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Is the Golden Age of the Private Research University Over?

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I received my PhD in June 1970, graduating during one of the best job markets ever known to an academic. I had my choice of positions at a dozen major research universities, and I felt that I was in heaven. Then, over the next decade, with rampant inflation and high unemployment rates, the average salaries of faculty teaching at American colleges and universities fell by over 25 percent in real terms.
Perhaps this short history will make readers wonder question how accurate my predictions in this paper about the future of America’s private research universities are likely to be. However, since 1970 I have spent almost 30 years conducting research on the economics of higher education, chairing faculty budget committees at Cornell, serving as a Cornell vice president and then as a trustee of both Cornell and SUNY, and being associated with more national commissions and higher education organizations than I can count. So I assure you that I know a lot more about higher education today than I did back then.

Despite the dip in salaries in the 1970s, my career has coincided with the golden age of selective private research universities. Over the last 40 years, these institutions have been transformed. Their undergraduate admissions have become increasingly selective, and they enjoy a concentration of top undergraduates from around the country and the world. The growth of federal research funding has enabled their extensive research activities and their training of PhD students, many supported as research assistants, to soar. Most of their faculty members are teaching fewer courses than their counterparts did in the past. Their average faculty salaries now far outdistance those at most other types of institutions.

Being a faculty member at a selective private research university has been, and still is, a great gig.

However, these institutions now face a very troubled external environment. On the one hand, politicians and the public view private research universities as part of the solution to our nation’s problems. They understand that a highly educated population is essential if we are to improve or even maintain our nation’s position in an internationally competitive knowledge-based economy. However, the US no longer leads the world in the share of our young adult population with college degrees, and the groups in our population that are growing the most rapidly (people of color and those from low-income families) have historically been underrepresented in higher education. And although most American college students are educated in public institutions, private research universities are expected to contribute to the solution by educating more undergraduates.

Increasingly, they are also seen as major drivers of economic activity. The nation looks to them and their public counterparts to provide the research that will create new industries; high-paying jobs; and improvements in our nation’s economy, health, environment, and food supply.

The typical private research university now gives back over 40 cents of each dollar of its undergraduate tuition in the form of financial aid.

On the other hand, private research universities are viewed as part of the problem. There are worries that their ever-increasing tuition levels are limiting access to higher education and contributing to skyrocketing student-debt burdens. Although many of them have need-blind admissions and need-based financial aid policies, relatively few students from families with modest means attend them.

Policymakers have voiced concerns that they do not spend enough from the great endowments that some have amassed to hold tuitions down and provide sufficient financial aid. So increasingly, these universities worry about the imposition of federal policies that would force them to spend more from their endowments and possibly even affect their ability to raise tuition. They are also concerned that they may lose some of the favorable tax treatment that they receive on their endowments and that their donors receive when they make contributions.

I am going to give four reasons for the conclusion that the financial models that private research universities (and some private liberal arts colleges as well) operate under are breaking down. I will then provide more details about each reason, as well as some speculations about what the future will bring.

1. As part of a century-long trend, their tuition levels have increased 3 to 3.5 percent more than the rate of inflation for the last 30 years, and we have reached the point where economic and political forces will likely limit their ability continue this pattern.

2. Their financial-aid budgets have dramatically increased, partly because of the Great Recession but also because of policies they adopted to make themselves more accessible to students from families with limited means. The typical private research university now gives back over 40 cents of each dollar of its undergraduate tuition in the form of financial aid. For most, undergraduate tuition is the major sources of unrestricted operating revenue, so this limits their ability to fund their operating budgets.
3. The share of their ever-increasing research budgets that they subsidize out of their internal funds grew from around 10 percent in 1970 to about 20 percent in 2000 and has stayed roughly at that level since. Their claim that full-paying students are paying far less than the cost of their education is based upon their including estimates of the value of the services provided by their buildings (which have often been funded by gifts) in the calculation. In truth, they may well be subsidizing research out of undergraduate tuition dollars. As popular backlash to this strategy grows, it will be increasingly difficult for them to do so. Meanwhile, federal funding for research is becoming scarcer.

