

Revised Draft
December 5, 2011

Independent Colleges and Universities in a Time of Transition

by

Ronald G. Ehrenberg*

(To be presented at an invited plenary session address at the Council of Independent Colleges 2012 Presidential Institute, Marco Island, Florida, January 5, 2012)

* Irving M. Ives Professor of Industrial and Labor Relations and Economics at Cornell University and Director of the Cornell Higher Education Research Institute (CHERI). CHERI receives financial support from the Andrew W. Mellon Foundation and I am grateful to the Foundation for its support.

Introduction

Being a president of a member institution of the Council of Independent Colleges is fraught with challenges. To name but a few:

1. Our nation's financial meltdown in 2008 and the accompanying great recession has dramatically increased families' financial need and led to increased pressure on financial aid budgets
2. Reductions in endowments and annual giving have put even more pressure on tuition, at a time when both potential students and the parents and public policymakers are exhorting institutions to hold down college costs and
3. High unemployment rates for college graduates, coupled with increasing debt levels for college graduate have shifted students' and policymakers' focus from getting a college degree to getting a degree in a field that "promises" higher earnings. This puts pressure on CIC institutions to defend the value of a liberal arts education.

I often start talks that I give on higher education issues by saying that I know from my own personal experiences as a Cornell Vice President, a Cornell Board of Trustee member, and now a Trustee of the State University of New York that it is much easier to write about the issues facing higher education, as I do, than it is to actually have the responsibility to administer and lead a higher education institution. I also know that it is much easier to be a higher education leader in good times than in bad times, but that who are leaders are is much more important during bad times than during good times. So given the all the challenges that independent colleges and universities now face, I want to express my admiration to those of you leading these institutions during a very crucial point in time for them.

I am going to discuss the stresses that the American higher education system is now under, the changes that we have seen in American higher education over the last three decades - many which predate the great recession - and how CIC members have responded, and might respond in the future, to these changes. A message that I hope you will take away is that I believe you have a unique advantage relative to your public sector counterparts because of the difference in the governance structures and financial models under which you operate. I will conclude by speculating a bit about what the future will hold for all of us.

What's Been Happening in American Higher Education?

During the last three decades, undergraduate tuition levels increased each year, on average, by 3.5 percent more than the rate of inflation at private four-year academic institutions. The comparable increases for public four-year and public two-year institutions were 5.1 percent and 3.5 percent, respectively.¹ Tuition increases in private higher education have been associated over this period with increased real expenditures per student; in public higher education, as I detail below, at best tuition increases have helped to compensate for reductions in state support.²

I have extensively discussed the forces that cause private and public undergraduate tuition levels to continually increase at rates that exceed the rate of inflation, as measured by the rate of increase in the Consumer Price Index (CPI).³ For private institutions, such as yours, these include:

¹ Baum and Ma (2011), figure 4

² Desrochers et. al. (2010)

³ See, for example, Ehrenberg (2002, 2006, 2007, 2010) and Archibald and Feldman (2011)

1. The aspirations of academic institutions, similar to other nonprofit institutions, to be the very best they can in every dimension of their activity which calls for ever increasing resources.(cookie monster example)
2. The perceptions by students and parents that where they go to college is almost as important as whether they go to college and the belief that higher priced selective private institutions confer unique educational and economic advantages on their students, which leads to long lines of applicants applying to these institutions and only limited market forces to limit their tuition increases.⁴ Their behavior provides a “cover” for less selective private institutions to raise their tuition levels
3. The belief that the essence of a liberal arts education is small class sizes and substantial personal interaction between faculty and undergraduate students; this has made it difficult to achieve productivity gains and cost reductions
4. Published rankings, such as those of *U.S. News and World Report*, which are based partially on institutions expenditures per student. This leads to an arms race of spending, as any institution that unilaterally held its expenditures down, or whose expenditures grew at a slower rate than its competitors, would fall in the rankings and
5. The growth of technology which often comes at a high cost and leads to improvements in quality in higher education, but these quality changes are not reflected in the rate of increase in tuition because, unlike with the CPI, adjustments are not made for product quality changes in computing the rate of tuition increase.

⁴ Most studies, including Brewer, Eide and Ehrenberg (1999) and Eide, Brewer and Ehrenberg (1998) find that higher priced selective private institution confer educational and economic advantages on their students; the only studies that find contrary evidence are Dale and Krueger (2002) (2011).

