an extensive criticism of the present trend in regulations and his balanced questioning of prevailing compliance procedures is summed up in the following sentences:

> Higher education may be a faded passion of the 1960's, but it is a fully established bureaucratic enterprise of the 1970's. In 1972 the Office of Education published a total of 32 documents in the Federal Register. In 1976, it expects to publish 270 official notices and regulations. If it continues at this rate, in just five years, the number of published federal regulations alone will exceed the total number of colleges and universities. A new purgatory right here on earth (p. 32).

Cheit could have added that the legislation often mandates the promulgation of administrative regulations. On the other hand, the Congress might be asked to reconsider some of its less appropriate instructions.

Financial Condition of Colleges and Universities

Recent economic events and evolving public policy have had an expensive, a tumultuous, and yet a salutory effect on higher education. The much tighter financial constraints affecting colleges and universities have led to improved management and to more careful and widespread long-range planning. On all levels there is increased questioning of established procedures, even when it is difficult to find new answers. Change may be slow in coming, but reassessment and self-critique are on the rise.

More and more widely accepted is how the impact of recent events differs from one institution to another and among types of colleges and universites. Nothing points out better the comparative success in coping with adversity, the hardships visited on some institutions, and the imperfection of our present understanding of what constitutes sound financial health in higher education, than two recent reports. The first is entitled *First Annual Report on Financial and Educational Trends in the Private Sector of American Higher Education, 1975*, by Howard R. Bowen and W. John Minter and the second is *A Study of the Financial Condition of Colleges and Universities: 1972-1975* by Lyle H. Lanier and Charles J. Andersen.

The press coverage of each of the reports has been quite extensive. Yet, the general impression after reading the news reports seems to be that the two studies come to basically opposite conclusions. Since this writer has encountered this impression frequently, it may be appropriate to offer at least a modest correction.

Each of the studies uses its own methodology, and each explains its particular approach quite carefully. The difference in methodology is important. For instance, in the Bowen and Minter study higher education inflation is discussed within the framework of the Consumer Price Index; in the Lanier and Anderson study the higher education price deflators discussed above are used.

Another distinction concerns data sources. The Lanier and Andersen report concentrates on insitutional reports according to the Higher Education General Information Survey (HEGIS) format, whereas the Bowen-Minter study relies on HEGIS data, on questionnaire responses, and on institutional financial audits.

A third difference involves the format of each study. Lanier and Andersen try to respond to and improve upon the National Commis-

sion for the Financing of Postsecondary Education report and concepts, whereas the Bowen and Minter study attempts to break new ground in pursuing the question of how one would go about defining the financial health status of educational institutions by identifying so-called indicators of financial health or distress.

An illustration of where both studies are weak is when they dwell on current operating deficits. Each study does this somewhat differently. Nevertheless, in each case the findings are less than helpful if one realizes that current funds accounting makes it almost impossible to judge what an excess of revenues over expenditures or the reverse means. There are disclaimers in each study concerning this issue.

The Lanier and Andersen study makes its novel impact in the discussion of higher education inflation, and by applying the various deflators to broad expenditure categories. Lanier and Andersen could have been more explicit in focusing the reader's attention on *the merits of the distinct approaches* used by each individual analyst. Furthermore, they might have done for the Wynn "four-year liberal arts index" what they did for O'Neill's; namely, they might have tried to bring it up to date in order to apply it to the group of liberal arts colleges in their sample for which it was originally constructed. They use the O'Neill and Halstead numbers even though the Wynn index does not have some of the pitfalls noted by William Bowen. Nevertheless, their discussion of inflation is worth studying.

The Bowen and Minter study breaks new ground when it delves into the college and university balance sheet. Balance-sheet reading is an art that smacks of the occult, unless one is high priest of college and university finance. And because balance-sheet reading has not been a very popular pastime, there exist few formal studies that have tried to lift the veil of secrecy. We have had detailed studies concerning endowment funds but, strangely, seldom of liabilities. And it is the latter than counts when the going gets rough.

Thus, the Bowen and Minter study attempts to tell us something about changing fund balances, whether they have improved or worsened; it tries to reach some conclusions about the adequacy of current assets in their coverage of current liabilities; and most important of all, the study attempts to assess whether the consolidated net worth of colleges and universities increased or decreased during the period.

Both studies reach valuable conclusions and produce useful data, and both studies represent an attempt to come up with more timely information and analysis than has heretofore been possible.