4. During the last 20 to 30 years, instructional costs have declined relative to almost every other category of expenditures, including student services and administration. While this reflects an increased use at many research universities of part- and full-time non-tenure-track (AKA contingent) faculty for instruction, they need to dramatically reduce their administrative cost structures. A number of major universities have taken steps to do so, but these actions are not a panacea and often impose costs on faculty.

All of these pressures are coming to bear just when many financial analysts predict that endowment returns in the years ahead will be lower than those that these institutions grew to expect in the years prior to the financial meltdown. So the private research universities cannot count on high endowment returns to help alleviate their financial problems.

### The Pressures

#### Tuition

Tuition increases over the last three decades have been driven by a number of factors.

First, selective private research institutions behave like the Cookie Monster on Sesame Street, whose sole objective is to find and devour as many cookies as he can. They aspire to be the very best they can in every dimension of their activities, both academic and nonacademic, and they aggressively seek out resources, including increased tuition revenue, to accomplish this.

Second, students and parents believe that where a student goes to college matters almost as much as whether a student go to college and that these institutions confer unique educational and economic advantages on their students—a belief that is supported by many empirical studies (see Brewer, Eide, and Ehrenberg, 1999). As a result, the size of their applicant pools keeps increasing; few market forces have constrained their tuition growth.

Third, because expenditure per student plays an important role in the U.S. News and World Report rankings, any university that increased its expenditures at a slower rate than its competitors do would fall in the rankings. This contributes to an arms race in spending.

Finally, they must continually invest in new technologies and provide them to their students, even if these investments increase their costs, because their competitors do and because students will need to be familiar with these technologies in the world of work.

But stagnating (and recently declining) family incomes, growing student-debt burdens, and concerns that tuition increases are limiting access have led us to the point that raising tuition by rates as large as historic ones is increasingly becoming politically unpopular and economically unfeasible.

### Undergraduate Financial Aid

Prior to 1980, many institutions had the discipline to link tuition increases to changes in median family income. For example, Cornell’s tuition was roughly 28 percent of median family income between 1965 and 1980; by 2010–2011, it had risen to 65 percent. Since 1980, real income growth has stagnated, and institutions like Cornell have based their tuition on their revenue needs rather than on families’ capacities to pay. As the financial need of these universities’ students consequently increased over time, the tuition discount rate (the share of each tuition dollar they give back in the form of financial aid) grew.

But at the same time, many of them were experiencing substantial increases in the value of their endowments. Generally, institutions aim to spend between 4 and 5 percent...
of a weighted average (usually over 3 years or 12 quarters) of their endowment values each year. With prolonged endowment growth, the percentage being spent relative to the current value of the endowment often turned out to be substantially less than 4 to 5 percent.

So the wealthiest institutions (Harvard, Yale, Princeton, and Stanford) began to increase the generosity of their financial aid policies, and the rest of the private research universities followed suit to the best of their abilities. NACUBO reported that by fall 2008, the average tuition discount rate at private four-year institutions had risen to 42 percent nationwide, up from 26.7 percent in fall 1990. Inasmuch as most of the private research universities fund the majority of their students’ grant aid out of current revenues (Cornell, with an endowment in the $5 billion range, funds over 80 percent of its institutional grant aid this way), their financial-aid budgets have consumed an increasing share of the increase in tuition revenue that they generate each year.

A rude awakening came in 2007–2008, when the US Senate Finance Committee began to investigate the endowment-spending policies of the institutions with the largest endowments. Concerned about why the wealthy institutions kept increasing their tuitions levels while their endowments were growing so rapidly, the Committee wanted to know why they could not spend a greater share of their endowments each year to hold tuition increases down and to boost financial aid.

