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Author

Geiger, Roger L.

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POLITICS, MARKETS, AND UNIVERSITY COSTS: FINANCING UNIVERSITIES IN THE CURRENT ERA

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Roger L. Geiger

CSHE Visiting Scholar, Fall 2000

Professor of Higher Education – Penn State University

rlg9@psu.edu

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The following paper is part of a larger project on the changing markets for American higher education and reflects research and writing undertaken while at CSHE. This working paper is not to be quoted without the permission of the author.

ABSTRACT

The purpose of this study is to determine the factors shaping the financing of the principal universities of the United States, and to explore the consequences for institutions and for students. Revenues are the lifeblood of these or any other universities. The level of resources that universities command from society determines the level and scope of their activities, and who provides these resources greatly affects their behavior. Moreover, where resources are concerned, both inequality and inconsistency have been the rule. During the 1980s, universities generally were able to lift their resource levels above the depths of the late 1970s; in the 1990s, however, some prospered while others actually lost ground. The university expenditures that lie at the heart of the current controversy were shaped during these two decades, the current era for higher education.

In 1997 the United States Congress created a National Commission on the Cost of Higher Education to undertake within six months a comprehensive review of college costs and prices. The escalation of tuition prices was the most persistent public concern about higher education from the mid-1980s through the 1990s, but this exceptional federal attention testified to both the sense of urgency and the depth of concern. The Commission's charge and its subsequent *Report* were consequently focused on public definitions of this "problem": Why did colleges and universities spend so much? And how could students afford these mounting prices?¹ Largely ignored was the institutional point of view on these issues.

This focus was notably different from the previous federal attempt to gauge the financial difficulties of higher education. A National Commission appointed in 1972 as part of the overhaul of federal programs supporting postsecondary education had explicitly addressed the financial distress then experienced by numerous colleges and universities.² It was also concerned with assuring that all qualified individuals would have both access to higher education and a reasonable choice among institutions. Furthermore, it expected the Federal Government to implement programs to achieve these ends. The recent Commission, in contrast, assumed a market environment. It focused on the rising level of producer prices, the adequacy of product information for consumers, and the effects of the subsidies, discounts, and credit arrangements that allow this market to operate.

The present study is closer in spirit to the 1972 Commission. It asks what factors have shaped the financing of the principal universities of the United States, and it explores the consequences, chiefly for institutions but also for students. It views revenues as the lifeblood of these or any other universities

rather than as social costs that ought to be minimized. The level of resources that universities command from society greatly affects the scope and effectiveness of their activities; and who provides these resources greatly affects their behavior.³ During the 1980s, universities generally were able to lift their resource levels above the depths of the late 1970s; in the 1990s, however, some prospered while others actually lost ground. The university expenditures that lie at the heart of the current controversy were shaped during these two decades, the current era for higher education.

Revenues and Rising Costs

University finance underwent fundamental changes in the current era. First, as needs and expenditures rose, the additional costs of university study were substantially borne by students. Second, student financial aid was transformed from the exception to the norm. Most full-time undergraduates now receive some form of financial aid, with federal loans being most common. In private universities, institutional grants, or tuition discounts, have become similarly prevalent. As a result, students now pay different amounts for the same education. These developments have strongly influenced university costs.

The costs of higher education are the expenditures of colleges and universities for instruction-related purposes.⁴ Costs are conceptually different from the price of higher education (i.e. cost to students) which, because of the incidence of financial aid, may vary considerably from what is now tellingly termed the 'sticker price.' Universities have other costs that are not directly related to instruction. The great bulk of research costs is externally funded and separately budgeted. These expenditures thus vary independently from other internal costs. The costs of public service are similarly met through designated funds and vary widely and randomly across institutions. Costs for operating dormitories, food service, and hospitals are lumped under auxiliary enterprises, which are also unrelated to instruction. The remainder of expenditures represents the core costs of an institution of higher education—what is spent for instruction and its support, faculty learning, student needs, administration, and maintaining the campus. These costs are by no means identical to the cost of instruction alone—a concept that eludes precise specification in a multipurpose institution. Rather, the core costs reflect the resources an institution of higher education can apply to its core tasks.

For the purposes of this study, core costs have been estimated for 97 research universities—33 private and 64 public. These are major research universities engaged in both graduate and undergraduate education.⁵ They perform nearly 70 percent of academic research and graduate 68 percent of doctorates. They also award 28 percent of bachelor's degrees and 34 percent of first professional degrees. They include the largest and in many respects the finest institutions in the vast system of American higher education. Because they are multipurpose institutions, and expend their resources for multiple and complementary ends, their spending patterns can be difficult to compare. For this study, the income they have to spend for these purposes—revenues—will be employed as the best comparable measure of expenditures across institutions and over time. This approach is consistent with Howard Bowen's revenue theory of costs, which holds that "each institution raises all the money it can ... [and] spends all it raises."⁶ In practice, the size of each year's budget is determined by the amount of projected revenues.

Core educational revenues per student have been calculated by adding Net Tuition (gross tuition minus institutional student aid), spending from Endowment, and (for state universities) State Appropriations, and dividing that sum by the number of Full-time Equivalent Students. All data are adjusted for inflation to provide comparisons in 1996 dollars. The results for these 97 universities are given in the Appendices.

This definition of core university costs yields an approximation that permits comparability—across institutions and over time. It ignores certain kinds of revenues, such as gifts for current use, indirect cost reimbursements for research, and earnings from patent licenses. These revenues tend to be committed to specific purposes, most of which are tangential to instruction. On the other side of the ledger, this method also overlooks the fact that some restricted income from endowment is also directed toward similar, non-instructional ends. This definition of costs, while hardly precise, is feasible to calculate and reasonably accurate. In contrast, the alternative approach of calculating expenditures related to instruction is fraught with complications. It requires that different categories of expenditures be divided into instructional and non-instructional components. Institutions can and do make such calculations using internal accounting systems, but such results are virtually impossible to employ for comparisons.⁷ This definition also omits capital costs. Although the land and buildings of universities are an undoubted cost of education, there is no agreement how to determine or depreciate such costs. Nor are they included in

annual operating budgets.⁸ University costs as employed in this study represent the current income utilized to support the core, integrated educational enterprise.

A key concern of the current era has been how much of these costs are charged to students. This amount is represented by Net Tuition. The remainder of costs is considered a subsidy, provided by income from endowment and, in public universities, state appropriations. A critical consideration for private universities, as will be discussed below, is the relation between the tuition sticker price and net tuition. For 33 private universities in 1996, these figures can be represented as follows:

FIGURE 1. Average Costs and Student Tuition at 33 Private Universities, 1995-96

Cost/Student	_____	_____	_____	_____	\$19,090
Gross tuition	_____	_____	_____	_____	\$18,929
Net tuition	_____	_____	_____	_____	\$14,337

Figure 1 shows that private universities spent, on average, \$19,090 for each FTE student. Tuition provided \$14,337 of that total, and the institution provided the rest (\$4863). Of this latter figure, \$4592 consisted of grant aid to students who did not pay full tuition, and \$161 was a general subsidy to all students. (See Appendices for costs of individual universities.)

This scheme, which was developed to analyze private institutions, looks quite different for public universities:

FIGURE 2. Average Costs and Tuition at 64 Public Universities, 1995-96

Costs/Student	_____	_____	_____	_____	\$13,035
Gross Tuition	_____	_____	_____	_____	\$4,922
Net Tuition	_____	_____	_____	_____	\$4,181

Here, the general subsidy received by all students is \$8113, and institutional grant aid averages just \$741 per student. The implications of these figures will be examined in the next two sections. First, one needs to understand how and why university costs reached these points.

In the 1980s and 1990s, university spending (controlled for enrollments and inflation) grew at more than twice the rate in private universities as in public ones (Table 1). While the average difference between public and private universities was small in 1980, the gap widened appreciably in the years that followed.

Table 1. University Costs per FTE Student: 1980, 1990, 1996 (1996\$)⁹

	1980	1980-90	1990	1990-96	1996	1980-96
64 Public	9,205	33%	12,259	6%	13,035	42%
33 Private	9,948	63%	16,169	18%	19,090	92%

Much of this increased spending came from students in the form of tuition, but here too the sectors differ (Table 2). The growth in tuition revenues at private universities has been steep indeed, nearly doubling in real terms. Public indignation has focused chiefly on the nominal rise in the stated tuition price of the leading institutions, which ballooned to \$24,000 in 2000 from around \$4000 in 1976. But as Tables 1 and 2 reveal, real educational spending rose similarly. Students may have paid more, but the subsidies and the educational product they received have likewise grown in value. The same has not been true in public universities. Net tuition more than doubled there too, with the rise accelerating in the 1990s, but spending grew far less. At public universities, student charges compensated in part for sluggish growth in state appropriations. Developments in research universities mirrored national trends.

Overall, the amounts paid by students for higher education increased enormously. How did students and their families afford such expense?

Table 2. Net Tuition Revenues per FTE Student: 1980, 1990, 1996 (\$1996).

	1980	1980-90	1990	1990-96	1996	1980-96
64 Public	1,801	69%	3,048	37%	4,180	158%
33Private	6,716	80%	12,102	18.5%	14,339	114%

The simple answer to this question is that they have borne directly only a fraction of these expenses. When viewed in terms of national accounts (Table 3) the bulk of additional student expenses were met through federal loans. Loans still represent an expense, in fact a double one: not only must they be repaid by students, but operating these programs costs taxpayers between a third and a half of the amounts loaned. However, such expenditures differ from those paid from—and limited by—current income or savings.

