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The Problem of Rising Costs

Simply put, the cost of what we are doing at universities is rising quickly.

Harold Shapiro, 1993¹

EXPENDITURES by American colleges and universities increased rapidly during the 1980s, markedly so among private institutions. Tuition charges rose sharply as well, making the rate of inflation in private college tuition even worse than the much-heralded run-up in medical costs. The aim of this study is to examine these increases, particularly as they have affected private research universities, and to consider their possible causes. This initial chapter begins by providing some background on the increases, describing the increases in spending and tuition and noting how they came to play a central role in the larger debate on the direction of and policy toward higher education. It then presents an overview of the book, by addressing the general importance of rising costs, previewing the book's conclusions, and outlining the organization of chapters.

AN EXPLOSION IN SPENDING AND TUITIONS

Higher education in the United States is a costly enterprise. Measured by aggregate statistics, the expenditures by all 3,400 colleges and universities amounted to some \$164 billion in the 1991/92 academic year, or about 2.9 percent of the gross domestic product (GDP).² From the perspective of a family sending a child to college, it no longer is uncommon for the financial burden of a four-year program to reach six digits, making college the second largest lifetime expense for many families, after the purchase of a house.

Beginning around 1980, these costs, measured in real, inflation-adjusted dollars, began to rise rapidly. Growth was especially rapid at private institutions. Figure 1.1 shows trends in spending over time in colleges and universities, using information on educational and general expenditures per full-time-equivalent (FTE) student and adjusted for inflation.³ After holding steady between 1929/30 and

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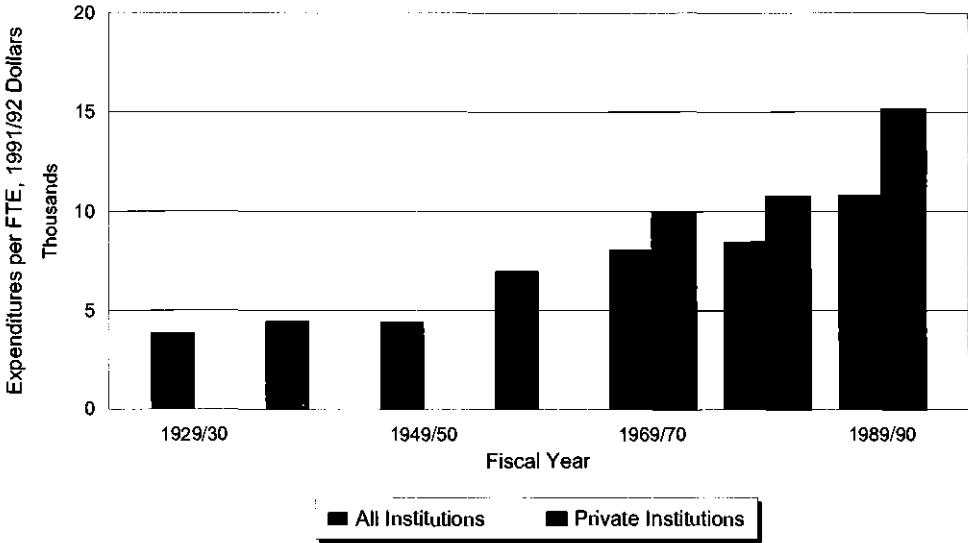


Figure 1.1 Expenditures per FTE, Constant Dollars.

Sources: (a) 1929/30–1969/70: U.S. Department of Education (1989), Table 281, p. 304; 1979/80: U.S. Department of Education (1989), Table 278, p. 301; 1989/90: U.S. Department of Education (1992), Table 332, p. 327.

(b) 1969/70–1989/90: U.S. Department of Education (1992), Table 187, p. 197; 1929/30–1959/60: Bowen (1980), Table 41, p. 261.

(c) 1969/70: U.S. Office of Education (1973), Table 130, p. 114; 1979/80: U.S. Department of Education (1990), Table 280, p. 303; 1989/90: U.S. Department of Education (1992), Table 324, p. 329.

(d) U.S. Department of Education (1992), Table 187, p. 197.

Note: Expenditures refer to general and educational expenditures.

1949/50, average cost rose rapidly after 1950, exhibiting the sharpest increases during the 1950s and the 1980s. Between 1979/80 and 1989/90, spending per student in all institutions grew at an annual real rate of 2.4 percent, and at a 3.4 percent rate in private institutions alone. In their study of costs in higher education during the period 1979 to 1988, Getz and Siegfried (1991) found that costs per student rose especially fast in private research universities and private liberal arts colleges.⁴

Tuitions rose sharply as well, with particularly steep increases in the private sector. Throughout most of the past three decades, the average tuition and fees charged by colleges and universities in the United States tended to increase faster than the overall rate of inflation. While the rise was modest for state-supported institutions, it was more rapid among private institutions, accelerating dramatically during the 1980s. Figure 1.2 charts average tuition, room, and