Fear that the Committee would propose regulations requiring them to spend a minimum fraction of their endowment value each year that exceeded the percentage they preferred to spend, as well as their genuine concern that they still were enrolling relatively few Pell Grant recipients, led the richest institutions to eliminate all loans from their financial-aid policies and increase the generosity of their grant-aid programs even more. Again, their competitors reacted to the best of their abilities.

But none saw the financial collapse coming, which wreaked havoc on endowments and simultaneously and dramatically increased the financial need of applicants. As a result, their tuition discount rates increased even more. While the situation will improve if family incomes start growing again, it seems clear that the institutions’ current financial-aid policies are not sustainable.

An added complication is that at most of these universities, the share of students who receive grant aid from the university keeps increasing. At Cornell, for example, in 1987–88 about 29 percent of undergraduates received this aid averaging $5,300 from the university; this year the university projected that almost 52 percent of its students will receive an average of more than $34,000. At this rate, over time, fewer and fewer of these institutions’ students will pay full tuition.

As information seeps out to full-paying students how large the grant aid is that some of their less financially fortunate counterparts are receiving and how many of the latter there are, financial aid potentially becomes a very divisive issue on campus. In the future, full-paying students may be less likely to have warm feelings about their alma maters than donation-giving alumni have historically had.

Meanwhile, all around the country university leaders are mounting campaigns to raise endowments for undergraduate financial aid. But the magnitudes of the sums needed are enormous. And even if the campaigns are successful, contributions for financial aid may divert funds that could have been raised for other purposes.

The Costs of Research

Between about 1970 and 2000, the share of our rapidly growing total university research and development expenditures nationwide financed out of internal university sources increased from about 11 percent to over 20 percent, where it has remained ever since. In part, this increase reflects the growing costs of startup packages provided to new faculty hires in the STEM fields, which cannot be recovered in indirect-cost billings. A survey we did at CHERI over a decade ago found that the typical startup package at private research universities was in the $400,000 to $500,000 range for assistant professors and in the $1 million to $2 million range for full professors. Both are certainly much higher today.

Meanwhile, the federal government has set maximum limits for several categories of indirect-cost recoveries (now called facilities and administration costs) that are far below what universities actually spend. Moreover, the indirect-cost recovery formulas have historically assumed a longer useful life for research building than actually occurs (which restricts the annual depreciation allowance that the university can collect on these buildings each year). Finally, the federal government and other external research funders sometimes require institutional matching funds to be included in grant proposals. As research volume increases, the impact of institutional research expenditure on private research university budgets grows.

In the future, full-paying students may be less likely to have warm feelings about their alma maters than donation-giving alumni have historically had.
Where do dollars spent on research out of institutional funds come from? In part they come from unrestricted endowment spending and from annual giving from private sources that can be used for current operating expenses or for capital purchases. In part, they may come from revenue streams that the university has developed from the commercialization of its faculty members’ research findings (e.g., licensing revenue from patents and startup-company investments). But they come in part from other sources of unrestricted revenues in the operating budget—namely, undergraduate tuition.

A few years ago, colleagues and I asked who actually bears the burden of increasing university expenditures on research from institutional funds. Our empirical analyses suggested that as institutional research spending per faculty member increased at private research universities, holding other factors constant, there was an increase in student-faculty ratios, a substitution of contingent for tenured and tenure-track faculty, an increase in average faculty salaries (presumably to attract top researchers), and an increase in undergraduate tuition levels.

The magnitudes of these effects were not that large, but they do suggest that some of the costs of institutional expenditures on research are being borne directly by students. Whether these costs are more than offset by the benefits that undergraduates receive from being educated in proximity to researchers who are at the cutting edge of their disciplines is an open question. In the years ahead, it will continue to be important for the institutions to emphasize the role that research plays in their students’ education.

But as tuition keeps rising, student debt levels keep increasing. Meanwhile, in the years ahead institutions are likely to spend more of their institutional funds on research to make up for the probable decline in federal funds for research. Unless they develop substantial new external funding streams to support it, inevitably undergraduates will bear more of the cost of their research enterprise. This may not be sustainable.