Table 3. Student Financial Aid & Costs, National Totals, 1978-1996 (millions)¹⁰

	1978 (1996\$)	1996	Increase
Financial Aid			
Federal Grants	\$5,000	\$7,000	\$2,000
State Aid	\$1,000	\$3,000	\$2,000
Federal Loans	\$5,000	\$30,000	\$25,000
Total Student Aid	\$11,000	\$40,000	\$29,000
Student Costs			
Gross Tuition	\$21,600	\$55,200	\$33,700
Unrestricted Schol. & Fellowships	(\$1,800)	(\$8,200)	(\$6,400)
Net Tuition	\$19,800	\$47,000	\$27,000
Room & Board	\$17,000	\$26,000	\$9,000
Total Student Costs	\$37,000	\$73,000	\$36,000
Net Student Costs	\$26,000	\$33,000	\$7,000

The costs of higher education borne by students nearly doubled in real terms from 1978 to 1996. In the same years G.D.P. and disposable personal income each grew slightly more than 50 percent. The cost of going to college, then, grew nearly twice as fast as the economy. So dramatic a rise in a national accounting category often requires some new source of revenue to be tapped. In this case the future earnings of students (and in some cases parents) were transformed through loans into current expenditures. The distinction is an important one. This new source of purchasing power permitted students to extend their outlays to keep pace with the rising level of tuition.¹¹

From 1978 to 1996 roughly two-thirds of the additional costs of higher education were met through federal student loans (\$25 of \$36 billion: Table 3). Students and their parents increased their out-of-pocket expenditures by just \$7 billion, a rate of increase that was only *half* of that for personal income. Loans of course are not grants—there is an obligation to repay. But from the perspective of current outlays, federal loans provided close to 40 percent of the cost of attendance.¹²

Since the 1980s, an ongoing debate has revolved around the relationship between student financial aid and the spiraling price of tuition. Critics have alleged that universities have exploited federal programs for student financial aid in order to raise tuition. In the case of Pell Grants and campus-based programs any independent effect would scarcely seem possible. These programs have stringent financial need requirements and are capped at levels that limit their incidence for high-tuition institutions. The

situation with loans is more suspicious. Those who would deny a link between loans and tuition point to an absence of a short-term correlation between increasing loan volume and tuition boosts. On the other hand, given the sheer magnitude of loan volume, it scarcely seems possible that the substantial increase in the cost of attendance could have occurred without them.¹³ This latter position becomes more plausible if one examines the actual process of determining and awarding student financial aid.

The financial aid process is highly standardized across the entire system of higher education. It could be depicted as a balance scales, where the “Estimated Cost of Attendance” for a given institution is first placed on one scale. The various forms of payment are then added to the other scale until equivalence is reached. First comes the “Expected Family Contribution,” which is calculated using a standard methodology from the information on savings and income provided on the financial aid application. The next addition is “Need-based Aid” for which the student qualifies (if any). This group of payments includes Pell grants and the so-called campus-based federal programs (Supplemental Opportunity Grants, Work-Study, and Perkins Loans). The latter are all limited in size and restricted to lower-income students. Any state aid would also be added at this point. The remaining deficit is met through “Federal Subsidized Loans” and “Institutional Financial Aid.” Most public universities have limited amounts of aid to offer, and some of that is often awarded for merit rather than need. Hence, the entire deficit would usually be met through loans. In private colleges and universities, the deficit is filled with a combination of loans and institutional aid (or tuition discounts). This last addition to the scales is critical, for it allows the cost of attendance to be met and the transaction to be completed.

Several details of this last stage are crucial to the operation of the system. First, guaranteed student loans, which carry the highest subsidies, have annual and total caps. These limits were last extended in 1992. Students with substantial need at high-priced institutions would almost certainly be borrowing at the annual maximums. For additional needs they might have recourse to the unsubsidized loan programs, for students or parents. Hence, despite loan limits, the system is elastic for accommodating higher prices. Second, at private institutions, a trade-off exists between loans and tuition discounts. This allows universities room for maneuver in playing what Michael McPherson and Morton Owen Schapiro have called the “student aid game”—basically, offering more attractive terms to more desirable (or more reluctant) students.¹⁴ Hence, the availability of loans by itself can facilitate tuition increases, but the combination of loans and discounts is far more powerful. Third, despite such manipulations, the last dollar of aid essentially comes from the institution. For that reason, in high-tuition institutions increases in the cost of attendance, whether for tuition, room, or board, largely have to be matched by increases in aid to eligible students. This creates a multiplier effect whereby cost increases produce proportionately larger increases in tuition prices. For example, given a tuition discount rate of 25 percent, which is near average (Figure 1), a university would need to raise tuition by \$4.00 in order to get \$3.00 of additional revenue.

Although the process of constructing an aid package gives institutions a real capacity to influence student financial decisions, there would appear to be some element of discretion in student decisions. Student loan volume first exploded at the start of the 1980s, when highly advantageous loan terms created a strong incentive to borrow. Loans increased only moderately thereafter until the Higher Education Amendments of 1992 expanded eligibility and raised loan limits. Loan volume shot upward for the remainder of the decade, despite unprecedented prosperity. From 1996 to 1998, for example, loans increased by 12 percent (reaching twice the level of 1992), with three-quarters of that growth coming from the smaller, unsubsidized loan programs. Much of the post-1992 growth seems to have been used for larger loans to middle-income students.¹⁵ Such evidence suggests that the current escalation of loans is driven less by dire need, and more by a culture that encourages borrowing as a first resort. Another factor bolstering the loan culture is that student borrowers must begin repayment if they leave school. They thus have strong incentives to remain in college even if that means, as it usually does, additional borrowing.

In the final analysis, the rise of the student loan culture, in combination with tuition discounts, created a situation in which the final increment required to meet the cost of attendance was always readily available. Under these conditions, student resistance to price increases in an economic sense (i.e. reduced demand), especially at the more prestigious and expensive institutions, has been virtually nil.¹⁶ Constraints upon tuition increases of other kinds nevertheless persist. They include, as will be seen below, the pricing structure for the industry, the nature of the student aid system, and the potential threat of public opprobrium. However, throughout the 1980s and 1990s conditions have favored the growth of a “high-tuition/high-aid” policy. Accordingly, tuition revenue has been a major contributor to meeting the burgeoning costs of universities.

Costs at Private Universities

The high-tuition/high-aid policy can trace a long lineage. Studies in the 1960s purported to show that state funding of public universities resulted in an income transfer from less wealthy Americans to the more affluent, who enrolled disproportionately in these institutions. This theory was extensively debated during the broad probing of the economics of higher education that preceded the pivotal Higher Education Amendments of 1972. Attention was then focused on public institutions, where students paid on average one-sixth of estimated costs. Equity would be served, most analysts seemed to agree, if those students who could afford it paid a larger share of the cost of their education, and those who could not received aid based upon their financial need. One radical interpretation of this approach proposed that well-off public university students be charged full costs and all others receive aid commensurate with need. However, the Carnegie Commission articulated a moderate consensus, recommending that public tuition prices be gradually raised to one-third of educational costs and that these increases be “matched by increased aid to low-income students.”¹⁷ The Carnegie Commission took pains to justify their benchmark of one-third of costs, but their reasoning inevitably reflected the historical circumstances of that particular era. One might argue with like plausibility that equity would be served more fully by charging wealthy students a larger fraction, full cost, or a premium. The Commission’s benchmark became highly respected in theory, but no economic rationale, then or now, could determine just how high high-tuition ought to be.¹⁸

Despite the persuasive case made by the Carnegie Commission, actual tuition prices in the 1970s lagged behind inflation in both the public and private sectors. Numerous factors weighed upon the pricing power of universities, including the cessation of enrollment growth, massive new capacity, and the lowest-ever wage premium for college graduates. Only at the end of the decade, in response to double-digit inflation, were tuition prices boosted. However, it was private universities that now took the initiative.

Throughout the twentieth century a tacit ceiling price for college tuition existed, set by the most prestigious northeastern universities. A group of the wealthiest and most selective schools in the region have been joined since 1975 in the Consortium for Financing Higher Education (COFHE) which tracks admissions and financial data for its members. These institutions, and particularly the Ivy League trio of Harvard, Yale, and Princeton, tend to move largely in tandem when it suits their purposes. In the late 1970s, Harvard posted the highest tuition price, and it appears to have been first to raise prices aggressively. Beginning in 1978, before inflation spiked upward, Harvard boosted its tuition by 18 percent, to \$5,265 from \$4,450.¹⁹ For the next ten years its tuition increases averaged \$840 each year. Before these hikes, Harvard tuition had been 4 percent above the COFHE average; by 1984 it was 12 percent higher. But then the gap began to close.

Pricing leadership was exerted by those institutions enjoying the strongest market position as well as the greatest financial capacity to offer their students financial aid. When their gambit succeeded, an example was set for others. Not only did COFHE institutions follow in the wake of Harvard’s lead (Yale and Princeton were close behind), but so too did private colleges and universities elsewhere in the country, where tuition prices generally were lower than in the Northeast. As private tuition escalated in the 1980s, far from alienating students, it became associated more closely with quality and prestige. Thus, more and more institutions embraced the high-tuition approach, their social consciences always mollified by doling out increasing amounts of institutional financial aid.²⁰ By the mid-1990s a kind of convergence had occurred around the tuition ceiling. Thirty-six colleges and universities had sticker prices above \$20,000, many of them now charging more than Harvard. For private universities as a whole, the role of tuition in institutional finance remained relatively stable.²¹ But this aggregate stability and the similar sticker prices belied great differences in financial conditions across universities.