Of course, all of these factors hold for public higher education institutions as well, but as I will discuss in more detail below, they have the added pressure that cutbacks in state support put on tuition.

The nature of faculty positions has also changed dramatically during the last 30 to 40 years. The percentage of faculty nationwide that is full-time has declined from almost 80 percent in 1970 to 51.3 percent in 2007 and the vast majority of part-time faculty members do not have Ph.D.s.⁵ The percentage of full-time faculty not on tenure tracks has more than doubled between 1975 and 2007, increasing from 18.6 percent to 37.2 percent.⁶ As a result, today only about one-third of the faculty teaching at American colleges and universities are full-time and tenured or on tenure-track appointments.

Why did this change in faculty composition occur during a period when undergraduate tuition levels increased in real terms, on average, at the rates indicated above? One reason is that the *tuition discount rate*—the share of each tuition dollar that institutions returned to their undergraduate students in the form of need-based or merit grant aid—increased substantially at private 4-year institutions. For example, the average tuition discount rate for first-time full-time first year students at private four-year institutions, such as many of yours, reached 42 percent in the fall of 2008; the comparable figure in the fall of 1990 was 26.7 percent.⁷ Much of the increase in tuition revenues at private colleges and universities has been plowed back into undergraduate aid; at all but a handful of the very wealthiest privates, the vast majority of undergraduate financial aid dollars come largely from tuition revenue.

⁵ U.S. Department of Education (2010), tables 249 and 253

⁶ *Trends in Faculty Status, 1975-2007* available at (www.aaup.org/pubresearch/)

⁷ National Association of College and University Business Officers (2009) (2010)

The wealthiest and most selective privates, which have no problems achieving their desired enrollment levels, dramatically increased the generosity of their financial aid policies during the period in response to evidence that relatively small fractions of their students were coming from lower- and lower middle-income families⁸; to the rapid growth rates in their endowments during much of the period, which when coupled with their relatively low endowment spending rates, led to pressure from the U.S Senate Finance Committee for them to increase endowment spending on financial aid; and to dramatic increases in the financial need of their applicants because of the decline in family incomes and asset levels after the financial collapse in 2008. Other private institutions, such as many of yours, which use need based and merit aid to craft their classes and to achieve desired enrollment levels, found that market forces do matter; competition from lower priced public institutions along with stagnating real family income levels during much of the period, and then the decline in family incomes and assets after the financial collapse, dramatically increased their need to increase grant aid and offer tuition discounts to both fill all their seats and to achieve desired class composition in terms of student selectivity and other characteristics.⁹

In public higher education, tuition increases have barely offset a long-run decline in per full-time equivalent student state appropriations. State appropriations per full-time equivalent student at public higher educational institutions averaged \$6,454 in fiscal year 2010; at its peak in fiscal year 1987 the comparable number (in constant dollars) was

⁸ Supiano and Fuller (2011)

⁹ While tuition levels rose in percentage terms by more at the 4-year publics than they did at the 4-year privates during the period, because tuition levels were so much lower at the publics at the start of the period, dollar increases in tuition were much larger at the privates and the difference between public and private tuition levels (in real terms) increased during the period

\$7,993; a decline of 19 percent.¹⁰ Even if one leaves out the “Great Recession,” real state appropriations per full-time equivalent student were still lower in fiscal year 2008 than they were 20 years earlier. Overall, the sum of net tuition revenue and state appropriations per full-time equivalent student at the publics was roughly the same in real terms in fiscal year 2010 as it was in fiscal year 1987.¹¹

Another factor responsible for the decline in the share of faculty that is full-time tenured and tenure-track is that academic institutions have changed how they allocate their resources. The share of institutional expenditures going to faculty salaries and benefits in both public and private institutions has fallen relative to the share going to nonfaculty uses such as student services, academic support, and institutional support.¹² Your institutions have not been immune to these changes. Some observers have attributed these changes to administrative bloat and the declining influence of the faculty on decision making at universities.¹³ My own research suggests, however, that student service expenditures have an important positive impact on persistence and graduation rates, especially at institutions whose entering students have lower entrance test scores and that have a proportionately large number of Pell Grant recipients. So I would urge you to be cautious about reducing expenditures in the student service area.¹⁴

After experiencing the collapse of financial markets in 2008 and the great recession, many universities have hired external consultants to advise them on how to reduce their administrative costs and are taking serious steps to do so. My own university, for example, is well on the way to reducing the administrative costs on its Ithaca campus