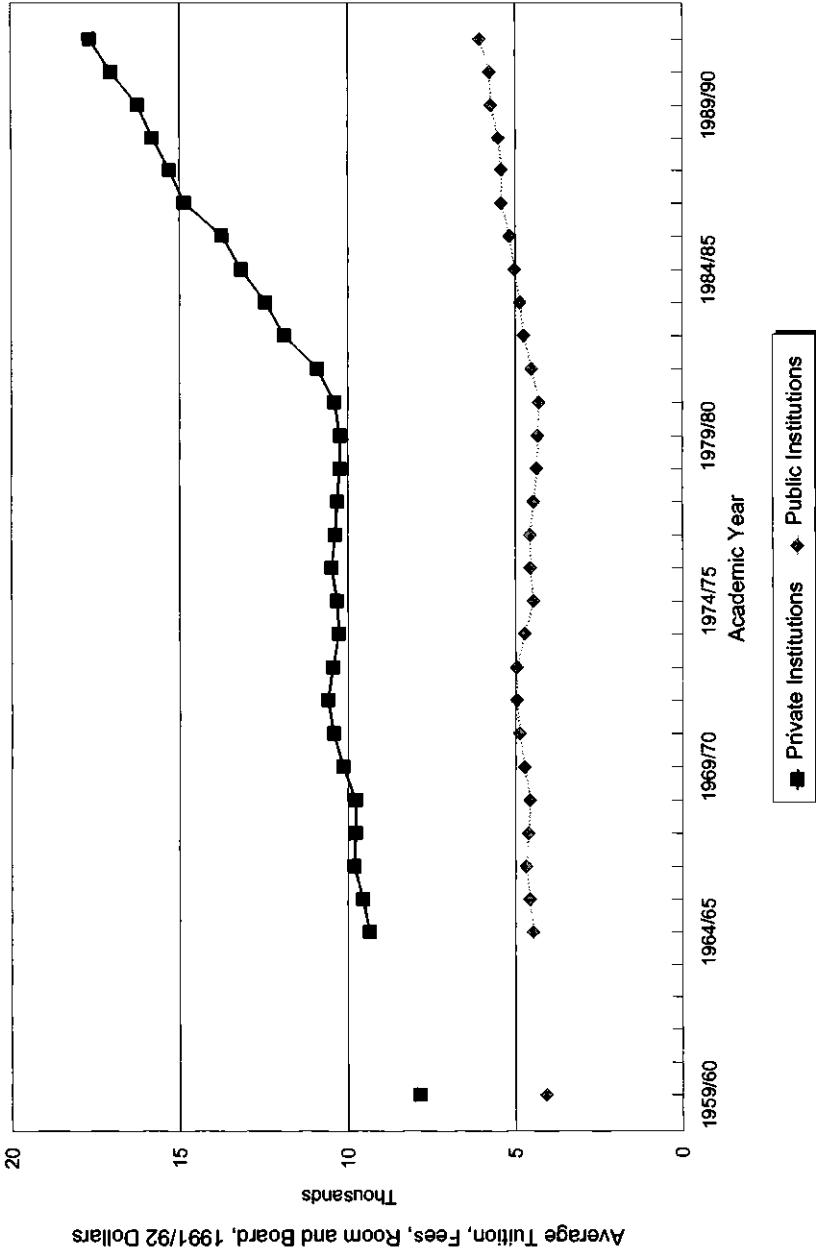


Figure 1.2 Average Cost of Attendance, Public and Private Universities, Constant Dollars.
Source: U.S. Office of Education (1969), Table 120; U.S. Department of Education (1992), Table 301.

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board in constant dollars for public and private universities over the last three decades. During the 20 years from 1959/60 to 1979/80, average real tuition and fees rose at a scant 0.3 percent average annual rate in public universities and at a 1.3 percent rate in private universities. After 1979/80, however, the growth rate in the public universities increased to 2.8 percent; among the private universities, it jumped even more, to 4.5 percent per year.

To be sure, the tuition figures cited here refer to the “sticker price,” before financial aid is netted out. In fact, during the 1980s, institutions devoted a growing share of their own funds to pay for scholarships, in effect giving students a larger discount from the stated tuition rates.⁵ These effective discounts moderated the growth in net tuition slightly, by an average of 0.6 percent per year in private institutions and 0.1 percent per year in public institutions. Nevertheless, even correcting for this expansion of aid, the rates of growth in net tuition remained high—about 2.7 percent annual real growth in the public sector and 3.9 in the private sector. In fact, during the period between 1975/76 and 1991/92, the inflation in the net-of-aid cost of attending private universities exceeded not only the overall rate of inflation but also inflation in medical costs.⁶

Increases such as these attracted particular attention in one very visible group of private institutions: the handful of nationally known private “elite” research universities and liberal arts colleges. Enrolling only a tiny fraction of all undergraduates, this group of institutions is distinguished by its disproportionate share of the nation’s top students, most-prominent scholars and scientists, and basic and applied research.⁷ As measured by the percentage of applicants accepted for undergraduate admission and the qualifications of those admitted, these colleges and universities boast the most competitive admissions standards in all of higher education. The very names of the research universities in this group—Columbia, Johns Hopkins, Stanford, and Yale, among others—bespeak world-class research, academic selectivity, and social prestige. These names also have come to be associated with high tuitions and, in the view of many critics, excessive spending.

