The Evolution of the American Higher Education System

The American higher education system is the envy of the rest of the world. At the start of the 21st century, it is a mixed system of over 3,800 public and private degree-granting institutions. It provides access to higher education for a large proportion of our population. Its diversity is extraordinary. At one end of the spectrum are two-year institutions that offer both vocational instruction and academic instruction to prepare students for entry into four-year colleges. At the other end of the spectrum are the large multiproduct research universities that provide four-year undergraduate education in a wide variety of liberal arts and applied areas; offer graduate education for professions such as law, medicine, business, and education; and undertake research and educate doctoral students.

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In the mid-1990s, slightly more than 43 percent of the nation’s institutions were public, enrolling about 80 percent of all students. American higher education did not start out as a heavily public system, however. The earliest higher education institutions in the United States were private church-related institutions that provided classical undergraduate educations. Even after the passage of the Morrill Acts in 1862 and 1890, which donated public lands and provided funding for the establishment of colleges that would emphasize the study of the agricultural and mechanical arts, only about 20 percent of all American college students were enrolled in public institutions at the turn of the 20th century. However, by 1940 this proportion had risen to almost 50 percent.

Goldin and Katz (1999) attribute the growth in public higher education to a number of forces. First, the number of subjects taught in academic institutions increased as knowledge became specialized due to the increasing application of science to business, the growth of scientific and experimental methods, and the increased importance of academic knowledge in confronting social problems resulting from an increasingly urban and industrial society. As knowledge and teaching became more specialized, the optimal size of higher education institutions expanded, and research became increasingly important in higher education.

Second, accompanying the rise of the research institution was the demise of independent professional institutions. Stand-alone professional schools, such as medical colleges, had come under attack for lax standards and increasingly were replaced by professional schools associated with universities that could both draw on the academic disciplines already present at the institutions and benefit from the institutions’ overall “brand names.”

While some private institutions were founded as, or grew into, modern research universities, in the main it was public higher education that benefitted from these trends. The secular nature of public institutions made them well equipped to evolve into modern scientific-method-oriented institutions. The focus in land grant institutions on problems of importance to the well-being of the states in which the institutions were located provided them with political support in their states that translated into funding. As the proportion of students who graduated from high school increased, and more and more of these students came from lower- and middle-income families, the low tuition levels of the public institutions also provided a financial incentive for students to attend them.

The growth in public-sector higher education enrollments after World War II was fueled by the GI bill, the continuing increase in high school graduation rates, and the growth of federal financial aid for students that started in the 1970s. With state appropriations for the public institutions often explicitly or implicitly tied to enrollment levels, institutions often had incentives to expand their enrollments. In contrast, many private institutions, particularly the selective liberal arts colleges, chose to keep their enrollments relatively constant. They did so to avoid having to “spread” their endowment resources over a larger number of students, which in turn would reduce the expenditure that they could devote to educating each of their students (Winston 1999b).

American higher education is dynamic. During the last quarter of the 20th century, the number of academic institutions increased by about 700.
changing Carnegie categories and missions. Institutions either succeed within the group of similar institutions with which they compete, try to evolve into more complex institutions, or die. Some 350 campuses were closed during the last quarter of the 20th century, over half of which were four-year institutions and 90 percent of which were private. Thus, the number of higher education institutions newly created during the period was well over 1,000.

Most of the new institutions created were small private colleges with enrollments of less than 500 in the year they were first observed. Similarly, most of the institutions that closed during the period were small private colleges (Zumeta 1999). Data on changes in the distribution of institutions across Carnegie categories over time suggest that institutions that survive typically remain within a category or move up to a higher (larger, more graduate programs, or more research programs) category (Carnegie Foundation 1994). It is a rare institution that reduces its scope and size and survives.

No wide base of empirical knowledge about the characteristics of institutions that change classifications is available. Christopher Morphew (2000) has conducted preliminary research on institutional decisions to change their names from “college” to “university.” Among his hypotheses is that institutions that do so are seeking to diversify their revenue streams, increase their legitimacy, appeal to a growing adult part-time clientele, and increase donations. Of course, institutional names may not always accurately represent an institution. Boston College, for example, has long been a university in every sense of the word. It seems clear that the evolution of institutions is a fertile area for future research.

An extraordinary amount of research has been directed toward understanding the behavior of selective private institutions; Clotfelter (1996) and Ehrenberg (2000b) are but two examples of such research. In spite of the fact that the vast majority of American students attend public institutions, much less is known about the behavior of these institutions and how they interact with the states that support them and with the private institutions within the same states’ boundaries.