¹⁰ State Higher Education Executive Officers (2011), figure 3

¹¹ State Higher Education Executive Officers (2011), figure 3

¹² Desrochers, Lenihan and Wellman (2010)

¹³ Benjamin Ginsberg (2011)

¹⁴ Ehrenberg and Webber (2011)

by \$75 to \$85 million a year; this represents 5 to 6 percent of its base annual operating budget (excluding external research funding). (<http://dpb.cornell.edu>). I must caution, however, that one time reductions in administrative costs will not slow the rate of tuition increases; continuous reductions in costs will be required to do that and there are most likely limits to the savings that can be achieved through administrative cost reductions.

As a trustee of the SUNY system, I am very proud of the efforts that our system of 64 institutions is taking to reduce administrative costs by centralizing activities where possible (purchasing, library acquisitions, information systems) to take advantage of economics of scale and by pushing campuses to achieve efficiencies by sharing back office functions such as registrar, human resources and finance, across campuses. All of these efforts are being made to devote the increasingly scarce system resources to our core education and student service missions.

Of course campuses do not have to be part of the same system to both achieve economies of scale in purchasing and to share back office services. One notable example, which includes a number of CIC members, is the Wisconsin Association of Independent Colleges and Universities Collaboration Project. Since 2002, it has organized and administered more than 35 cost-savings programs and “back office” administrative services for its members in areas including employee benefits and technology infrastructure (www.waicu.org/collaboration). Another is the Coalition for College Cost Savings (www.thecoalition.us), which is comprised of non profit higher education member organizations and is dedicated to improving processes and reducing administrative costs through collaboration, primarily through the purchasing marketplace.

Furthermore, the core academic mission of your institutions is also an area that is ripe for collaboration. While Ezra Cornell is famous for having said “I would found an institution where any person can find instruction in any study”, the reality of Cornell University, and even more so for smaller private institutions, is that it is impossible for any institution to find the resources to fully staff any area of study. Institutions in close geographic proximity have long realized that sharing academic resources is a way to both hold down cost and improve access to curriculum for their students. So, in the Pioneer Valley of Massachusetts, students from Amherst, Hampshire, Mt Holyoke, and Smith Colleges, and the University of Massachusetts can take classes at any of the five institutions. Similarly in the Philadelphia area, students in the Tri-College Consortium - Bryn Mawr, Haverford and Swarthmore Colleges - can take classes at any of the institutions. The sharing of academic resources in each of these consortia is facilitated by the provision of bus service between the campuses.

More generally, modern technology permits the sharing of academic resources between institutions that are not even located in the same geographic area. I teach a class each fall on the “Economics of the University” simultaneously, using two-way compressed video over the internet, to Cornell students in Ithaca and in our Cornell-in-Washington program, over 300 miles away. Several years ago, to demonstrate how resources could be shared across institutions, I similarly simultaneously taught my class to Cornell and Binghamton University students.

Another example, which involves CIC members, is the virtual classics department, Sunoikisis (www.chs.harvard.edu/sunoikisis). Originally founded in 1995 by a set of classics departments at small liberal arts colleges that were members of the Associated

Colleges from the South, these institutions formed an alliance (initially funded by the Andrew W. Mellon Foundation) to share resources. None of their departments had more than 3 or 4 faculty members which greatly limited the range of classes they could provide to students. But through the use of synchronous and asynchronous technology, students from multiple colleges can now take classics courses at any of the member institutions and the range of course offerings available to students at each institution has dramatically expanded. Over time, membership and “ownership” of the organization has changed; today there are 13 member departments, 10 of which are CIC institutions. Sunoikisis is much more than collaborating on classes; it includes undergraduate research symposia, as well as field work opportunities in Turkey. Simply put, it allows classics majors at these small liberal arts institutions to get access to the same opportunities they would have at a major research university, but without losing the small class feel of a liberal arts college.