To illustrate how the increase in costs has manifested itself in the tuition at one of these prestigious institutions, consider the case of the University of Chicago, whose impressive gothic campus in Hyde Park was built near the end of the 19th century. Imagine a student preparing to enroll for a year’s study in the year 1900. This student would have faced a bill for the year’s tuition and fees that is laughably small by today’s standards: \$120. When translated into dollars corresponding to the 1991/92 academic year, the bill still would be a

downright cheap \$2,340. Eight decades later, in the fall of 1980, a student beginning a year at Chicago would face a bill for tuition and fees of \$5,100, or \$8,090 in 1991/92 dollars. Over this 80-year span, tuition had grown an average of 1.6 percent per year faster than had overall price inflation. But during just the next 11 years, Chicago's tuition and fees would double again in constant dollars, rising to \$15,945. The average annual growth rate during this most recent period was a breathtaking 6.2 percent over inflation. As dramatic as this escalation in tuition and fees at the University of Chicago was during the 1980s, however, it was by no means unusual among America's most prestigious private colleges and universities. In Figure 1.3, the century-long rise in Chicago's tuition is compared in graphical form with that of Duke's. Although Duke's tuition remained below that of Chicago's for most of the period, it is clear that tuition at both institutions followed almost the same trajectory.

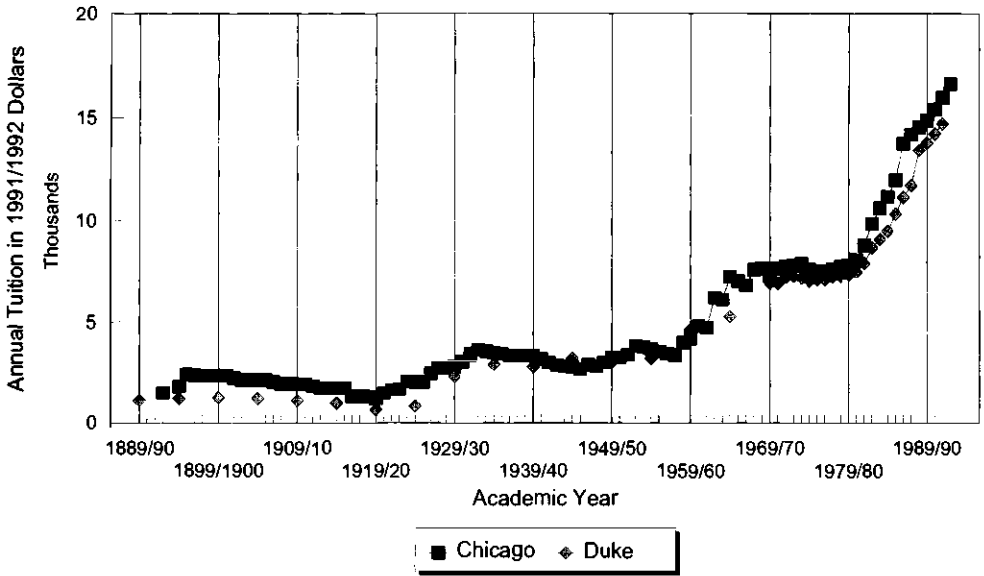


Figure 1.3 Trends in Tuition Rates at Chicago and Duke.

Source: Tuition data: Duke University Annual Reports and unpublished data; unpublished data, University of Chicago. Price data: before 1939, U.S. Department of Commerce (1960), Table F 1-5, p. 139; 1938 to 1959, U.S. Council of Economic Advisers (1991), Table B-3, p. 290; after 1959, U.S. Council of Economic Advisers (1994), Table B-3, p. 272.

Note: Nominal figures are deflated using the GNP price deflator.

COSTS AND CONTROVERSY

A headline on page 1 of the *New York Times* in May 1987 announced, "Tuition Hit New Peak, Igniting a Bitter Debate."⁸ The rapid rise in costs and tuitions during the 1980s became a flash point that intensified an ongoing debate over the direction of higher education itself, serving as evidence for critics of the inefficiency, misdirection, and even greed of institutions of higher education. Some critics viewed the run-up in costs as a direct result of an increasing emphasis on research at the expense of teaching. Others pointed to what they saw as excessive spending on frills and bloated bureaucracies.

The criticism of rising costs came from many quarters. For example, in editorials, the *Washington Post* called higher education "a machine with no brakes" and criticized in particular "the reckless escalation of tuition" and the "outsized demands of the richest and most famous universities."⁹ *Business Week* described higher education as "a huge, sprawling enterprise with sclerotic bureaucracies."¹⁰ One op-ed piece in the *Wall Street Journal* charged that "productivity is a dirty word when it comes to higher education."¹¹ Highly critical books denounced various aspects of higher education. One book described faculty as "overpaid, grotesquely underworked, and the architects of academia's vast empires of waste" (Sykes 1988, p. 5). Another stated, "As increasingly vast sums of money have poured into colleges and universities over the past half-century, one of the most striking results has been that professors have taught fewer and fewer classes, and have done more and more research."¹² Critics also blamed rising costs on new spending for recruitment and student amenities, a proliferation of courses and departments, and increases in administrative bureaucracies.¹³ Professors themselves criticized the growth of administration, with the president of the American Association of University Professors (AAUP) claiming, "Huge amounts have been devoted to funding administrative positions that a few years ago would have been thought unnecessary" (Bergmann 1991, p. 12).