In the section that follows, I discuss what we do know about the behavior of public higher education institutions and state policies toward public and private higher education, as well as the issues that still require attention from researchers. Later sections discuss some research issues raised by the growing proprietary, or for-profit, accredited higher education sector, the growth of distance learning, and the pressures on institutions to diversify their revenue streams.

**Public Higher Education and State Policies toward Private Colleges and Universities**

The fraction of college students educated in public higher education institutions varies widely across states. To a large extent, this reflects history and variations in the prevalence of private institutions in a state. While there are regional patterns, per capita enrollments in public higher education increase as one moves from the East to the South to the Midwest and to the West; there are also variations within regions. States’ levels of tuition and support for public institutions also vary widely (Quigley and Rubenfeld 1993).

Those states with the highest per capita public enrollments tend to spend more per capita than other states. However, other factors clearly matter. For example, in some of the southern states, low expenditure per student at private institutions goes hand in hand with low expenditure per student at public institutions. In contrast, in the northeastern states, the higher expenditures per student found in the private institutions are associated with lower expenditures per student in the public institutions. States with more mobile populations also appear to provide less funding for public higher education (Clotfelter 1976; Stratham 1994). Similarly, public institutions in states with private institutions that charge higher tuition
levels appear to have higher public tuition levels.

Trying to infer causation from correlations is no simple task. Quigley and Rosenfeld estimated a model of student demand and legislative supply and concluded that the higher the tuition level charged by public institutions in a state, the lower state appropriations appear to be, ceteris paribus. Lowry (2001) finds that less state funding for public institutions leads to higher net (after institutional grant aid) tuition revenue but that tuition revenue does not influence state funding. While the differences in results between the two papers may be due to differences in model specifications, they also may be due to the difficulty of teasing out behavioral relationships using cross-sectional data. This is an area of research that cries out for the use of panel data and the study of changes in key variables over time. Alternatively, careful studies such as that of Hoenack and Pierro (1990) that analyze, among other things, the relationship between state appropriations and tuition levels at a single public university using long time series of data may be useful.

The characteristics of the relationships between states and the higher education institutions operating within them vary widely across states. Some states provide direct operating support to private institutions (Zumeta 1992, 1996). An example of this type of aid is the Bundy aid program in New York State, which statutorily provides grants of $4,550 (doctoral), $950 (master’s), $1,500 (bachelor’s), and $600 (associate’s) to private colleges and universities for each degree they award to residents of New York State. Due to state budget cuts over a number of years, the actual grant levels received by the private colleges were approximately one-third of the statutory levels in 2000–2001.

Many states also provide grants to state residents who attend either public or private institutions in the state; the magnitudes of such aid vary widely across states and have been increasing over time (National Association of State Student Grant and Aid Programs 1999). While in some states this aid is primarily need based, in others it is increasing not—the Georgia HOPE Scholarship is perhaps the best-known example of a non-need-based aid program. Analyzing tuition levels at public and private institutions within a state without consideration of state financial aid programs is obviously a mistake.

States also differ in terms of how public higher education is organized for governance purposes. In some states, there is a single state coordinating board that either sets tuition levels at each public institution or makes recommendations for tuition levels to the governor or the legislature. In other states, multiple boards exist. In an important paper, Lowry (2000) has shown that the numbers of these boards and how their members and the members of individual public institutions’ boards of trustees are chosen have an impact on the levels of tuition charged by the institutions and on their appropriation levels. In particular, higher levels of state control and a greater share of board members being chosen by voters or appointed by politicians appear to be associated with lower tuition levels at public institutions.

While at one time by far the majority of college students attended college in the state in which they graduated from high school, increasingly students now attend college out of state (Hoxby 1997). Hoxby and others have attributed this trend to reductions in transportation and communication costs, changes in federal financial aid policies, and the increasing desire of students to “buy the best.” The growing willingness of students to attend college further away from their homes, coupled with reductions in state support (in real terms) for public higher education institutions that took place in many states during the late 1980s and early 1990s, provides an incentive for public institutions to try to enhance their revenues by enrolling more out-of-state students.

Previous research indicates that out-of-state students are attracted to high-quality institutions and that the higher the quality of an institution the higher the out-of-state tuition that can be charged (Greene 1994; Mixon and Hsing 1994). This provides an extra incentive for ad-
administrators at the public institutions to try to enhance their institution’s quality. However, Groen and White (2000) have shown that there is an inherent conflict between what administrators feel is best for the institution and what may be best for a state in terms of the likely probabilities that students educated at the institution remain in the state and contribute to the state’s economic well-being and tax revenue, as well as provide future financial contributions to the institution. They find that states are better off when public universities are not selective and restrict out-of-state admissions.