As to the specific findings, Lanier and Andersen concluded that the financial condition of higher education has been progressively deteriorating in recent years. Bowen and Minter find that some 27 percent of private higher educational institutions appear to be in worsening or weak financial condition. Lanier and Andersen derive their findings from deflated, relatively broad revenue and expenditure data, whereas Bowen and Minter come to their conclusion after a detailed institution-by-institution analysis.

Lanier and Andersen single out private research universities as particularly hard-hit victims in the constant dollar decline, especially when they translate the aggregate expenditure decline on a full-time student basis. In the research university it is the research programs that have suffered the sharpest decline along with the support of graduate studies. These are not normally student-intensive areas, and to apply the same measurement to these expenditures as to undergraduate instruction does not seem to supply the proper impact of what has been happening. Without question, private research universities have suffered considerably. On the other hand, since it appears to be the national policy to reduce spending in some of the affected areas, there may indeed be a broader policy purpose to the financial decline.

Both studies tend to agree that revenue and expenditure distribution patterns have remained remarkably stable over time in spite of sharp economic fluctuations abroad. Bowen-Minter are particularly explicit about the positive aspects: private institutions on the whole (roughly 72 percent) may have had their problems, but they seem to have overcome the worst of them. Enrollments have remained high and steady and even increased slightly, and deficits have almost completely disappeared. On balance sheets, one of the findings is that institutional "net worth" has tended to increase (although not after inflation).

The Bowen and Minter balance-sheet analysis shows certain inherent financial trouble spots that conventional operating revenue and expense analysis tends not to disclose. For instance, the current ratio has declined for all groups by the end of 1974. Institutions appear to be using up some of their reserves. The Lanier and Andersen study contains no information on this subject.

Lanier and Andersen connect some of the expenditure decline and the distribution stability to the possibility that "to a large extent the increasingly severe pressures of the past seven years have reduced all of the functional categories to what might well seem to administrators to be residual 'bare-bone' levels" (p. 78). In contrast, Bowen and

Minter offer evidence of a rather dynamic appearing program vitality among the colleges and universities in their sample. The shoe may pinch but there is testimony that program innovation has kept up with changing times in spite of budget pressures.

The Bowen and Minter report cautions how important it is not to be misled by broad statistical averages. Studies of this sort, the authors say, should make careful distinctions among individual institutions and not merely among types of institutions. It has long been a defect of national statistics on higher education that data have been aggregated to such an extent that there is little if anything in the findings that speaks to the multiplicity of differentiated fates.

The Bowen and Minter report makes a concerted effort to respond to the National Commission's request for an analysis of financial distress and of financial well being within a broad, not merely monetary definition of the term. Of the 100 institutions in the sample, some 27 were found to be in financial distress; and from this the authors conclude that 27 percent of all private institutions may be said to be in financial distress. This is a large percentage, even if some critics of the report were disappointed that the authors did not come up with a larger figure and did not stress the plight of private institutions.

The Lanier and Andersen data support the Bowen-Minter finding that roughly one-third of higher education faces serious financial difficulties; however, it is not easy to see this result from the manner of their presentation. The lack of information on program changes proves to be a serious handicap in the interpretation of the data.

The merit of both studies will lie in their repetition and conceptual coordination. There is an almost total absence of "norms" or "standards" against which to measure such findings as the ones on financial distress. Is 27 percent or one-third high or low? Some institutions will always be in trouble. Is there a cycle in the economic life of institutions? How would one know when the industry or parts of it are in financial distress?

Bowen and Minter conclude that private institutions have demonstrated that they have great staying power. In fairness, the authors give credit to state and federal monies for part of this. On the other hand, they can point to the financial difficulties states have created for their own institutions and as evidence they point to the widening tuition gap. But they also ask whether the private sector may have been losing something in the struggle for survival, and they suggest that future studies may try to investigate this aspect of the private higher education problem. "It would be a hollow victory if the private sector were to survive and even prosper financially at the ex-

pense of giving up the characteristics that make its survival important" (p. 79).

Lanier and Andersen in turn recommend a series of confirming studies that ought to be undertaken to provide a better understanding of and more coherent planning for the future of the higher education industry. We could not agree more with both conclusions.

Conclusion: After Yesterday and Today

During the last five years or so, the higher education industry has been exposed to numerous attacks from a wide variety of sources. In the preceding explorations only a few of these have been identified.

Even when one is compelled to limit one's attention to a relatively small number of events, the complexity of the higher education enterprise asserts itself. The references in this essay to economic events remain perhaps the simplest problem area, however impressed we may become by its diverse character. Before attempting a brief summation and forward look, a comment is in order about some other vital concerns.