Private universities with large endowments were already granting substantial amounts of need-based financial aid. They embraced policies of “need-blind” admissions and then met the full financial needs of the students they admitted. They supported their escalating tuition with more of the same, greatly abetted by the availability of loans.²² The portion of gross tuition devoted to student aid—the tuition discount—changed little at Harvard and Yale during the 1980s.²³ However, the finances of universities with smaller endowments were more affected. Tuition discounts rose on average from 12 to 19 percent for the five least-wealthy universities during the decade. And this trend would accelerate in the 1990s. For the decade of the 1980s, nevertheless, the high-tuition/high-aid strategy of the private universities can only be termed a resounding success.

The private universities increased their real per-student spending base by 63 percent, and this prosperity was experienced, with few exceptions, across the sector. The bottom five referred to above, for example, expanded spending by 75 percent. No single factor can explain this phenomenon. The academic leaders, in retrospect, seem to have been under-priced in terms of the intrinsic value they

offered and in terms of latent demand (surplus of highly qualified applicants). Institutions in the middle and lower reaches of this group succeeded in associating themselves more closely with the leaders, which allowed them to command the same level of tuition and, hopefully, to attract more applicants. The buoyant economy of the mid-1980s played a role as well by boosting both endowments and the incomes of upper-bracket families. Spending from endowment roughly kept pace with rising tuition revenues, but endowment growth exceeded that rate. Around 1980, when tuition prices started their rapid ascent, private universities were clearly stretched. The spending rate on endowment for this group peaked at 6.5 percent in 1983, but by the end of the decade it had dropped nearly two percentage points. Thus, tuition seems to have been maintained at roughly 70 percent of core expenditures by choice, as endowment spending was adjusted down to more prudent levels.

The rising economic tide of the 1980s lifted most boats. Even the under-performers among these 33 universities increased real spending by at least 25 percent (see Appendix B). This situation did not persist in the 1990s, however. Glaring discrepancies soon became apparent between the wealthy and less wealthy private universities. Real spending per student increased by 17 percent from 1990 to 1996. All but two of the wealthiest ten exceeded that figure; only three from the bottom ten did that well. The middle group, as might be expected, was mixed, but the gains of the best performers did not match those in the top group. In general, a striking picture of the rich getting richer. But after the strong performance of the less wealthy in the 1980s it is not obvious why that should have been the case.

Closer examination reveals that the high-tuition/high-aid policy itself was deeply implicate. Each institution employs its own algorithm for determining relationships among sticker price, student financial aid, and endowment spending. For example, assumptions and calculations might differ for undergraduates, doctoral students, or professional schools. However, a warning light ought to flash if institutional aid substantially exceeds endowment spending. When this occurs, leaving aside other university assets, an institution has less to spend on each student than its full sticker price. A student paying full tuition, in other words, experiences a negative subsidy, at least as far as direct costs are concerned.²⁴ In 1980, 8 of the 33 private universities were in this situation. In 1990 the number increased to 12, and in 1996 it reached 20.

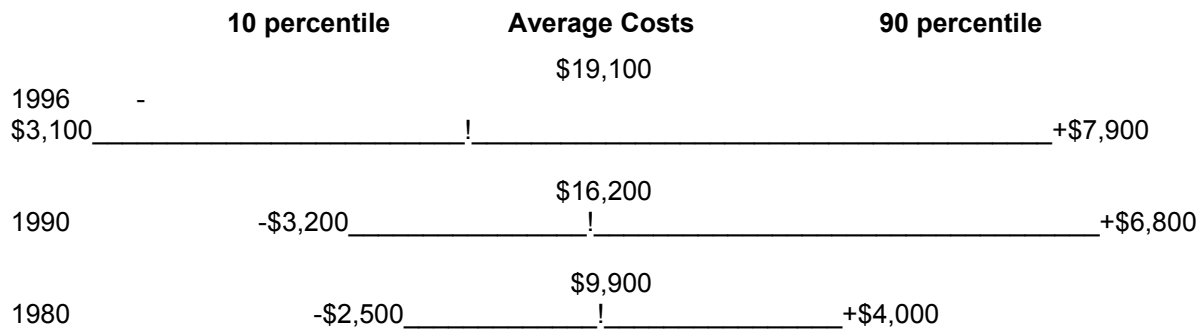
The high-tuition/high-aid policy is effective only within certain parameters.²⁵ It depends upon capturing significant amounts of 'other people's money,' either through expected family contribution or through state and federal student financial aid. Thus, it is sensitive to the ratio of aided students to full-payers and to the amount of need to be met, or put more simply, to parental income. The higher parental incomes, the more tuition revenue; the lower parental incomes, the more financial aid.

This policy is also sensitive to the level of government financial aid. However, all need-based aid programs have upper limits. Boosting these caps would allow universities to capture more federal dollars, either through higher tuition or less institutional aid. But given these limits, the final increment of student cost must be met through institutional aid. Perhaps for this reason the government has shown little inclination since 1992 to raise these caps, even though other forms of student aid have been increased.

Given these limits, the final increment of student expense tends to be met through institutional aid. Hence, for an institution to improve its yield from tuition, it must either increase the number of full-payers in the mix or raise expected parental contributions. Otherwise, each year's annual tuition hike tends to expand that final increment of institutional aid, as more students require aid in larger amounts. In that case, the amount of revenue realized from each additional tuition dollar will decline. In the 1990s, this is what happened to the weaker private universities, but not to the stronger ones.

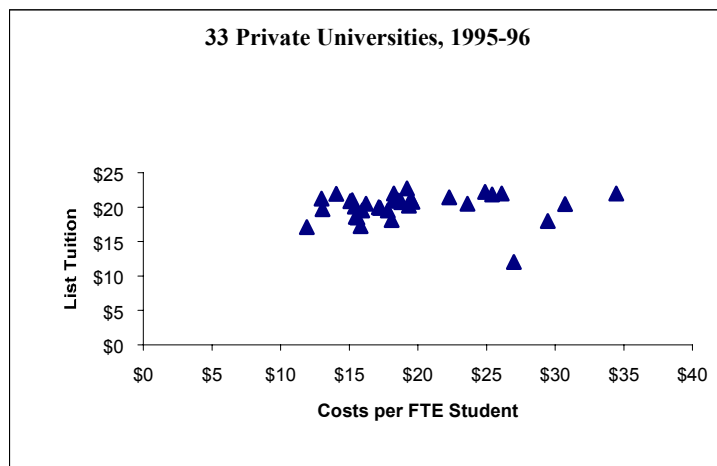
The fourteen universities with the lowest spending per student were all affected. Three received about 50 cents for each additional tuition dollar; three others received even less. These six institutions (plus one other with the next lowest marginal yield) had the lowest spending levels in this group. The remainder of these fourteen received less than 70 cents for each additional tuition dollar, a figure that was lower than their overall tuition discount rate. In other words, all of these institutions were headed in the wrong direction—toward higher tuition discounts—to the detriment of their overall income.

Figure 3. Cost Dispersion, 10th Percentile, Mean, and 90th Percentile Private Universities



The growing disparity of financial means is graphically depicted in Figure 3. If the highest and lowest 10 percent are excluded as outliers, the range of costs extended from \$16,000 to \$27,000 in 1996. In contrast, net tuition revenue per student varied between \$11,000 to \$17,000, compared with sticker prices between \$18,000 and \$22,000. The great difference in costs among these universities resulted from the different contributions from endowment. Universities with little endowment income essentially used the tuition income from wealthier students to subsidize those with financial need. Universities with large endowments can tolerate large tuition discounts (or reduced tuition revenue) and still support high costs.

Figure 4. Scatter Plot, List Tuition vs. Net Tuition per FTE Student (Thousands)



The high-tuition/high aid policy produces a peculiar price structure for private universities (Figure 4). The price structure is relatively flat despite great differences in expenditure levels. This pattern is not novel for American higher education, but it seems to have become exaggerated by the explosion of financial aid. In 1980, tuition levels at these schools (again, excluding the high and low 10 percent) ranged from \$4,500 to \$6,200, a variation of 27.5 percent. In 1996 tuition prices ranged from \$18,000 to \$22,000, a variation of 18 percent. Thus, pricing became more uniform even while differences in spending levels grew. Such an anomaly would seem to be difficult to sustain.

The prevalence of tuition discounting produces a second anomaly. Within any given university, students pay widely different prices for an education of the same value. The situation itself is not new—assistance for needy students is as old as the American college. Now, however, the majority of students pay different prices.