This critical attitude also found a home in Washington's corridors of power. Ronald Reagan's Secretary of Education, William Bennett, was outspoken in his criticism of higher education, citing among other faults its "greedy" pricing policies.¹⁴ In a widely noted speech during Harvard's 350th anniversary celebration, he stated, "American higher education simply refuses to acknowledge the obvious fact that, in general, it is rich." He went on to criticize, among other things, what he saw as decreased attention to undergraduate educa-

tion (Bennett 1986, p. 29). Similar ideas were expressed on Capitol Hill as well. One House subcommittee held hearings entitled, "College Education: Paying More and Getting Less" (U.S. House of Representatives 1992b). Not only was new funding for university research receiving careful scrutiny, there appeared to be a growing inclination to take some action to restrain cost increases, such as conditioning federal aid on cost containment. In 1992, the President's Council of Advisors on Science and Technology (1992, p. 19) summarized the situation in this way:

Public confidence in universities is eroding. Although studies show that the economic value of an advanced education has increased substantially in the last decade, there is nevertheless a growing concern that tuition and related costs are rising too quickly and that the teaching programs of the research-intensive universities should receive more attention.

Because of their prominence as well as their high cost, the elite private research universities were subject to a large share of this critical scrutiny. One defining moment was the chilly reception given to Stanford president Donald Kennedy in hearings about overhead rates on federal grants; the hearings produced embarrassing disclosures about Stanford's financial practices, one of which was the inclusion of a yacht and other luxuries in the base used to calculate the amount the university charged for indirect costs on its federal grants and contracts expenditures.¹⁵ Even more attention was focused on the elite institutions by the Justice Department's antitrust case against several groups of institutions, the most prominent of which was the "Overlap Group," an informal consortium that included MIT and the Ivy League schools. The Overlap Group held annual meetings to share information about the financial need of individual students, which had the effect of removing price differentials among schools for most recipients of aid and, therefore, the further effect of preventing a bidding war among institutions for prized applicants.¹⁶

Beyond the very serious implication that these institutions were running a cartel for the purpose of fixing prices, the Justice Department case also focused attention on the role of financial aid in the cost escalation. Conceived in large part by these institutions during the 1960s, the financial aid system, operated by institutions and supported by federal aid programs, was based on a definition of a student's financial need as the difference between the cost of attendance and an amount supposedly indicating what that student's family reasonably could pay. This system had two effects: (1) to enti-

tle students at the most expensive institutions to the largest amounts of government aid, and (2) to create within each institution an apparent "Robin Hood" transfer from rich students to poor students.¹⁷ Thus, not only were the prestigious institutions being accused of running a cartel to fix prices, they were receiving a disproportionate share of government student aid funds and were viewed by their more affluent customers as running redistribution programs among their own students. That their tuitions were rising at breakneck speed simply poured gasoline on this firestorm of criticism.

The escalation in costs did not go unnoticed, or undefended, by the institutions themselves. University presidents routinely expressed concerns about rising costs, particularly about those related to scientific research and instrumentation, and about how these increases might affect the ability of their institutions to conduct path-breaking research. In defense of the increases, universities pointed to outside pressures on budgets, including increases in needed purchases of scientific equipment, the rapid rise in the cost of books and academic journals, rising faculty salaries, a growing reliance on institutionally funded student financial aid, the need to attend to the physical deterioration of physical plants, and increasingly burdensome varieties of government regulation.¹⁸

As is evident from its themes, much more is at stake in the controversy over the rise in costs than just the mechanics of financing a major college or university. Especially as it pertains to the group of elite colleges and universities, the issue of rising costs carries with it implications for several important functions in which these institutions are involved. One of the most important functions of research universities, and of the well-known private research universities in particular, is the creation, extension, and development of knowledge, both basic and applied. The research carried out in these institutions, some of which is financed by government, contributes materially to the economic well-being of the nation and the world, spurring economic growth and, in many different ways, enhancing human welfare.¹⁹ Although industry carries out research and development on a large scale, the research conducted in universities is recognized as having a special role, as it often is more basic or generalizable than research that can be justified by individual firms. Because of the economic usefulness of university research, anything that affects its cost to the nation is by definition a matter of some concern.

A second function that may feel the impact of rising costs is, of course, the education of students, a function that can be seen perhaps most clearly in the advanced training that universities offer.

Not only is this training central to the continued economic growth of the United States, university education increasingly has become one of the country's major export industries, sending an ever-growing number of graduates back to their native countries. How the increases in costs will affect the ability of American universities to retain this preeminent position is unclear.