A final example is the Online Consortium of Independent Colleges & Universities (www.ocicu.org), a consortium of over 80 institutions; many of which are CIC members. Hosted by Regis University, it allows institutions to both provide and subscribe to courses offered by other member institutions in a wide variety of areas

All of the changes I have discussed so far are occurring at a time when American higher education is facing enormous pressures. As Claudia Goldin and Larry Katz (2008) have stressed, our nations’ economic growth and prosperity during the 20th century was driven by our leading the world in terms of the share of our population that had college degrees. But other nations have overtaken us and today we rank no higher than 12 among 36 developed nations in terms of the share of our young adult population with college

degrees.¹⁵ The groups in our population that are growing most rapidly, people of color and people from relatively low income families, are the groups that historically have been underrepresented in higher education. Improving access to higher education and persistence to college graduation for members of these groups and for all Americans is essential for our nation's prosperity in an increasingly international competitive world where economic growth is based on a knowledge-economy. Concerns that high rates of tuition growth will prevent us from achieving our goals, coupled with the decline in income and assets caused by the great recession and the collapse of housing markets are putting pressures on private and public higher education institutions to limit their rates of tuition increases.

Public higher education institutions, in which the vast majority of American undergraduate students are educated also faces pressures to increase enrollments, and persistence and graduation rates at the same time that their state support is continually being cut back. Because of these pressures, much more attention than in the past has been directed to relatively low cost public 2-year colleges in recent years, both by the Obama administration and the states. In 2009, 54% of all first-time freshman at public institutions and 40% of all first-time freshmen nationwide were enrolled at public 2-year colleges.

Public higher education systems in a number of states are working to improve the flow of students from their two-year colleges to their four-year colleges. Strategies they are using include common course numbering across institutions, explicit articulation agreements, dual admissions programs, and providing much more detailed information on

¹⁵ Lewin (2010)

which two-year college classes fulfill both general education requirements and requirements for specific majors at different four-year colleges within the system.

Perceptive leaders of private academic institutions should realize that growing enrollments at public 2-year colleges provide an opportunity for them to compete to enroll graduates of these colleges who seek 4-year degrees. Smith College in Massachusetts, for example, has long had articulation agreements with a number of two-year colleges around the country, the most prominent being Miami-Dade. A number of other selective private institutions are actively involved, with the support of a Jack Kent Cooke Foundation's Community College Transfer Initiative, to expand their enrollments of graduates of community colleges; one of your members, Bucknell, is part of this initiative. To take another example, the public Community College of Philadelphia has dual admissions programs with 11 private colleges and universities in the area (www.ccp.edu); five of these institutions are CIC members.

Pressure is also put on the publics through the call by governors and state legislatures for their higher education systems to use faculty resources more efficiently. In Texas, data have been published showing the revenue generated by each faculty member at each public institution. Reports based on these data show the number of student credit hours taught by, and the external research revenue generated by, each faculty member, and then contrasts these to the salary and benefit cost of the faculty member.¹⁶ Such "accounting methods" give no weight to the quality of what is delivered to students in the classroom and, if seriously used by decision makers, would provide an additional incentive for public academic institutions to increasingly substitute cheaper

¹⁶ Ehrenberg and Webber (2010)

adjuncts and full-time non tenure-track faculty for tenure track and tenured faculty members.

This pressure being placed on the publics may prove to be an advantage for CIC member institutions concerned with the quality of the education you provide; in the main you believe that quality is enhanced with small classes and a large share of tenured and tenure track faculty. A considerable body of research, including work that I did with a former student Liang Zhang, has concluded that, on balance tenure track and tenured faculty enhance the persistence and graduation rates of students at both 2-year and 4-year institutions.¹⁷ If I were a CIC president, I would repeatedly emphasize the quality dimension of your students' experiences and how your persistence and graduation rates compare to those of publics whose student profile is similar to yours.

Another problem faced by the publics is the pressure being placed on them to serve as engines to enhance employment and tax revenues in their states. Public research universities are being asked to provide research findings that will lead to the development of new technologies that will stimulate job creation. All public academic institutions are facing pressure to produce graduates in fields that will yield higher earnings and hence higher tax revenues for the state. Florida's Governor, Rick Scott, for example, has taken the position that state appropriations to Florida's public higher education institutions should focus on educating students in fields that will lead to more highly paid employees, such as math and sciences, rather than in the humanities.¹⁸

¹⁷ See, for example, Ehrenberg and Zhang (2005), Bettinger and Long (2007), Eagan and Jaeger (2009), Jaeger and Eagan (2009) and Jacoby (2006). In contrast Bettinger and Long (2010) find that in certain professional fields, adjuncts may enhance students' likelihood of taking additional classes in a field.