Education generally and higher education more particularly seem to enjoy diminishing popular as well as political support. Bulging college and university enrollments disguise the national disinterest. However, the scores of defeated bond issues across the land tell a vivid story of how badly public education is faring at the local level. Also, the contracting support of higher education in real terms at the state and federal levels testifies to a less than enthusiastic legislative endorsement.

It is both easy and comforting to blame economic contretemps and uncooperative legislatures for institutional hard times. And no doubt, as national economic prosperity returns some of the monetary fortunes of academic will revive also. The political decks may be stacked such that many privately controlled institutions will die along the way as we march into the 1980's, but if we all are the public's business as President Silber keeps telling us, some form of higher education will certainly continue to exist. And one of the central policy questions that must be answered is, "What kind of higher education will it be?

The discussion in this essay does not deal with this question; instead it focuses on other issues, with the emphasis on means rather than ends. Much is being made in the press today of the apparent decline in the monetary value of a college degree, and there is at least temporarily some truth in the allegation. That the negative expectation should center on the monetary value of education is less a matter of interest than a reason for concern and may well point to the general malaise in higher education.

During the Golden Years of the 1960's America built a higher

education establishment *sans pareil*. Where it stresses quality, its scientific and mental contributions have been and remain magnificent; as for quantity, we now can add Big Education to Big Government, Big Labor, and Big Business. The term "establishment" seems appropriate to higher education; for in its plants, with its sophisticated equipment, populated and used by groups of professionals who pursue their tasks by following well choreographed, even legislated rituals and customs, higher education has become institutionalized. In other words, the higher education industry, the professionals in it, the colleges and the universities, the professional schools and the departments have become the *institution* of higher education.

Today something akin to a mild structural evolution seems to be happening in higher education, with perhaps even more evolutionary stress ahead in the 1980's. This nation has periodically had difficulty employing all who want work and one reason may have been that training for work has been haphazard. Non-higher postsecondary education may be the next educational growth industry and is a concept whose time has come. This means that higher education will have competition in responding to the need for adequate and worthwhile jobs on the part of its clientele.

Higher education may also face a challenge from forces other than economic cycles, inflation, and high school enrollment decline. If one takes the trouble to ask why higher education got so big and wealthy, the answer lies in part in the fact that there was no other game in town. How much of the 1960's demand for higher education was caused by lack of alternatives? How much of the 1960's demand for higher education was caused by lack of alternatives? How much of it came about because of incentives that had little to do with education. Not that in the past everyone went to college chiefly to learn. Marriage has always been a frequent higher education outcome, though you cannot tell it by reading reports on higher education productivity.

The uncomfortable truth may have to be faced that higher education could be moving back to the place it occupied among the nation's preferences during the 1950's, albeit comparatively richer and with a larger publicly controlled sector. Even if the 1960's prove to be an aberration in our educational history, the commitment to equal educational opportunity undoubtedly will remain an integral part of postsecondary education in the future. Although our emphasis has been on undergraduate education, the 1950's would seem to be a reasonable model for graduate and research institutions as well. To anticipate a continuation of the nearly orgiastic expansion of federal research funding during the next decade that is already so full of

claims against the coffers into which our tax dollars are poured seems a bit unrealistic. If the academy is as astute in analyzing its own future as it professes to be when it addresses itself to its customary disciplines, the realization may dawn upon it that in a world of diminishing resources it could by example teach others how not to grow, how not to render its services at inflationary costs, and how to become less gigantic as gracefully as possible.

This may indeed be a far-fetched injunction, and it may be equally far-fetched to assume that in its practice as well as in its protestations, higher education will in the future again respond to the concerns of its clients. This returns us to the central issue here—What kind of higher education will it be?

Historians like to tell us that if we do not learn from the past we shall be destined to repeat its mistakes. If there is truth in this, the truth must apply to the future of higher education. Do we really know how higher education functions, what it accomplishes, and how monetary and educational resources would be used to best advantage? Do we know how the economic and political environment affects the higher educational enterprise?

If one is content to list the references one might conclude from their dizzying numbers that, indeed, we do know. But as we delve deeper into what is being written, one must be impressed with the very fragmentary knowledge and the dearth of appropriate information. Worse, perhaps, is that the evidence of careless management practice is so abundant that one must wonder why institutional disappearance is not more frequent.

For instance, the literature on endowment investment questions to which we referred earlier does not advance the state of the art of investment management so much as it implores colleges and universities to use modern management methods, to organize themselves for effective decision making, and to develop methods for evaluating their managerial performance.