**Shifting Expenditures**

Between 1987 and 2008, the share of resources going to instructional expenditures at private research universities declined relative to the share going to student services, academic support, and institutional support. Data from the Delta Cost Project suggest that during that period, instructional expenditures grew at these institutions by about 1.87 percent a year more than the rate of inflation, while student-service, academic-support, and institutional-support expenditures grew, respectively, by 3.13 percent, 2.87 percent, and 2.6 percent more than inflation. Why did this shift in their allocation of resources away from their core teaching mission occur?

Student-service expenditures include the costs of admissions, registrar activities, and services that contribute to students’ emotional and well-being outside the classroom. While some critics of higher education view these expenditures as frills, research we conducted at CHERI suggested...
that they have positive effects on persistence and graduation rates, especially for students from disadvantaged educational and economic backgrounds. So I would be cautious before arguing that they have been growing too rapidly at private research universities.

Academic support expenditures include those that support instruction, research, and public service, including libraries, museums, academic computing, and academic administration. The rapid growth of expenditures in this category derives at least partially from adopting costly technologies to enhance student learning and job preparation, as well as faculty research.

Institutional-support expenditures include many of the administrative functions of the university: legal, audit, risk management, human resources, budget, alumni affairs, development, and public and governmental relations. Critics, including faculty, focus on this category of expenditures when they talk about “administrative bloat.” Some of these cost increases can be attributed to a proliferation of governmental regulations and reporting requirements and others to the fact that one must spend money to make money (e.g., on alumni relations and development). But this growth can also be chalked up to the desire of every unit on campus to be as good as it can in every dimension of its activities.

Prior to the financial meltdown, these institutions tended to compare their expenditures in different functional categories to what their competitors were doing. For example, an institution would hire an external consultant to do a study of its human resource division’s expenditures relative to its competitors’.

If a report came back that the institution was spending less than those competitors, the vice president of human resources would stress to the president and the CFO all the wonderful things the institution could do for faculty and staff with more resources: employee-assistance programs, educational programs to facilitate employee advancement, financial counseling for retirement, spousal employment-search support, subsidized child-care centers, to name but a few. Like the comparability studies done on executive compensation in the corporate world, this led to a built-in bias to increase such expenditures, because being below the mean in an expenditure category was a signal that more money should be spent on it.

Only after the financial meltdown did many institutions realize they had to view administrative costs more systematically across the whole institution. A number of public and private research universities hired management-consulting companies to provide advice to them (and public cover for hard decisions that would cost people their jobs). UNC, Cornell, and Berkeley all contracted with Bain Consulting, and the advice that came back was pretty much the same for all three institutions:

- Reduce the layers of administration and increase the number of direct reports that each administrator supervises.
- Centralize procurement and limit purchasing to “preferred vendors” to achieve price concessions from suppliers due to large-scale purchasing. Also move more fully to electronic purchasing to reduce the paperwork involved (thereby dramatically reducing employment).
- Achieve efficiencies in how information technology is delivered and organized across the campus.
- Similarly reorganize the delivery of support services such as finance, communication, and human resources.

Cornell is on track at its Ithaca campus to achieve savings of $75 to $85 million a year by the end of FY2015 from these efforts—more than 5 percent of its operating budget once one removes external research funding.

However, two cautions are in order. First, these are one-time cuts in the university’s base operating budget; continual efforts to reduce administrative and other costs will be necessary if Cornell and other private research universities are to have any hope of reducing their rates of budget and tuition increases.

Second, cost savings may be in the eye of the beholder. Shifting to electronic purchasing and reducing clerical support puts more administrative burdens on faculty time.