Still another reason for concern about increasing costs arises from the role of higher education, in particular, the role of the group of selective private institutions, in influencing the transmission of affluence and power from one generation to the next in this country. Although American higher education offers to the aspiring young person a larger number of avenues to success than is afforded in other countries,²⁰ the fact remains that admission to one of the 50 most selective colleges and universities tends to confer on a young person the chance at a credential of enduring economic and social value. Given the importance in the American civic tradition of the principle of equal opportunity and its embodiment in discussions of higher education policy in the emphasis on "choice" as a primary goal of student financial aid,²¹ it should not be surprising that the affordability of college, especially of these elite institutions, is a question of no mean policy significance. Indeed, the ability of a talented young person to rise from the poverty of an urban neighborhood or depressed rural area to attend Harvard stands as something of a symbolic litmus test of equal opportunity in America. Thus, rising tuitions and their impact on the affordability of the best college education are significant for this reason as well.

ARE RISING EXPENDITURES A PROBLEM?

As it and similar terms are employed in public debate on higher education, the term "escalating costs" invariably is meant to convey something undesirable, whether the writer has in mind tuition charges or some measure of per-student spending. Before proceeding in a study of either tuition or spending, it is important to understand the significance of rising expenditures. A moment's reflection will make clear that an increase in spending is not, by itself, cause for alarm. Consider, for example, one of the simplest types of spending units, a family. By definition, the family's expenditures, like those of a firm or a university, reflect the amounts of various items purchased and the cost per unit of those items. If expenditures rise from one year to the next, the increase may reflect decisions that are discretionary, such as increases in the amount of groceries, clothes,

or electricity purchased, or may reflect forces over which the family has no control, such as an increase in the price of these items. A third possibility is that the increase might reflect inefficiency, such as leaky insulation or a car that needs tuning. We worry about the impact of forces of the second kind on the well-being of families, as measured in increases in the Consumer Price Index (CPI), because inflation represents an increase in the cost of attaining the same real level of consumption. Likewise, inefficiencies are a concern because they decrease the attractiveness of the entire menu of possible consumption choices. One's evaluation of rising expenditures must be quite different, however, if the increase occurs simply because a decision has been made to buy more of something, or to buy an item of higher quality. Such decisions may be wise or unwise, but there is no reason to suppose that the decision-making unit is necessarily worse off for having made them.

These generic categories are useful for suggesting three possible explanations for rising costs in higher education. One possible cause can be laid generally to *exogenous forces*, any external influences that have the effect of changing the prices that institutions pay for inputs. For example, explanations stressing the market determination of faculty salaries, the high cost of computers and scientific equipment, the increase in cost sharing in government grants and contracts, or the growth in burdensome government regulation all relate to forces outside the influence of any one institution. Developments such as these imply higher costs and, therefore, a harsher economic environment in which existing functions are carried out. Note, however, that not all exogenous forces are unfavorable. Some, such as those in the form of technological improvements, may serve to decrease the cost of inputs. Whatever the direction or cause of changes in input prices, colleges and universities, like other firms, usually have some latitude for responding by changing the mix of inputs, for example, by substituting computers for labor.

A second possible explanation for rising costs is *output choices*, such as the increases in expenditures required for institutions to upgrade their faculty, add new programs, or diversify their student bodies by offering new scholarships. In these cases, expenditures may rise simply because a decision has been made to buy more of something, or to buy an item of higher quality. Rather than reflecting forces outside the control of decision makers, as in the first case, this explanation arises from the choices made by institutions. A third possible reason is *inefficiency*. Whenever a given set of inputs produces less output or lower-quality output than it could produce under ideal conditions, the cost per unit is higher than it could be; this is ineffi-

ciency. Explanations suggesting such factors as bureaucratic bloat or self-serving faculty behavior appeal to this theme.²² If organizations and techniques fail to reflect “best practices,” resources are being wasted. It is useful, although frustrating, to note in passing that the latter two explanations assume that the “output” of colleges and universities can be identified, if not actually measured. In fact, the services that these institutions produce are numerous, diverse, and not at all amenable to quantification.

The extent to which one need worry about rising expenditures depends on one’s perception of the cause. To the extent that these increases arise from forces over which institutions have little control, sympathy and understanding are called for. To the extent that they arise because of decisions to expand missions or improve quality, the nature of the improvements must be weighed against the cost, as well as against whether the beneficiaries and payers are the same. If tuition from undergraduates is used to allow faculty more time to conduct research, for example, there may well be justification for raised eyebrows. In a survey focusing on expenditure increases during the 1980s, college and university financial officers most often reported that costs had risen faster than inflation in the following categories: insurance, government regulations, libraries, scientific and computing equipment and facilities, and development (and, in every case, the percentage noting the increases was greater than average in doctoral institutions) (Chaney and Farris 1990, p. A-13). These categories suggest a combination of rising input costs and deliberate decisions to do more things, or to do them better. To the extent that costs rise simply because of inefficiency, however, the concerns of critics may be well founded, and policies designed to force economies may be justified.

WHY DID SPENDING RISE SO FAST?