Moreover, as the strategic use of financial aid becomes increasingly prevalent, the legitimacy of these disparities becomes more difficult to defend, in effect creating a third anomaly. Strategic aid reflects

in principle neither academic merit nor financial need. Rather, it is predicated on the financial interests of the institution. This situation would seem to violate one of the bedrock rationales of the nonprofit sector—the crucial role of trust. Here too, the inherently contradictory nature of the situation weighs against its sustainability.²⁶

These three anomalies have ominous implications. Yet, they were unlikely to be challenged during the late 1990s, which was clearly another rising tide for universities. In many ways these years represented a new golden age. All private universities were afforded a golden opportunity to bolster their financial and academic strength. However, the basic pattern of the decade—the rich getting richer—persisted. Looking only at endowments, the 10 universities with endowments under \$500 million in 1995 grew by an average of 101 percent by 1999. The 13 universities that started with more than \$1 billion in endowment increased by 128 percent. Of course, translated into dollars these percentages represent enormous differences. The \$8 billion Harvard *added* to its endowment in these years roughly equals the *total* endowments of those ten universities that merely doubled their wealth. Massive and growing inequality seems to rule in the private sector in the twenty-first century.²⁷

Costs at Public Universities

Public and private universities relate to the marketplace in different ways. Each private university is unique, fashioned by its distinctive history, leadership, and constituencies. Each institution also stands alone in relation to the national marketplace. But as a consequence, all must contend with the same market forces and are substantially shaped by those forces in similar ways. The policy of high-tuition/high-aid, just seen, is one example; the fixation on undergraduate selectivity is another.²⁸

Public universities, on the other hand, exhibit many common features. As creatures of the state, receiving a significant portion of their core funding as legislative appropriations, they have an ineluctable obligation to the polity. In practical terms this means providing access to large numbers of resident young people; teaching practical fields of study, whether in a land-grant institution or not; and providing certain services to taxpayers and the economy. These obligations have not precluded academic excellence, at least for a large subset of state universities, but they have engendered a latent tension between these two objectives. However, when one looks beyond these common traits, the fact of being rooted in their particular states creates great variety among public universities. First, the undergraduate base is largely drawn from within the state and is affected by the division of labor among state institutions. While some state institutions have (or used to have) virtually open enrollments, others have traditionally been quite selective. Second, the degree of campus autonomy differs widely across states. Third, aspirations and possibilities for academic distinction have been markedly different and continue to fluctuate. And finally, the financial means to achieve their missions vary according to the economy, demography, and politics of each respective state. For the 64 public research universities examined here it is possible to identify broad themes in their evolution during the 1980s and 1990s, but there are important variations across the states in how those themes play out.

Throughout most of the twentieth century state universities looked to their respective legislatures for the bulk of their operating funds. For much of this time, the amounts they were allotted were comparatively modest. Nevertheless, when state revenues plummeted during hard times, state appropriations most often were cut as well. When conditions improved these cuts tended to be restored, and the growth curve of increasing appropriations generally resumed. This pattern occurred at the start of the 1970s and again at the beginning of the 1980s. In 1980, states were providing these public universities with 78 cents for every 22 cents paid by students (Table 4). This was less than they appropriated a decade before, but much more than the 67 cents on the dollar that the Carnegie Commission had recommended in the early 1970s.

The financial history of state universities from that juncture is shown in Table 4. The 1980s, despite beginning with raging inflation and a double-dip recession, was a reasonably prosperous decade for most. State appropriations grew by 32 percent in constant dollars. Tuition grew by a higher percentage, as already noted, but the original base was fairly low. States as a whole contributed more additional dollars than did students (\$3278 vs. \$2394), and the average tuition ratio (tuition in relation to tuition plus state support) approached 28 percent. But results were actually mixed. Five universities now received more revenues from students than from their states (the universities of Colorado, Delaware, Michigan, Pittsburgh, and Penn State). But others, most notably the campuses of the University of California, experienced little or no erosion.

Table 4. Tuition Revenues & State Appropriations, 64 State Univ. (millions, 1996\$)

	1980	1990	1996
Gross Tuition Rev.	2,817	5,211	7,647
State Appropriations	10,244	13,522	13,260
Tuition ratio	.216	.278	.366

During the 1990s, in contrast, the basic relationship between states and their universities shifted. State appropriations for these universities actually declined in real terms through 1996, so that all appreciable revenue growth came from student tuition. The largest disaster occurred at the University of California, where reduced state revenues required that the traditional policy of low fees and ample appropriations be jettisoned. After the state appropriation was cut by 15 percent and student charges were more than doubled, the university's tuition ratio rose to near the national average (Table 4). However, the movement to higher tuition was nearly pervasive. The only exceptions were several southern states (Florida, Georgia, New Mexico, North Carolina) that preserved tuition ratios close to the 1980 national average.²⁹

To some extent these steps were forced by economic conditions. The recovery from the recession of 1990 was long and shallow. Additional years passed before tax revenues grew sufficiently for states to expand their budgets. Still, the restoration phase of the budget cycle was unusually weak in the 1990s. The explanation most commonly given was that revenue growth in other categories of state expenditures—particularly Medicaid and corrections—were 'crowding out' the share of state budgets previously claimed by higher education.³⁰ But state spending reflects political choices, and in these years the popularity of universities was at low ebb.

From the mid-1980s a curious animus against universities and the academic world grew and festered. Allan Bloom's abstruse polemic, *The Closing of the American Mind*, became an improbable bestseller in 1986, most likely because readers sympathized more with the gist than the particulars of his idiosyncratic critique. But if the distrust felt toward universities was vague and ill-formed, journalists were quick to provide a specific indictment. *Tenured Radicals* by Roger Kimball debunked a small segment of academic life, making the bizarre world of culture studies appear representative. In *Illiberal Education* Dinesh D'Souza similarly portrayed the workings of "political correctness" at a few, leading institutions. Charles Sykes's *Profscam*—a work as crude as its title—pilloried the professoriat in general. Sykes's book, like the others, did not have to be read to grasp the message. These works and others like them insinuated that university faculty were out of touch with the American people, betrayed avowed principles of free speech and free inquiry, and served their own self-interest rather than the needs of students. To make matters worse, in 1991 Stanford University was accused of gouging on claims for indirect cost reimbursements on federal research grants.³¹ Apparently, the news media were quick to allege, universities themselves were dishonest.

Whether exaggerations or fabrications, such charges helped to poison the atmosphere for much of the 1990s. In their general formulations they were directed at both public and private institutions, but they had little resonance among the latter. Carefully selected undergraduates were the lifeblood of private universities. High prices may have been a source of some complaint, but they were also the wellspring of solicitude toward these valued and valuable students. State universities, with their obligations to the polity, provided a far more vulnerable target for those politicians and journalists who wished to exploit this issue. In several states conservative governors deliberately singled out higher education for vindictive assaults. In other cases, dubious policy initiatives can be related directly to the prevalence of negative clichés.³² Quite likely, the sinking popularity of universities in state legislatures was a factor in constraining state appropriations or delaying their restoration. It also seems likely that the prevailing mood of suspicion conditioned many of the policies that were adopted.

In the 1990s states intervened in the internal affairs of universities to a greater extent than at any time since the postwar anti-communist hysteria. Much of this meddling was motivated by outright distrust. Hence, there was widespread support for the notion that state colleges and universities must be held accountable—for the amount that students learned, for the amount that faculty taught, and for the amount of money they spent. Never mind that university leaders were already accountable, directly or indirectly, to elected officials: in the public mood they were assumed to be incompetent at their central tasks. As of 1996, 15 states had frozen or indexed tuition; 18 had launched inquiries into faculty workloads, and 21 had tied institutional funding in some degree to performance measures.³³ This last fad was carried

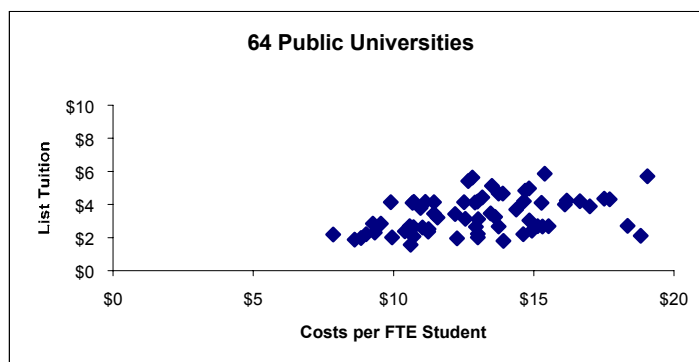
furthest in South Carolina, where a facilitator convinced a focus group of citizens that the process of funding state universities needed to be “reinvented.” The system they invented, and which was enacted into law, tied all state appropriations to 37 performance indicators, not all of which could be measured.³⁴ These and other state interventions into university management invoke fundamental organizational issues that are open to debate. More consequential here, such steps constricted the ability of universities to deal with the difficulties imposed by shrinking state appropriations.

The suspicion of universities also seems to have influenced states to direct funds toward students instead of institutions. This phenomenon represents the public version of the high-tuition/high-aid policy. State officials are often of two minds toward this approach. Low tuition has a strong appeal for voters who patronize state institutions of higher education. However, if conditions dictate otherwise, the equity argument can readily be invoked to rationalize higher tuition coupled with increasing state provision of student financial aid. While total state appropriations for higher education shrank slightly in real terms from 1990 to 1996, support for grant programs grew by 55 percent. This development is evidence of a growing inclination to favor funds for students over funds for universities. During this period state programs awarded an additional \$1 billion (1996\$) in student aid, while student tuition payments at state schools rose by \$7.25 billion. In most states these awards were available to students in both public and private institutions. Hence, private sector proponents strenuously advocated such programs. The programs are also fairly concentrated, with New York, California, Illinois, New Jersey and Pennsylvania (with 32 percent of all students) appropriating three-fifths of all state student financial aid.