Whether these costs are more than offset by the benefits that undergraduates receive from being educated in proximity to researchers who are at the cutting edge of their disciplines is an open question.
Requiring faculty to make purchases through preferred vendor relationships does not necessarily mean that they can get the lowest possible price in the shortest possible time for the specific items that they want. A number of scientists at Cornell have vigorously complained to me about Cornell’s movements in this direction.

**What Will the Future Bring?**

I conclude with some speculations about the future.

At many private research universities, full-time and part-time non-tenure-track faculty already do a large fraction of the introductory teaching, which some research, including my own, suggests has an adverse effect on student outcomes. Growing financial pressures will undoubtedly contribute to enlarging the proportion of contingent faculty at these institutions.

The universities need to figure out ways to use technology to simultaneously reduce instructional costs and improve educational outcomes, especially in large introductory classes. MOOCs are in vogue now, and many universities are trying to figure out how they will affect the future.

But meanwhile, the careful work of the National Center for Academic Transformation (NCAT) and the Carnegie Mellon University Open Learning Initiative (OLI) both already suggest that introductory classes in a wide variety of areas can be redesigned using technology to promote active learning, enhanced course persistence, and cost reductions. Faculty often do not support such initiatives; they either do not want to put time into completely restructuring their classes or worry that the savings will result in smaller departmental sizes and fewer colleagues.

In addition to changing how they offer instruction, the institutions need to understand that no great research university can offer it in every subject or every specialty in the subjects they do offer. They need to greatly expand the numbers of classes they share with competitors, using either synchronous or asynchronous technologies.

While tenured and tenure-track faculty at these institutions have grown accustomed to teaching loads moving in one direction (i.e., lower), as external research funding declines and operating budgets become more stressed, institutions may begin to reexamine teaching assignments and to increase teaching expectations for faculty who fail to obtain external research funding. Faculty in fields where external research funding has never been plentiful and who have been granted relatively low teaching loads (so they can conduct “departmental research”) and generous institutional paid leave because of their limited opportunities for external research funding may also be vulnerable.

In an effort to slow down the rate of growth of financial-aid budgets, a number of the less-wealthy private research universities have begun to modestly increase their annual loan limits for students whose family income levels are above some threshold, while continuing to guarantee access to applicants with the greatest financial need.

Wesleyan University, a selective private liberal arts college whose financial-aid resources were more limited than some of its competitors’, announced in June 2012 that it would move away from a need-blind admissions policy until it could raise enough endowment to support a larger financial-aid budget. It said that it would admit the last share of its students (perhaps 10 percent in 2013–2014) by only considering for admission applicants who did not need grant aid from the institution. To have done otherwise would have required it to starve the rest of the institution, increase its average loans to a level that would interfere with students’ ability to choose majors that lead to low-paying but socially important occupations, and/or cause it to lose desirable applicants to its competitors.

The ability of many of the private research universities and liberal arts colleges to maintain their level of commit-
ment to access in the years ahead may well be limited. The balance between providing institutional resources for need-based financial aid and providing institutional resources to finance operating activities is not easy to achieve.

The quest for new revenues will undoubtedly lead selective private research universities to try to increase annual giving, the commercialization of their research, and the use of their facilities (through summer and evening operations). They are also likely to try to generate more revenue from full-paying students and lucrative professional degree programs, including hybrid and online ones.

Many faculty members in the arts and sciences worry that some of these strategies will deprecate their “brands” and take faculty time away from what they see as the core missions of the university—namely undergraduate education, doctoral education, and research. So efforts by administrators to expand in these directions often exacerbate tensions between faculty and administrators. Speaking as an economist, I urge faculty to think of these activities as ways to ease the budget constraints their institutions face, which in the long run will permit them to do more of the things that they value the most.

In conclusion, I must stress that the financial challenges that selective private universities will face in the years ahead pale in comparison to those that our nation’s great public research universities are already dealing with. They are described in my 2006 Change piece, as well as the report of a recent National Research Council committee (upon which I served) and a recent National Science Board paper (all found in the Resources list).

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**Resources**