In considering this book’s motivating question of why expenditures in private research universities rose so rapidly during the 1980s, it is important to examine particular aspects of these institutions, as well as of that decade. The economic conditions that developed around 1980 provided what amounted to a window of opportunity for the best private colleges and universities to improve, and to remain competitive with other elite institutions doing the same thing. To some extent, the rise in spending was forced by increases in the real cost of inputs, such as faculty and library books; however, these cost pressures do not explain the bulk of the spending increases. There is

even less evidence of increasing inefficiency, unless shrinking classroom teaching loads by faculty are an indication of that trend. If the decrease in classroom teaching was replaced by research or administrative work that contributed at least as much to the output of institutions, then the bulk of the increases in spending therefore must be laid to the remaining category—that is, to an increase in output, in the form of more services, more faculty, more research, and higher levels of quality.

To understand how these increases occurred, it is necessary first to consider the nature of the beast that is the modern private research university. Lacking virtually any of the hierarchical structure of the modern corporation, the private research university operates more like a little democracy than an efficient firm. Because of the independence traditionally accorded to its most prominent workers—its faculty—it possesses neither the capacity to formulate a coherent corporate objective nor the ability to implement one, if it existed. By default, then, the operational objective of the research university is simply to “be the best.” At the same time, each research university is locked in continual battle with its competitors, principally for faculty, research funding, and top students. Expenditures on salaries, facilities, and amenities are crucial to this competition, and therein lies the source of an ongoing, unsatisfied demand on the part of universities for more revenue. In contrast to today’s corporate managers, however, university administrators possess neither the ability nor the financial incentive to cut costs. As a result, every private research university worth its salt always has a list of worthwhile projects to fund but little prospect of funding them by cutting programs.

These institutional characteristics were as true in the 1970s as in the 1980s. What was different in the latter decade was the *opportunity* to achieve institutional objectives. Several fundamental economic changes occurred about this time, including increases in the wealth of the affluent, a dramatic improvement in the economic benefit from attending college, and a sudden slowdown in overall price inflation. Applications to the nation’s most selective colleges and universities increased rapidly, suggesting strong demand for this kind of college education. Yet the capacity of the institutions barely increased, resulting in persistent excess demand. In this environment, the leaders of these institutions could not fail to realize that they *could* raise tuition without undue harm to their continued ability to make highly selective admissions decisions. Large increases in tuition would be a problem, of course, especially if they discouraged middle-income students from applying. Nevertheless, worries about the effects on the poor could safely be put aside, owing to the social

contract into which all selective colleges and universities had entered.

This social contract consisted of two promises: (1) to remove consideration of financial need from admissions decisions (so-called "need-blind" admissions); and (2) to provide financial aid to all matriculating students according to a standard formula that assesses families' ability to pay for college, based primarily on the families' income, net worth, and number of children in college.²³ Some commentators have taken the view that financial aid is primarily a means of price discrimination whereby applicants with more choices are given a discount.²⁴ While that characterization may be accurate for many less selective private institutions, for the selective institutions examined here, the commitment to this social contract made expenditures on financial aid a real cost of doing business. To play by these rules required spending money on a certain kind of need-based aid system, even if it meant dipping into institutional funds. That most of these institutions did in fact have to use institutional funds to pay for this commitment makes for an interesting implication: the policy objective of "choice" (that is, the idea that any qualified student should be able to choose to attend any college, even the most expensive one) was financed at the margin not by government but by the most selective institutions themselves. They did not do so necessarily out of altruistic motives, however. Subscribing to the social contract on student aid may simply be the best way to signal to the world that one's degrees are earned by merit, not by financial resources.

Thus, the increase in spending by the top private research universities can be understood as a result of the impact of some unprecedented economic changes on a set of institutions that featured a distinctive structure and operating style. Other factors, including a change in the nature of federal support and the advent of computerization, played a small part. But the bulk of the increases that occurred was the result of paying for more and better units of the educational services that these institutions always had produced.

THE APPROACH TAKEN IN THIS BOOK

Numerous studies conducted in recent decades have examined university expenditures, but most have relied on aggregated financial data for cross-section samples of institutions (for example, data based on U.S. Department of Education surveys of institutions).²⁵ These data are subject to two important drawbacks, however. The first drawback arises from the heterogeneity in missions that exists

among institutions. Clearly, the functions of research universities and liberal arts colleges differ markedly, and almost any statistical comparison that could be made between a college and a research university would be of limited value in the absence of other information. In fact, most empirical work using such survey data takes this heterogeneity into account by analyzing groups of institutions separately, such as by the Carnegie classification.²⁶ Even within these classes, however, other important differences among institutions exist, for example, between research universities with medical centers and research universities without medical centers. While some of these differences can be taken into account by further dividing the groups,²⁷ comparisons even within subgroups may be skewed significantly by the presence of professional schools, differences in areas of emphasis in arts and sciences programs, or quality differences in otherwise similar programs.