During the late 1990s the political popularity of state grants for students persisted, but now programs of merit aid assumed greater prominence.³⁵ In 1993, Georgia embarked on a new departure by creating “Hope” scholarships for all state students completing high school with a ‘B’ average. In 1997, Florida instituted a similar large program that demanded higher levels of achievement. Michigan followed in 1999.³⁶ In 2000, California committed to a massive expansion of its financial aid programs employing both merit and need criteria.³⁷ More limited programs were initiated in other states, usually to encourage very high achievers to remain in state. It is noteworthy that in the four states identified student aid programs were not instituted at the expense of institutional appropriations. Georgia and Florida dedicated new lottery revenues for this purpose; Michigan used its windfall from tobacco litigation; and California, having largely restored the cuts of the early 1990s, was committing its budgetary surplus. Student financial aid has become a popular program in state houses across the country. The rationale, in part, is to mitigate the impact of high tuition imposed during previous years, but, ironically, the market forces created by this additional aid, by expanding student purchasing power, may encourage higher public tuition in the future.

The pricing structure of public universities is quite different from that in the private sector. Tuition prices for resident undergraduates vary widely according to state traditions and policies. Most of these universities maintained tuition between \$2000 and \$5000 in 1996. This variation was not too different from 1980, when the range extended from \$500 to \$1500. Moreover, there is no relationship between the sticker price and institutional costs (Figure 5).

Figure 5. Scatter Plot of List Tuition vs. costs per FTE student (Thousands)



In some states appropriations contribute less than student charges, but in others they were as much as four times greater. Despite the run-up in tuition prices, basic state appropriations are still crucial to the finance of these universities. Unlike the private sector, the range of spending levels among state universities narrowed from 1980 to 1996. Universities at the lowest levels made modest progress, while universities with high spending levels barely advanced, in part because of the difficulties at the University of California (Figure 6). Thus, the relative loss of competitiveness by public universities was greatest for those institutions having higher costs.

**Figure 6. Cost Dispersion, 10th Percentile, Mean, and 90th Percentile
Public Universities**

	10 percentile	Average Costs	90 percentile
1996	-\$3,100	\$13,000	+\$3,600
1990	-\$3,500	\$12,300	+\$4,200
1980	-\$2,700	\$9,200	+\$6,800

Another remarkable feature of the pricing of public university education is that net tuition per student *exceeds* the sticker price for resident undergraduate tuition. At private universities, it was seen, net tuition revenues were 24 percent *less* than gross tuition. At public universities, average net tuition per student was 24 percent *more* than listed resident tuition prices (1996). Public universities have accomplished this feat in several ways. First, they have escalated the tuition charged to out-of-state students. Non-resident tuition at state universities now averages about three times that for residents. Thus, when 35 percent of students are non-resident—about the maximum level that any state will tolerate—the *Auslanders* contribute 40 percent more tuition revenue than do citizens. This policy of soaking non-resident students—or charging them “full costs” as some states claim—became widespread in the 1980s.³⁸ In the 1990s, however, it became a conscious strategy for revenue maximization. Many state universities now quietly direct their recruitment efforts beyond their borders, including the strategic employment of scarce merit aid. Thus, much like the private universities, state universities have allowed their behavior to be shaped by the lucrative income from high tuition.

The practice of charging different tuition rates is also widespread in public universities. Some institutions charge more for upper-classmen, and more still for graduate students. Tuition for professional schools has generally been raised well above undergraduate levels. In an extreme case, the trustees of the University of Virginia in 1995 withdrew all state support from the schools of law and business, making them self-supporting, largely through tuition.³⁹ Finally, state universities have been squeezing extra revenues from their students by imposing a variety of user fees. All together, public universities have found ways to maximize tuition revenues while keeping the sticker price for resident undergraduates, their most visible and politically important clientele, as low as possible. Still, many public universities have followed the same path of private universities toward a high-tuition/high-aid policy. Fundamental differences nevertheless exist between the two sectors.

Private university education, on average, is over-priced, so that it can only be sold at a discount. Public university education is under-priced, so that a substantial minority of its clientele is willing to purchase it at a premium. The over-pricing of private universities, it has been argued, has created a number of anomalies that make the current price structure precarious. Public universities, at least most of them, possess the pricing power in theory to charge considerably more than they do. In practice, they have been discouraged from doing so largely by political constraints.

Many state universities do not have the authority to set their own tuition. Others face legislated restrictions, and another group probably fears punitive reactions if tuition were raised too rapidly. On the other hand, some state universities now charge all that their particular markets will bear, so that further increases would harm enrollments. States have good reason to impose constraints upon tuition. Public universities have an obligation to provide access to quality higher education to an appropriate portion of

the state's undergraduate students rather than recruiting, as do most graduate programs, the best students available in the country or the world. State universities clearly do not have the resources to sustain a high-tuition policy by providing financial aid to the bulk of their numerous students. Furthermore, developments of the late 1990s have shown that fears of unrelenting privatization—of a withdrawal of state support from public universities—were exaggerated. With state coffers full or even overflowing, state support for universities has generally recovered something like its traditional momentum. But larger appropriations have often come with strings attached, and student charges seem to be set at a permanently higher level. (California has been an exception, actually lowering real tuition levels.) Once again it appears that states, instead of students, are funding the greater part of additional costs. Nevertheless, as the preceding analysis has shown, the dynamics of university finance have changed markedly in the 1990s, with consequences that have yet to be fully appreciated.

University Costs, Quality, and Access: Dilemmas of the New Era

The magnitudes of university costs have a direct bearing on how well universities can perform their tasks, that is, on the quality of their services. Who pays for these costs influences who attends these institutions. Thus, issues of quality and access are deeply interwoven with the topic of costs. Both quality and access, in fact, are vast topics with commensurate literatures. This discussion is limited to exploring the implications of the financial trends already documented.

Economists of higher education frequently posit as axiomatic that quality increases with cost. How this takes place is something of a black box. Nor is it clear if this relationship is linear or otherwise. It has been shown above that universities at the 90th percentile of costs expend nearly twice as much per student as those at the 10th percentile in both sectors (Figures 3 & 6). Are the differences in quality proportional to spending? Such a conclusion seems doubtful. Peering into the black box, the general association between spending and quality in practice can be hypothesized as a number of inter-related factors, each with somewhat different implications for educational quality. In discussing these factors, the most telling distinction can be drawn between spending levels at private and public universities, but these factors might pertain to individual institutions in either sector.

1. *Mix of Programs.* Each university has a unique mix of academic and professional programs with widely varying costs. High-cost private universities tend to have a higher proportion of costly professional schools. Some professional schools, like medicine, are tremendously expensive; others, like law and business, spend freely because they have abundant incomes. Doctoral programs too are inherently expensive, so that universities with more doctoral students will have a higher cost basis. Certain subjects are more costly to offer. This is true for science and engineering in general, but also for music. Finally, distinguished universities tend to support small academic programs in esoteric fields, in spite of the expense.
2. *Lower Student/faculty Ratios.* This may be due in part to the mix of programs and in part to more generous staffing for basic arts and sciences courses. Accurate counts of faculty may be difficult to obtain because of large medical schools and part-time faculty, but self-reported data indicates the number of students per faculty member at public universities is about 50 percent higher than at privates. However, the faculty numbers are only part of the picture. Expenditures for non-academic staff seem to be roughly parallel with faculty costs in both sectors, meaning that private universities have lower student to staff ratios as well.⁴⁰
3. *Higher Salaries.* Faculty salaries at private universities were 24 percent higher than at publics in 1996. This discrepancy again reflects the mix of programs, but faculty in comparable fields were still better compensated in private universities. The implications for quality are obvious here: private universities have a decided advantage competing for the academics they wish to hire. It is also possible to put a price on this advantage: combining a 24 percent salary premium and a 50 percent difference in student-faculty ratios means that private universities pay 86 percent more for faculty wages. A similar calculation could be made for administrators and professional staff.
4. *Facilities and Space.* In the intense competition for top students, physical facilities play a key role. Universities have invested whatever their financial capacity has permitted to make their splendid campuses even more splendid. Much of this investment is directed toward amenities—new student centers, recreational facilities, and more commodious dorms. Investments have also been directed toward educational facilities, including libraries and 'smart' classrooms.
5. *Talented Student Peers.* Private universities tout the selectivity of their incoming classes, and this factor figures heavily in the rankings of *U.S. News and World Report*. The price of selectivity,

as has been seen, is student financial aid. If high-cost institutions wish to enroll high-ability students they must subsidize a good portion of them. Hence, even if a full-paying student subsidizes more needy peers, there is a commensurate benefit derived, in theory, from the quality of fellow students.⁴¹

6. *Research.* Supporting a faculty active in original research and scholarship is directly associated with other cost factors such as doctoral programs and high salaries. It also implies more modest teaching obligations and provision for faculty research, both of which should bolster the quality of instruction. These factors relate to the scholarly reputation of university faculty, as established through peer ratings, making the association between high costs and reputation fairly close.⁴² The volume of research expenditures is more loosely related to costs. Funds for this purpose come chiefly from external sources, and at many universities the majority of research expenditures occur outside of departments in separate centers and institutes. Research outside of academic departments (or in medical schools) has its own cost basis, but highly rated departments are costly for universities to establish and sustain.