The proportions of students who come from out of state vary widely across the public institutions considered to be among our nation’s finest. For example, while the proportion of first-time freshmen who came from out of state was about 35 to 40 percent at Michigan, Virginia, Pennsylvania State, and Wisconsin—Madison in a recent year, it was less than 10 percent at California, Berkeley and less than 20 percent at North Carolina at Chapel Hill.

Research is needed to explain both interinstitutional variations in the proportions of out-of-state students at a point in time and changes in these proportions at different institutions over time. Such research should also examine differences across institutions and changes over time in the tuition premium that out-of-state students are charged. For example, in a recent year, the mean absolute out-of-state tuition premium charged undergraduates across U.S News and World Report’s top 35 public national universities was $7,340, but the premium varied from about $4,000 to over $12,000.

Such research will be complicated by the fact that a number of states with considerable excess capacity in at least some of their public institutions (those less attractive to in-state students) have an incentive to use low out-of-state tuition levels to try to attract students from other states. Also, to provide increased access for state residents to unique programs offered by public institutions in nearby states, states may enter into cooperative agreements with neighboring states on a space-available basis at their in-state tuition levels or a level lower than they customarily charge out-of-state students. Data collected periodically as part of the Integrated Postsecondary Education Data System (IPEDS) may permit researchers to investigate what fraction of out-of-state students at an institution are enrolled under such programs.

Public higher education institutions include two-year, four-year, comprehensive (undergraduate plus master’s programs), and doctoral institutions, as well as stand-alone professional schools. Nationally, the share of first-time freshmen in public institutions that enrolled in two-year colleges fell from about 63 percent in the fall of 1976 to 57 percent in the fall of 1996. This share also varies widely across states. For example, while the share was 78 percent in California in 1976, it was 65 percent in Mississippi, 55 percent in New Jersey, 45 percent in Tennessee, 32 percent in Virginia, 23 percent in Indiana, and 11 percent in Montana. These numbers are for all first-time freshmen. If instead one looks at first-time full-time freshmen, the shares are somewhat lower but the pattern is similar. For example, the share of first-time full-time freshmen in public institutions that enrolled in two-year colleges fell from about 46 percent in the fall of 1976 to 42 percent in the fall of 1996.

A topic that has yet to be researched is why states have chosen to organize students’ initial access to public higher education in such vastly different ways. It is cheaper to educate freshmen in two-year institutions than in four-year institutions, which in turn is cheaper than in doctoral institutions. Hence, part of the explanation may involve differences in income and wealth across states and over time. So too may the presence of historically black colleges and universities (HBCUs) in some states. HBCUs...
are predominantly four-year institutions. Research has shown that at the undergraduate level they tend to enroll African American students who otherwise would have gone to other four-year and two-year institutions (Ehrenberg, Rothstein, and Olsen 1999). Finally, economies of scale may lead some small-population states to concentrate most of their public higher education resources in one relatively large university.

A host of other distributional issues arise when one considers state support of public and independent higher education. Differences in the types of institutions that students from various socioeconomic, ethnic, and racial groups attend within a state lead to the need for research about the distribution of benefits from state support of public and private higher education across different groups in a state of the type that Hansen and Weisbrod (1969) undertook for public higher education in California over 30 years ago. The distribution of benefits will be influenced by differences in state appropriations to public higher education, tuition policies at both public and private institutions, state aid to private higher education, other resources that the institutions can bring to bear on educating their students, and state financial aid policies. The last may influence students’ progress toward their degrees and persistence in majors. Recent research on the Hope Scholarship program in Georgia addresses these issues. Dee and Jackson (1999) and Dynarski (2000) have looked at whether the HOPE Scholarship program has led to a widening in the college attendance gap between students from lower- and middle-income families.

Distributional outcomes are also determined by the prestigious public institutions in a state and how admission to these institutions is rationed. In some states (California for example), the most prestigious public undergraduate institutions are the large elite research universities. In other states (Ohio, for example), Miami University is the public campus that enrolls the students with the highest SAT scores rather than the largest research university, Ohio State. Why do such differences exist across states?

How students gain admission to the top institutions is also a matter of interest. Recent court cases and referenda in California and Texas and voluntary state policy in Florida have led these states to abandon systems of affirmative action or racial preference. Instead, they have implemented systems in which the top x percent of students that graduate from each high school in the state are guaranteed admission to the state university system. In California and Texas, the policies do not specify to which institution within the system the students will be admitted, while in Florida, the policy holds for every institution. What are the distributional impacts of such admission systems relative to admission systems such as that in place at the University of Michigan, which involves multiple considerations; including grades, test scores, high school courses, and diversity?