A second drawback of federally collected survey data is, simply, their lack of reliability. Because the survey responses collected from institutions are not audited, both changes in classification and outright errors can produce data that are of little use. In their study using surveys for three recent years, for example, Getz and Siegfried (1991) provide several striking anomalies, including an increase in public service expenditures at Columbia from \$0 in 1984 to \$126 million in 1988, no expenditures by Harvard on libraries in 1988, and numerous fluctuations in enrollments that appeared implausible. Although it is possible simply to omit observations that are manifestly wrong, these problems highlight a more fundamental difficulty with survey data—the basic lack of comparability in accounting categories between one institution and the next. What is counted under student services at one university might very well be part of academic administration at another, either because of differences in administrative organization or simply because of the way that accounts traditionally have been maintained at each place.²⁸

Largely in response to the problems posed by the use of survey data, the present study substitutes in-depth examinations of four institutions for the analysis of cross-section survey data. Three of the four (Duke University, Harvard University, and the University of Chicago) are private research universities, and one (Carleton College) is a private liberal arts college. In an effort to increase comparability, the study focuses within each institution solely on the arts and sciences, excluding both medical centers and professional schools. The remainder of this section describes the approach taken in more detail.

Case Studies

This study differs from previous, mostly cross-section analyses of higher education finance in that its principal data come from only a small number of institutions. Rather than relying on comparisons between institutions, which is the *raison d'être* of cross-section analysis, it focuses on *changes within these institutions over time*. Data within institutions are further divided; for some applications, information on individual departments is examined.

The only valid justification for this course of action is the belief that the disadvantages inherent in relying on any small group of examples, which, obviously, may be unrepresentative of a larger group of institutions, will be outweighed by the advantages. One obvious advantage to this approach is that it allows for a level of detail unattainable in studies using data that are aggregated at the institution level. A second clear advantage is comparability of data. Comparability has been sought in two ways. First, by obtaining and examining detailed data, particularly financial data, it has been possible to reconfigure information into categories that are much more similar in function across institutions than are the categories that each institution defines and uses for its own reporting purposes. Owing to differences in organization, mission, or quality, however, this kind of reconfiguring can go only so far. For example, whereas one university might have departments in both history and the history of science, another might have only a history department, with its historians of science split between history and other departments. Although two institutions might have departments of psychology, one might have a doctoral program and the other only a master's program, or one might have a higher-quality doctoral program than the other. It is not necessary to look very long or very hard to find differences such as these when comparing actual institutions.

A second step in seeking comparability is to take these categories, which have been adjusted to be as comparable as the available data will allow, and to examine changes in them over time within each institution. This step reflects the belief that any modifications over time in accounting definitions, the allocation of functions, basic institutional objectives, or quality within a given college or university will tend to be minor when compared with measurable changes in spending, enrollments, and other relevant quantities. In order to gauge trends in each institution over the recent period in which costs have risen rapidly, data were collected over a 15-year period at five-year intervals, for academic years 1976/77, 1981/82, 1986/87, and

1991/92; the 1991/92 academic year was the most recent one for which detailed information was readily available for each institution. In some cases in which information was not available for those four years, information was collected for other years. In order to simplify the comparison of trends in quantities of all kinds, especially where the time intervals are not the same, changes generally are expressed in terms of annual growth rates.²⁹ As in any comparison of quantities over time, if growth is not smooth, measured growth will be sensitive to the choice of beginning and ending years.

In a further effort to peel the onion of detail, several of the most detailed analyses in the study, presented in chapters 7 and 8, use case studies within the case studies, usually studies of particular departments. For example, the calculation of classroom teaching loads requires information on the status and activities of individual faculty members. The volume of information required to make calculations for an entire institution made it impractical to examine more than a few departments. Therefore, detailed calculations on classroom teaching loads, staffing, and course characteristics that are presented in various chapters are based on the same three academic departments at each of the institutions, one each in the humanities, social sciences, and natural sciences. The departments were selected as being roughly representative of three different traditions of research and teaching, with the humanities department relying on books, library research, and writing; the social sciences department more heavily dependent on computing and quantitative research; and the natural sciences department using laboratories outfitted with expensive equipment and training graduate students largely through hands-on research. At Duke, which contains a separate school of engineering, a fourth department, in engineering, also received special scrutiny. To guard against the possibility that the calculations in the present study could be used to identify individuals or small groups of individuals, the identities of the sample academic departments are not given. Particular departments that are identified, for example, in the listing of course offerings, are not necessarily the same departments as those used to make the detailed calculations mentioned here.

This approach is not without drawbacks of its own. The most glaring weakness is, of course, the small sample. No four institutions can be representative of higher education nor, for that matter, of highly selective private institutions. To a certain extent, it must be left to the reader to judge the extent of applicability of the present study's findings. The four institutions are anything but a random sample. As private, highly selective, and relatively well-endowed institutions,

they are distinctive. Three of the four are among a group of only about 100 research universities in the country, with two among the very most prominent of this type. However, the set of institutions to which these four belong has considerable importance, for the share of the nation's research they conduct and for the disproportionate contribution of their undergraduate colleges to the training of leaders in many fields, if not for the rapidity of the escalation in their costs in recent years.