Quality is obviously a complex, inter-related phenomenon, but these six factors link it firmly with costs. Thus, the developments of the 1990s should have, on balance, adversely affected quality at public universities and benefited privates.

Faculty may be the input most sensitive to such changes. Overall, the number of regular faculty at public universities barely changed during the 1990s, despite creeping increases in enrollments and graduates. Several prominent institutions had to reduce their faculty by more than 100 during the decade. Despite managerial rhetoric, it is difficult to reconcile such developments with claims for quality enhancement. Public universities have felt their qualitative weakness most acutely when competing with the private sector. In particular, the growing disparity in faculty salaries has caused public universities to lose valued personnel to private institutions.⁴³

On the other hand, state universities have attempted to compensate for disappointing appropriations by looking to private sources of support. They have turned to industry for support not just for research, but also infrastructure. Most conspicuously, almost all have undertaken major fund-raising campaigns. As targets, they aim at some of the qualitative factors mentioned above: student financial aid, endowed faculty chairs, and support to improve facilities.

In the private sector, both the lower- and higher-cost universities doubled their spending base from 1980 to 1996—a remarkable achievement that brought undoubted qualitative improvements. The drawback here would be the increasing disparities of wealth. For the less wealthy institutions, at least, a dual challenge has loomed: keeping pace with the qualitative advances of their more affluent peer institutions, while experiencing diminishing tuition revenues due to the multiplier effect of institutional aid. Through mid-decade, many of these universities faced situations ranging from belt-tightening to financial crisis.⁴⁴

The late 1990s brought the most propitious possible economic conditions for these universities. The rising stock market not only increased endowment wealth, but also made conditions ideal for endowment-building campaigns. The rising incomes of upper-bracket families should also have lightened requirements for financial aid. Private universities thus had an opportunity to either diminish tuition discounts or (for the financially stronger) finance them with endowment income. The prosperity of these years may have been sufficient to conceal the inherent anomalies of the high-tuition/high-aid system and possibly to restore some institutions to the parameters within which that system is effective.

The wealthiest private universities may have entered uncharted realms of affluence with the 1999 boosts to their endowments. For most of the 1990s, however, they have spent their growing revenues conservatively. A large portion of their additional spending was used for facilities, especially for students. By refurbishing their hallowed buildings, and erecting some new ones, they have embellished the campus setting for many years to come. Perhaps more notable are the areas in which they have invested comparatively little. With the exception of Princeton, none has opted to raise enrollments.⁴⁵ The number of faculty has increased only modestly, although salaries have risen much more. Nevertheless, restrained hiring, chiefly of established ‘stars,’ may have muffled their potential impact on the academic labor market. Furthermore, until perhaps the very end of the decade, these universities did little to expand their research portfolios. Success in the sweepstakes of undergraduate selectivity brought their astonishing prosperity, and this objective clearly received first priority in spending decisions. They maintained a need-blind, full-need approach to admissions and aid, meaning that they spend whatever is necessary to enroll each class.⁴⁶ For this handful of universities the inputs to quality in all spheres of activity approach or have reached optimal levels. But who benefits from these abundant resources for learning?

At issue here is access to high-cost and high-quality higher education. The preceding discussion established that high costs ought to be associated with real instructional benefits. Moreover, a body of evidence suggests that such benefits tend to yield payoffs in occupational status and earnings. This last point is controversial, however.

Several large studies have found evidence that attendance at highly selective (or high-cost) colleges and universities confer significant advantage in subsequent earnings. William G. Bowen and Derek Bok found a substantial wage premium associated with attending an academically selective institution and perhaps a higher premium for minority students.⁴⁷ Carolyn M. Hoxby and Bridget Terry Long examined the growing inequality in earnings among the college educated and found the largest portion of the difference (5/12ths) was explained by the selectivity and educational expenditures of the institutions attended.⁴⁸ Dominic J. Brewer et al. found wage premiums associated with quality rising in the 1980s, with the highest premiums going to graduates of elite private universities.⁴⁹ This finding was consistent with an earlier study by Paul William Kingston and John C. Smart that reported, "graduating from a school at the very top of the prestige hierarchy provided a decidedly large advantage." Also consistent with that study is the finding of a recent federal study that women apparently benefit more than men from attending selective schools.⁵⁰ These results carry all the more weight having been derived from three separate databases. Studies that have failed to find a link between higher costs/selectivity and higher earnings have attempted to control for ability and socio-economic status.⁵¹ Untangling the effects of these different factors can be problematic, however. The advantages conferred by high-cost degrees are in all likelihood an integral part of a process of cumulative advantage, whereby occupational gains result from the continual interaction of privileged family background and elite schooling.⁵² If one accepts that higher costs in university education yield higher quality, and that higher quality produces subsequent advantages in the labor market, then the financial trends documented in this study contribute at the margins to greater social stratification.

The chief reason for this development is that students and their parents apparently believe and have acted upon these same premises. Private universities have traditionally had a somewhat exaggerated reputation as havens for the wealthy and the well born. What has changed in the current era is that increasing numbers of upper-middle class students have clamored to enter these institutions as well. The process has been, at once, self-reinforcing and vital to the financial well being of these institutions. As elite colleges expanded their market reach throughout the entire country, potential students were given greater choice. Given the expanded market, institutional investments in educational quality (i.e. higher costs) translated into greater demand. Increased demand, in turn, directly benefited these institutions in terms of greater selectivity, which enhances prestige, and the capacity to enroll an optimal mix of full-paying and aided students.⁵³ This process at once feeds and draws upon the industry of college rankings, guidebooks, and admissions counselors that has grown up in this era. It also has driven the system of higher tuition and higher financial aid.

High-tuition/high-aid at private universities is inherently dependent on high parental incomes. Three principal sources of income support the basic educational enterprise: parental resources, external student aid (including loans), and endowment income. As has been seen, except for a handful of universities with soaring endowments, parental resources must comprise the majority of that income. Relatively few families can afford or finance today's price of a private university education--roughly \$30-35,000 per year, including living expenses. Most of these families, in fact, send their children to private institutions.

The proportion of the wealthiest students that attended highly selective private universities increased from 9.6 percent in 1981 to 12.6 percent in 1998.⁵⁴ The proportion of students from low-income families attending these schools also increased, no doubt a reflection of increasingly generous financial aid packages and a genuine commitment to diversity. However, there is no mistaking the chief beneficiaries. These are the same schools, by and large, that have increased their costs to the greatest degree, and by implication their educational quality. Hence, these same students should obtain commensurate benefits in future occupational attainments.

Economists have argued for a generation that a policy of high tuition and high aid would contribute toward greater equity in educational and social outcomes. They chiefly were concerned with public subsidies being squandered on families who could well afford to pay a greater share of educational costs. However, the approach they advocated flourished first in the private sector instead. There the unforeseen results of twenty years' evolution ought to provoke a reconsideration. The system may be a boon to the relatively small number of low-and middle-income students who qualify academically for admission. But the economics of operating a high-cost educational institution largely on the basis of tuition cannot help but provide the greatest benefits to those who can afford to pay very high tuition

prices.⁵⁵ This situation would not change appreciably if other sources of income were increased. Larger endowments, yielding greater income, might subsidize institutional financial aid even further, but it would chiefly increase the subsidies of the wealthy, who would still capitalize on their cumulative advantages to enroll in disproportionate numbers.⁵⁶ Were government financial aid to be increased, these additional benefits would largely accrue to relatively well-off middle-class students. Thus, the system of high-tuition/high aid as it currently operates in the private sector, far from promoting equity, contributes toward greater social stratification.⁵⁷

At public universities higher rates of tuition and greater amounts of aid produce rather different dynamics. The tuition ratio has increased steadily and now exceeds what the Carnegie Commission thought equitable a generation ago. This has produced a total cost of attendance, including living expenses, of from \$10,000 to \$15,000 per year. At the upper end of this range, the expense would be difficult for a low-income student with financial aid to afford. Thus public universities, with little financial aid of their own to offer, are on the verge of pricing lower-income students out of the market. At the same time, the overall spending of public universities showed little progress from 1990 to 1996 (Table 1). Compared with private universities, they seem to have experienced a relative decline in quality, or qualitative competitiveness.

Despite this last trend, public universities seem to have become increasingly attractive to higher income students. Overall, the proportion of the wealthiest students attending selective public universities has increased more than for private universities—from 5.1 percent to 8.9 percent of that group. These institutions have, on average, increased academic selectivity. In addition, the increasing employment of merit aid has served, at the margin, to elevate their social profile.⁵⁸ Despite the marginal increase of higher-income students, public universities remain accessible to the vast majority of middle-class students. Moreover, their rising popularity has allowed them to improve the academic qualifications of their entering classes. With a belated restoration of the value of state appropriations, as well as their private fund-raising, public universities at the end of the 1990s were undoubtedly enhancing their competitiveness on qualitative grounds as well.

The decades of the 1980s and 1990s witnessed a substantial transformation in the financing of the nation's major universities. The overarching theme was privatization, especially the transfer of the burden of support to students and their parents. This was facilitated, ironically, by a burgeoning system of student financial aid, chiefly in the form of loans. In retrospect, the results of these changes should not be surprising. They favored the development of private universities over public ones, and they served the aspirations of advantaged students over disadvantaged ones. At the dawn of a new decade and century, there are signs that the first of these conditions might be tempered, but not the second. At least some of the public universities have bolstered their qualitative competitiveness with the assistance of both public and private support. The wealthiest of the private universities—the \$3 billion club—would appear to belong in a class to themselves, but it is a rather small class.⁵⁹ The public universities that are currently enhancing their financial strength may well become the next most influential grouping. There is no sign, however, that the educational advantages of such institutions, public and private, will not continue to be reaped disproportionately by the more privileged sectors of American society. Privatization has harnessed the interests of these institutions to those of their wealthier clientele, and it would be vain to hope at this juncture that either politics or markets will loosen that link.