As far as the current state of knowledge about the industry is concerned, the demand studies cited really tell us how little we know about higher education demand. They testify to the almost herculean data production efforts that researchers must undertake because even the most fundamental appropriate information is not being collected by regional or national agencies, whose function such data gathering ought to be.

To those of us who have been associated with the many efforts designed to produce a higher education price or cost-of-living index two disturbing facts continually come to mind: (1) within the federal

bureaucracy there seems to exist a lack of competence and consensus as well as a lack of political appeal in assigning resources to this type of endeavor, which are taken for granted when analyzing the national economy. Nationally, income accounting and statistical data production go hand in hand with scholarly work designed to improve continually the understanding of what is being managed. In higher education research, there has not existed a central agency interested in or capable of developing "indicators" of the industry's health. As a result, such independent efforts as those cited by Bowen-Minter and by Lanier-Anderson become necessary; even the Halstead effort, although funded by the government, was not a high priority project.

And (2), when one investigates the statistical information capability of individual institutions, the conclusion most often arrived at is that relatively routine managerial data are unavailable. We are not referring to the obvious bother represented by requests for truly esoteric information; the fascination lies in discovering that so many institutions consider esoteric what any normal economic enterprise would expect to be routine. Thus the national data gap not only hinders national policy making but contributes to less effective institutional management.

Perhaps the single most serious defect lies in the absence of nationally credible indicators of institutional health, especially if the latter is defined in the broad manner suggested by the National Commission on the Financing of Postsecondary Education. In one sense, almost every source cited earlier somehow addresses itself in its own limited way to the institutional health question. The demand studies, the Bowen-Minter report, and the Lanier-Anderson analysis demonstrate quite clearly how handicapped the researchers were by lack of data and an agreed to analytical framework.

The development, nationally and with the assistance of the states, of a set of comprehensive indicators of institutional health should have highest legislative priority. It has been said that statistics do not vote and thus the allocation of tax funds for gathering statistics is not a popular issue. Maybe it can be hoped that the availability in the future of better information could be an incentive to legislators. Only the government can compel institutions to provide statistical data; but researchers and administrators must learn to ask for the appropriate information. The studies cited in this essay give some idea of the type of information required. The need for this data has been demonstrated amply by the studies and the reputation of the experts who gave of their time and talent toward advancing the state of the

art. The time has now come when these individual efforts must be coordinated, at least to the extent of the data collection efforts. In this way our understanding of how the higher education industry functions and of how it is affected by internal and external events will grow quickly enough so that we may be ready with appropriate policies if the much heralded difficulties of the 1980's should in fact come to pass.

The 1980's promise to be turbulent years in higher eucation. We have referred earlier to the calm before the storm. If one recalls the cries of distress that emanated from the groves of academe repeatedly during the last five years, then it should be asked, What is going to happen when the enrollment news is really getting bad for selected groups of institutions? More attention should be given to these future prospects by legislatures and planners at the state and federal level with the objective of setting up contingency plans for all of higher education.

The studies cited, particularly those by Radner *et al,* take a stab at the planning issue in recommending models of higher education enrollment and production under specific assumptions. Who should have access to colleges and universities and their undergraduate programs? Should instruction be given in small classes or groups to those who are at the start ill prepared? What would it cost and how much money would alternate schemes of undergraduate instruction and learning require? Is it too much to ask that efforts such as Radner's and the Carnegie Council on Policy Studies be multiplied, coordinated at the legislative level, and focused squarely on the industry's need and shape for the 1980's? Hopefully, the commitment to provide access and reasonable choice to the economically disadvantaged will not be diluted in any future plans for higher education.

From most of the studies cited here one is impressed with how well higher education has adjusted its monetary condition to the recent economic and political adversities. It is true that programs and staffs have been cut back in many places. It is true that perhaps one third of all institutions face serious financial impasses. It is true that salaries for professional staffs have not been rising with the rate of inflation, but then they have not elsewhere. And it is true also that the nation seems to groping for a viable higher education policy. Nevertheless, the news from the campus has been upbeat more than it has been distressing, at least as far as numbers are concerned.

The purpose and quality malaise seems to persist. The emphasis is, has been, and probably will continue to be on the survival and the

enduring financial strength of institutions and those who obtain their livelihood from them. Higher education must demonstrate to those who are asked to fund it that by supporting the establishment they will also serve students. To date, this still is taken for granted unquestioningly more often than may be justified. The confidence crisis that confronts higher education will not go away until the analysis of educational institutions permit us to evaluate just how well the student is being served. To reach the objective of ending this crisis the need for the development of an appropriate information base is imperative.

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