The Growing For-Profit Sector, Distance Learning, and the Diversification of Revenue Sources

There has long been a proprietary, or for-profit, sector in postsecondary education. For the most part, it consisted of organizations that provided vocational training in programs that lasted relatively short periods of time. The sector received a major boost when students enrolling in proprietary school programs were made eligible for federal financial aid programs, including the Basic Educational Opportunity Grant (BEOG), or Pell Grant, program and the Stafford subsidized loan program. The share of funds under these programs that were received by students enrolled in proprietary schools increased over time until they reached a peak in 1987. That academic year, proprietary school students received almost 27 percent of all BEOG funds, and that fiscal year they received almost 35 percent of all Stafford loan funds. Since that date, proprietary schools’ shares of these programs’ funds have declined.
Accredited proprietary college and university programs are a more recent phenomenon. Within the decade of the 1990s, major growth occurred and institutions such as the University of Phoenix, Devry, and ITT Educational Services now have campuses across the country (Strosnider 1998). In 1999–2000, the University of Phoenix alone enrolled over 75,000 students in its degree programs at campuses in 15 states, Puerto Rico, and Canada, and it is now the largest private university in the country (Blumenstyk 2000). The rise of these institutions has undoubtedly been stimulated by the growing economic returns to higher education, the growing need in the economy for lifelong learning, the subsequent increase in the number of older adults seeking a college education, and the increasing tuition costs of private nonprofit higher education.

Gordon Winston (1999a) has very eloquently assessed which sectors of the public and private nonprofit higher education industry face the largest threats from the growing proprietary sector. He identifies the most vulnerable institutions as those that currently have the smallest “subsidy” resources and shows that most of these vulnerable institutions are either private two-year, small private liberal arts, or private comprehensive institutions. If his analyses are correct, to survive the increasing competition from the proprietary sector, these organizations will have to reduce the net tuition they charge their students. This will require them to reduce their cost structures and/or to diversify their revenue streams. Case studies of how, if at all, these institutions are reacting to the threat posed by the proprietary sector would be very useful.

I have argued elsewhere that the need for these institutions to diversify their revenue streams is shared more generally by almost all public and private nonprofit higher education institutions (Ehrenberg 2000a). The public institutions need to do so to make up for the inability, or unwillingness, of many state governments to provide them with the growth in funding necessary to maintain their quality and meet the growing demand for public higher education projected over the next decade. The private, and to some extent the public institutions, need to do so if they wish to prosper in the years ahead, because there appears to be growing public resistance to their continuing to raise tuition at rates two to three percentage points above inflation. How institutions diversify their revenue streams will depend largely on the nature of each institution and the local conditions it faces. However, we can expect to see continued expansion of professional master’s programs, continuing and executive education programs, and distance learning, as well as the increased commercialization of research.

Distance learning and the commercialization of research raise important academic freedom and intellectual property issues that academic institutions and their faculty members are working to resolve. Research universities differ widely in terms of the ratio of annual revenue from the commercialization of research to total annual research volume. It would be interesting to learn if this variation reflects idiosyncratic factors (e.g., an entrepreneurial administrator or a single large-revenue-generating patent) or more systematic forces, such as the resources that the institution devotes to commercialization and the research areas in which the institution is strong.

Just as the reduction in transportation and communication costs has made the student bodies at many institutions more national and international during recent decades, changes in technology have effectively expanded markets for distance learning. Institutions can easily expand the reach of their degree programs far beyond their initial campuses. Some have aggressively sought to do so; for example, residents of the state of Pennsylvania can now take degree programs by distance learning from Old Dominion University, a public doctoral university in Virginia. Other institutions offer executive M.B.A. programs primarily by distance learning. Still others are choosing to focus on certificate programs and other ways to commercialize their intellectual property without “watering down” the value of their on-campus degree programs.
Are the institutions all “groping,” or do the strategies being pursued vary systematically with measurable characteristics of the institutions? Are the institutions most heavily invested in distance learning activities the ones that have the greatest financial need to be involved in distance learning? Do the revenues generated from these activities serve only to make the activities self-supporting, or do they provide funding for other core missions of the institutions? Have institutions that have not moved aggressively in this direction been placed at a competitive disadvantage relative to their competitors, or have they gained by observing the errors of the “first movers”? There is much speculation but very little hard evidence on these issues.

**Conclusion**

While an extraordinary amount of research has been directed toward understanding the behavior of selective private institutions, very little is known about public institutions and how their states interact with them and the private institutions within their borders. Given that the vast majority of American students attend public colleges and universities, the issues those institutions face during this period of transformational change in American higher education clearly warrant serious scholarly attention. So do the issues raised by the growing for-profit higher education sector, the growing use of distance learning, and the growing need for higher education institutions to diversify their revenue sources.

**REFERENCES**