Appendix A: Public Universities

Net Revenue per FTE Student, 1996, 1990, 1980, Thousands of 1996\$

	1996	1990	1980
University of Michigan at Ann Arbor	19.05	15.72	11.78
University of North Carolina at Chapel Hill	18.82	16.57	11.46
University of Alabama at Birmingham	18.35	16.5	16.62
University of Minnesota - Twin Cities	17.71	15.82	9.06
University of California-Berkeley	17.52	17.81	13.24
SUNY at Stony Brook	17	18.02	16.26
SUNY at Buffalo	16.64	13.46	11.33
University of California-Davis	16.18	18.1	14.9
University of California-Los Angeles	16.11	17.82	14.72
University of Georgia	15.53	13.76	10.96
University of Pittsburgh	15.39	13.32	10.46
University of Kentucky	15.31	14.12	11.38
University of California-Riverside	15.27	18.05	20.14
Georgia Institute of Technology	15.14	12.5	7.74
University of Hawaii at Manoa	14.93	16.01	10.01
University of Wisconsin-Madison	14.84	13.47	10.22
University of Connecticut	14.83	10.99	7.93
University of California-San Diego	14.69	16.34	15.99
University of Illinois at Chicago	14.65	14.89	13.12
North Carolina State University at Raleigh	14.63	14.44	9.93
Wayne State University	14.38	12.33	9.69
University of Florida	13.92	16.51	11.03
University of Virginia	13.89	13.8	11.44
Iowa State University	13.75	11.84	8.58
Michigan State University	13.75	11.54	8.61
University of Washington - Seattle	13.62	13.29	9.13
Ohio State University	13.47	11.9	8.06
University of Delaware	13.16	11.79	7.91
Clemson University	13.01	13.55	11.93
University of Arizona	13.01	12.04	9.34
University of Tennessee at Knoxville	13.01	12.37	5.15
University of Maryland at College Park	13	12.74	6.62
University of Iowa	12.94	11.34	11.66
University of Missouri, Columbia	12.91	10.5	9.84
Pennsylvania State University	12.81	11.27	8.36
University of Massachusetts at Amherst	12.66	9.9	7.09
Washington State University	12.57	11.66	9.46
University of California-Santa Cruz	12.51	12.99	12.17
Texas A&M University Main Campus	12.26	12.31	8.77
University of South Carolina at Columbia	12.2	11.46	7.53
Purdue University, Main Campus	11.57	10.68	7.79
Oregon State University	11.45	10.59	7.43
Virginia Polytechnic Institute	11.45	13.12	9.04
University of Utah	11.25	10.16	7.73
Auburn University	11.23	10.26	7.93
University of Cincinnati	11.14	10.02	6.99
University of Texas at Austin	11.03	7.79	7.91
Indiana University at Bloomington	10.96	9.38	6.91
University of Illinois at Urbana-Champaign	10.72	11.4	10.32
University of Nebraska at Lincoln	10.72	9.42	7.23
University of New Mexico	10.71	8.99	5.89
University of California-Santa Barbara	10.68	11.98	8.87
University of South Florida	10.61	11.86	7.34
Louisiana State University	10.57	10.3	8.22
Kansas State University	10.4	8.83	6.94
Arizona State University	9.95	9.65	5.76
SUNY at Albany	9.9	9.74	9.27
Colorado State University	9.55	8.19	7.07
University of Kansas	9.34	8.62	6.45
University of Colorado at Boulder	9.27	8.02	5.53
New Mexico State University	9.03	7.17	6.31
Utah State University	8.84	8.56	7.91
Florida State University	8.61	9.45	6.99
University of Oklahoma, Norman Campus	7.85	7.39	4.98
Totals: 64 institutions	832.25	784.41	606.43

ENDNOTES

¹ National Commission on the Cost of Higher Education, *Straight Talk about College Costs and Prices* (Phoenix, Ariz.: Oryx Press, 1998). C.f. Jeffrey E. Olson, "The Cost-Effectiveness of American Higher Education: The United States Can Afford Its Colleges and Universities" in *Higher Education: Handbook of Theory and Research* 12 (1997): 195-242.

² National Commission on the Financing of Postsecondary Education, *Financing Postsecondary Education in the United States* (Washington, D.C.: GPO, 1973). This study was commissioned as part of the 1972 Amendments to the Higher Education Act, which systematized federal programs for student financial aid. It consequently rationalized rather than shaped those programs.

³ Recent studies analyzing institutional behavior include, Charles T. Clotfelter, *Buying the Best: Cost Escalation in Elite Higher Education* (Princeton: Princeton University Press, 1996); Michael S. McPherson and Morton Owen Schapiro, *The Student Aid Game: Meeting Need and Rewarding Talent in American Higher Education* (Princeton: Princeton University Press, 1998); Ronald G. Ehrenberg, *Tuition Rising: Why College Costs So Much* (Cambridge: Harvard University Press, 2000).

⁴ This study does not address cost functions in higher education: Paul T. Brinckman, "Higher Education Cost Functions" in *The Economics of American Universities*, Stephen A. Hoenack and Eileen L. Collins, eds. (Albany: State University of New York Press, 1990), 107-28; Darrell R. Lewis and Halil Dundar, "Costs and Productivity in Higher Education: Theory, Evidence, and Policy Implications" in *Higher Education: Handbook of Theory and Research* 14, John C. Smart, ed. (New York: Agathon Press, 1999), 39-102.

⁵ Medical universities that do not teach undergraduates have been omitted. This group was selected to represent research universities during the 1980s and 1990s. Inclusion or exclusion implies no judgment on any individual institution.

⁶ Howard R. Bowen, *The Costs of Higher Education* (San Francisco: Jossey-Bass, 1980), 20.

⁷ In October, 1999, the National Association of College and University Business Officers initiated a project to define the costs of undergraduate education at selected participating universities. This project encountered severe difficulties defining instructional expenditures, and finally issued some aggregate estimates to its 2001 annual meeting.

⁸ Gordon Winston has argued that depreciation and opportunity costs, based on the value of land, buildings, and equipment, ought to be included in educational costs: "Capital and Capital Service Costs in 2700 U.S. Colleges and Universities," Williams Project on the Economics of Higher Education, DP-33 (Dec. 1995). This approach was followed in *Straight Talk* (p. 32). These costs would seem to add about 15 percent to overall costs, perhaps more for wealthier institutions, but also introduce great uncertainty (see below, note 24).

⁹ All data on 33 private and 64 public universities in this study comes from a database on these institutions compiled for my larger study, "Universities in the Marketplace."

¹⁰ Source: NCES, *Digest*, 1999; Jacqueline E. King, "Student Borrowing: Is There a Crisis?" in *Student Loan Debt: Problems and Prospects* (Washington, D.C.: Institute for Higher Education Policy, 1998), 1-14. Cost of attendance estimated for full-time students.

¹¹ For an overview of the transformation of federal student aid policy from grants to loans: James C. Hearn, "The Paradox of Growth in Federal Aid for College Students, 1965-1990," *Higher Education: Handbook of Theory and Research*, 9 (1994): 94-153.

¹² This analysis is in substantial agreement with Arthur M. Hauptman and Cathy Krop, "Federal Student Aid and the Growth of College Costs and Tuitions: Examining the Relationship" in *Straight Talk*, 70-83.

¹³ *Ibid.*, 73. *Straight Talk* summarizes the case for denial and is unable to endorse either position: 300-302.

¹⁴ McPherson and Schapiro, *Student Aid Game*, 53-103.

¹⁵ King, "Student Borrowing," 6, 13; Thomas J. Kane, *The Price of Admission: Rethinking How Americans Pay for College* (Washington, D.C.: Brookings Institution Press, 1999).

¹⁶ Evidence of price sensitivity has been found for lower income students especially at non-elite institutions. However, McPherson and Schapiro found "no evidence that increases in net cost inhibited enrollment for more affluent students": *Student Aid Game*, 39-40.

¹⁷ The seminal study: W. Lee Hansen and Burton A. Weisbrod, *Benefits, Costs, and Finance of Public Higher Education* (Chicago: Markham, 1969). W. Lee Hansen and Burton A. Weisbrod, "A New Approach to Higher Education Finance" in M. D. Orwig, ed. *Financing Higher Education: Alternatives for the Federal Government* (Iowa City: American College Testing Program, 1971), 117-42; Carnegie Commission on Higher Education, *Priorities for Action: Final Report of the Carnegie Commission for Higher Education* (New York: McGraw-Hill, 1973), 66. One problem that the Carnegie Commission addressed was the perception, ironic in retrospect, that private colleges and universities were pricing themselves out of the market. The two-pronged solution was higher tuition in public institutions coupled with student aid for both sectors.

¹⁸ In 1996 the tuition ratios for the 64 public universities in this study ranged from ???

¹⁹ Tuition data from Clotfelter, *Buying the Best*, 71, 81.