Another, probably less critical drawback to the approach is that using administrative records to make comparisons over time could introduce bias into the findings. One important criterion used in constructing time series of variables within institutions was, for obvious reasons, that comparable data be available over the period in question. This approach tends to make it difficult to follow changes in quantities that are increasing so rapidly that information on earlier years has not been recorded or has been buried in administrative structures that, perhaps because of the growth itself, have been modified over time. For example, owing to student interest or burgeoning research opportunities, a department of environmental studies could have been created during the period of study, perhaps drawing faculty from several different departments. A change in organization of this sort usually will mean that accounting and other administrative data will not be comparable over time; avoiding such cases because of lack of comparability might well bias the choice of cases toward less rapidly growing functions. At the very least, it must be recognized that, despite the steps taken to increase comparability of the time-series data, administrative or other changes over time will tend to corrupt the data, and attempts to avoid this corruption may bias the pattern of findings. Neither of these potential possibilities appears to be a serious problem, however.

Points of Methodology

Several aspects of the methodology are worth mentioning. First, for the purpose of considering the causes and implications of the increase in spending in universities, it is most useful to focus on expenditures that institutions find to be costly and over which they have control. This study therefore examines internally financed spending, that is, spending paid for by unrestricted revenues such as tuition, investment income, and return from endowments. Excluded from this category are expenditures tied to outside grants and contracts or to the self-financed operation of auxiliaries, such as dor-

mitories and dining halls. Internally generated funds are used to finance institutions' core functions, including teaching, research, and much administration.

Second, a principal component of the study focuses on the analysis of expenditures. Throughout the study, however, every reasonable attempt was made to identify other quantifiable aspects that might be related to those expenditures, including enrollments, number of faculty, and measures of employment. Where possible, attempts were made to identify the portion of these changes in expenditures that can be attributed to increases in associated quantities. Although they may contribute little to our understanding of the behavioral aspects of expenditure increases, these decompositions offer a neutral way to separate increases.

A third point relates to the treatment of administration and other shared functions in the analysis of expenditures. A necessary step in determining an institution's expenditures for arts and sciences is to allocate some portion of central administration and other university-wide operations to the arts and sciences component. This methodological problem is much the same as that which arises in the negotiation of universities' overhead rates for grants. For this study, administrators at the institutions were asked to estimate the proportions of the expenditures in each departmental category that apply to arts and sciences. These proportions were then applied to the corresponding university totals in order to obtain an amount for each expenditure category for each year that reasonably can be associated with arts and sciences functions.

A fourth general point has to do with inflation. Following the standard practice in applied economics, virtually all monetary quantities are expressed in constant dollars, usually dollars corresponding to the 1991/92 academic or fiscal year. For most purposes, the price index used is the GDP implicit price deflator, a price index that reflects all goods and services produced in the economy, rather than the narrower group of retail goods and services covered in the other most commonly used price index, the CPI. In most cases, the difference between these two indices is small. Regardless of the choice of index, however, following this conventional practice does, in a sense, misrepresent the reality that the administrators, faculty, and consumers faced at the time they were making decisions underlying the data that we now examine, after the fact. In particular, unexpected changes in the rate of inflation caused actual increases to be larger or smaller than decision makers had intended. The role of expectations about inflation is discussed in greater detail in chapter 3.

PREVIEW

To lay the groundwork for the empirical study of the four institutions presented in this book, chapters 2 and 3 begin by providing some necessary background. Chapter 2 describes universities as an organizational form, emphasizing three characteristics that set them apart from most other modern firms and aspects that they have in common with firms. It then reviews the major explanations that have been offered for rising expenditures in higher education. The chapter concludes by briefly describing the sample institutions—Chicago, Duke, Harvard, and Carleton—touching on their history, characteristics of their students, and quality of their research and graduate programs. Chapter 3 turns from the institutions to the times, focusing on the years from the middle 1970s to the early 1990s that constitute the period covered by the study, and on the developments in those years that may have had an effect on colleges and universities, particularly on their expenditures.

Chapters 4 and 5 present a detailed examination of the expenditures in arts and sciences for each of the four sample institutions. In chapter 4, expenditures are classified according to administrative unit and type of expenditure, and increases in spending for these categories are compared. Chapter 5 focuses on several prominent expenditure categories in an attempt to explain the increases by reference to other quantifiable changes. To assess the importance of administrative functions and the effect of changes in the technology of the office, chapter 6 examines the staffing patterns of several selected administrative and academic units.

Because of the key role of faculty and teaching in colleges and universities, it is important to augment the analysis of expenditure patterns with information on staffing in academic departments and on the resulting characteristics of courses. Chapters 7 and 8 therefore examine the use of faculty in academic departments, using data for several illustrative departments within each institution. Chapter 7 focuses on the allocation of faculty time among various duties, which include, but are not limited to, classroom teaching, committee work, and research. It presents estimates of average classroom teaching loads in the sample departments for four academic years from 1976/77 to 1991/92. Chapter 8 considers the courses offered by these departments from the perspective of the student, noting the size of classes and the portion of courses taught by graduate students and nonregular faculty. The book's concluding chapter notes some of the implications of the study.