²⁰ Carolyn M. Hoxby, "How the Changing Market Structure of U.S. Higher Education Explains College Tuition," National Bureau of Economic Research, Working Paper 6326 (December 1997).

²¹ For the 33 private universities monitored in this study, net tuition remained remarkably constant: 69% of costs in 1980, 70% in 1990, and 71% in 1996. Institutional scholarships rose as a percentage of gross tuition revenues from 18% in 1980, to 20% in 1990, and 24% in 1996.

²² Indeed, without loans institutional aid alone could not sustain actual tuition levels. For example, for guaranteed loans to be replaced by institutional aid in 1996, the tuition discount rate for the private universities in this sample would need to rise from 24% to an estimated 42%.

²³ Whether institutional student aid is a real cost or a price discount has been a vexing question. Conceptually a distinction can be made: at institutions having a surplus of qualified applicants, it is an investment in the quality of the student body; without such a surplus, it is a discount to optimize revenue: William G. Bowen and David W. Breneman, "Student Aid: Price Discount or Educational Investment?" *Brookings Review* 11 (1993): 28-31. In reality, most institutions now combine both motives in a strategic manner: McPherson & Schapiro, *Student Aid Game*.

²⁴ Universities receive additional income from gifts and ICR, but these funds are largely earmarked for particular purposes. Students receive a significant subsidy in the use-value of the campus, buildings, and equipment, but this value is difficult to quantify because it depends upon assumptions on interest rates for opportunity costs and uncertain assessments of real estate values: see note #8, above.

²⁵ See the model in David W. Breneman, *Liberal Arts Colleges: Thriving, Surviving, or Endangered?* (Washington, D.C.: Brookings Institution, 1994); and the critique of tuition discounting in MadlynneVeil Griffiths, "The Financial Effects of Tuition Discounting: an Analysis of Private Colleges in Pennsylvania," D.Ed. dissertation, Pennsylvania State University, 1996.

²⁶ The practice of tuition discounting has been carried much further in many private colleges. A few, most notably Muskingum College, have repudiated this practice and drastically reduced tuition to more realistic levels: Geiger, "Signposts on the Path to Privatization"; Ehrenberg, *Tuition Rising*, 83-4.

²⁷ Gordon C. Winston describes the degree of inequality for all U.S. higher education and foresees it increasing due to the disparities in "savings" or endowment formation: "Economic Stratification and Hierarchy among U.S. Colleges and Universities," Williams Project on the Economics of Higher Education, Discussion Paper No. 58 (Nov. 2000).

²⁸ This topic is addressed in another section of the larger study of which this paper is a part.

²⁹ Patrick M. Callen and Joni E. Finney, eds. *Public and Private Financing of Higher Education* (Phoenix, Ariz.: Oryx Press, 1997), 81-136.

³⁰ Ibid., 6-10.

³¹ Donald Kennedy, *Academic Duty* (Cambridge: Harvard University Press, 1997), 161-75; for the impact on university treatment in Congress, see Robert M. Rosenzweig, *The Political University* (Baltimore: Johns Hopkins University Press, 1998), 43-5.

³² E.g. in October, 1995, the Board of the University of Minnesota felt that a discussion of faculty work required a consideration of the institution of tenure. In the ensuing uproar, any questioning of tenure was shelved under a threat of faculty unionization. See also below, the restructuring of higher education funding in South Carolina (note 33).

³³ *Chronicle of Higher Education Almanac* (Aug. 29, 1997), 12.

³⁴ William Trombley, "Performance-Based Budgeting: South Carolina's New Plan Mired in Detail and Confusion," *National Crosstalk* VI, 1 (Winter 1998): 1, 14-16.

³⁵ See Donald E. Heller, "The Policy Shift in State Financial Aid Programs" in *Higher Education: Handbook of Theory and Research*, John C. Smart, ed. (forthcoming, 2000).

³⁶ Donald E. Heller and Douglas T. Schapiro, "High-Stakes Testing and State Financial Aid," Paper presented at ASHE Conference (Nov. 2000).

³⁷ William Trombley, "California's Improved Financial Aid Program," *National Crosstalk* 8, 4 (Fall 2000), 1, 8.

³⁸ The policy of charging non-resident students higher tuition became widespread during the years of the original G.I. Bill, when Uncle Sam covered the entire tuition bill and mobile ex-servicemen ranged widely across the nation's colleges. The appealing notion of "full cost" is subject to many possible definitions (see above).

³⁹ David W. Breneman, "The 'Privatization' of Public Universities: A Mistake or a Model for the Future?" *Chronicle of Higher Education* (July 3, 1997).

⁴⁰ *Digest of Education Statistics, 1999*, Tables 228, 229.

⁴¹ Roger L. Geiger, "The Competition for High-Ability Students: Universities in a Key Marketplace" in Steven Brint, ed. *The City of Intellect* (Stanford: Stanford University Press, forthcoming).

⁴² Ibid.

⁴³ F. King Alexander, "National Trends in the Relative Fiscal Capacity of Public Universities to Compete in the Academic Labor Market," (forthcoming).

⁴⁴ For example, cutbacks at Duke are described by Stuart Rojstaczer: *Gone for Good: Tales of University Life after the Golden Age* (New York: Oxford University Press, 1999); Washington University, a success story of the 1990s, foresaw "constraints on income" in 1992: "A University Agenda for the 21st Century," Washington University (April, 1992). Other private universities forced to economize in the early 1990s include Syracuse, RPI, and Brandeis.

⁴⁵ In the Spring, 2000, Princeton announced plans to expand its undergraduate student body by 500 students. It estimated that it could admit twice the number of current admits without any diminution of quality. In fact, it argued that expanding would increase the quality of its incoming class: Princeton University, "Wythes Committee Report" (April 2000). Other universities are undoubtedly discouraged from expanding by the current ranking system, especially the rankings of *U.S. News and World Report*. More students would marginally decrease measures of selectivity, which could have a significant adverse impact on rank.

⁴⁶ In 1997 and again in 2000 Princeton adjusted its aid formula to increase support for middle-income students and thereby forced its peer institutions to adopt more generous formulae as well.

⁴⁷ William G. Bowen and Derek Bok, *The Shape of the River* (Princeton: Princeton University Press, 1998), 128. This study was based on data from the College and Beyond database compiled by the Andrew W. Mellon Foundation.

⁴⁸ Carolyn M. Hoxby and Bridget Terry Long, "Explaining Rising Income and Wage Inequality Among the College-Educated," Harvard University (April 1999). This study employed data from Current Population Surveys.

⁴⁹ Dominic J. Brewer, Eric R. Eide, and Ronald G. Ehrenberg, "Does It Pay to Attend an Elite Private College? Cross-Cohort Evidence on the Effects of College Type on Earnings," *Journal of Human Resources* 34 (1999): 104-19. This study analyzed data from the National Longitudinal Study of the High School Class of 1972 and High School and Beyond.

⁵⁰ Paul William Kinston and John C. Smart, "The Economic Pay-Off of Prestigious Colleges" in *The High-Status Track: Studies of Elite Schools and Stratification*, Paul William Kinston and Lionel S. Lewis, eds. (Albany: State University of New York Press, 1990), 147-74, quote p. 155; National Center for Education Statistics, *College Quality and the Earnings of Recent College Graduates* (Washington, D.C.: OERI, 2000).

⁵¹ Eric L. Dey, et al. "Long-Term Effect of College Quality on the Occupational Status of Students," Stanford University, National Center for Postsecondary Improvement, Technical Report Number 5-06 (n.d.); Alan B. Krueger and Stacy Berg Dale,

⁵² Kingston and Smart, "Economic Pay-Off," 171; Ernest T. Pascarella and Patrick T. Terenzini, *How College Affects Students* (San Francisco: Jossey-Bass, 1991), 525.

⁵³ The thesis of Hoxby, "Changing Market Structure."

⁵⁴ Michael McPherson and Owen Morton Schapiro, "Reinforcing Stratification in American Higher Education: Some Disturbing Trends," Stanford University, National Center for Postsecondary Improvement, Technical Report Number 3-02, Table 8.

⁵⁵ For the 10 non-technical private universities with the highest costs, an average of 45 percent of undergraduates received no financial aid: Time/Princeton Review, *The Best College for You, 1999*. Probably most of the 55 percent of students receiving aid at these schools come from homes with above-average incomes, but still have need in meeting payments of more than \$30,000 per year.

⁵⁶ E.g. Stanford in 1998 stated (on the basis of an internal study) that undergraduates paying the full tuition price of \$21,300 received a subsidy equal to two-thirds of that amount (c. \$14,000): *Annual Report, 1998*, p. 7.

⁵⁷ For a similar argument, which considers only the effects of selectivity but not institutional finances, see Robert R. Reich, "How Selective Colleges Heighten Inequality," *Chronicle of Higher Education* (Sept. 15, 2000): B-7 – B-10.

⁵⁸ [Thomas G. Mortenson], *Postsecondary Education Opportunity* (Dec., 1998): 8-13; Larry D. Singell, Jr. and Joe A. Stone, "The Good, the Poor, or the Wealthy: Who Benefits Most from College Financial Aid," ms. University of Oregon (Feb., 2000); McPherson and Schapiro, "Reinforcing Stratification," 23-26.

⁵⁹ In 2000, 14 private universities reported endowments of more than \$3 billion, and even a few of these institutions complain of being 'under-endowed' compared with their competitors.