¹⁸ "Florida Governor Wants Job –Placement Data from State Universities" (2011)

The earnings of graduates should be considered by public funders and by students contemplating college study. But it is not a trivial task to match up how the earnings of graduates compares to their majors; for example, applicants for business, law, and medical schools - three professional programs that historically have offered the promise of high earnings for graduates – are not required to have math or science undergraduate degrees. Moreover, there are also many socially important occupations, such as nursing, social work, and teaching, that offer college graduates relatively low earnings. If one values degrees in a field only by the earnings of graduates one runs the great risk of under producing trained people in these important fields.

As an economist, I certainly believe that money matters, but it is not the only thing students should be thinking about in making career decisions and that states should be thinking about in making funding decisions for their public institutions.. Indeed, as Nan Keohane stressed in her talk to you last night, a strong case can be made that a liberal arts education is the best way “to develop critical and integrative thinkers, productive and creative employees, committed and compassionate citizens, and happy and healthy human beings”.

In the years ahead CIC member institutions will face pressures from parents and potential students to provide education that will lead to future employment prospects. But you will not feel the additional pressures that public institutions will feel because of their relationships to their states. Assuming that the trustees of your institutions share your views about the importance of liberal education, you will have much more freedom to make this case to potential students than your public counterparts will have; you should take advantage of this freedom

A final important change that has occurred is the growing private for-profit higher education sector, which now enrolls almost 10 percent of all students, and has attracted primarily adult learners interested in education leading to careers. The largest “players” in this sector, including the University of Phoenix, have been among the leaders in restructuring methods of delivering education through the use of technology to improve learning and reduce costs; they have also been among the leaders in reducing reliance on tenured and tenure-track faculty, seeking to measure learning outcomes, and evaluating instructors based upon what their students learn. Notable efforts from the nonprofit sector to restructure methods of delivering education include the work of the National Center for Academic Transformation (<http://www.thenatcat.org>) and the Open Learning Initiative at Carnegie Mellon University (<http://oli.web.cmu.edu/openlearning/initiative>).

The NCAT and Open Learning Initiative efforts have taught us (through rigorous evaluation designs) that it is possible to use information technology to simultaneously improve learning outcomes and reduce costs in a variety of types of academic institutions and a variety of types of introductory and remedial classes. The NCAT efforts tend to focus on replacing lectures with interactive computer-based learning resources, such as tutorials, exercises, and frequent low-stakes quizzes, as well as individual and small group activities. Other points of emphasis include designing classes around mastering a set of learning objectives (a big focus of the for-profits) and providing on-demand help often in computer labs or online, staffed by a mixture of faculty, graduate assistants, peer tutors or course assistants (who trouble shoot technical questions, monitor student performance and alert instructors to difficulties with teaching materials). Some of the

cost reductions come from a reduced reliance on costly full-time faculty and the NCAT approach also enables institutions to leverage their best teachers most effectively. While the advantages of this approach may not be obvious to CIC members that do not have lots of large classes, once one thinks about pooling resources across institution, including those for course development, the NCAT approach may become more attractive.

Looking to the Future of American Higher Education

Many of us will bemoan the decline of a golden age of American higher education, with its heavy reliance on tenured and tenure-track faculty. However, higher education is not immune to economic forces. The pressures that public and private colleges and universities face to expand enrollment, to increase graduation rates, and to limit future cost increases will likely only exacerbate the decline in full-time tenured and tenure-track faculty. Increasingly, academic leaders realize that how we teach our students must change, especially for remedial and introductory level classes, and that technology must be employed to improve learning outcomes and reduce the per student costs of delivering instruction (Stripling, 2011) .

I am not noted for my ability to forecast the future, but I will conclude with some personal speculations. The leading private liberal arts colleges and the wealthy private and flagship public research universities are in a world of their own. They will have access to the resources necessary to maintain full-time tenured and tenure track faculty. They will increasingly employ technology in introductory-level classes in an effort to expand active learning and reduce costs, but in their case much of the cost savings will be directed to enhancing the quality of upper-division classes and furthering the research enterprise.

At research universities, the use of full-time nontenure track faculty will likely continue and increase. For at least some new Ph.D.'s the combination of the pay levels at these institutions, their relatively low teaching loads (compared to other types of institutions), the low or nonexistent research demands, the possibility of rolling multi-year contracts, and the attractions of working at a large university will suffice to keep these non-tenure-track position attractive. One result of this shift will be to free up more of the time of tenured and tenure-track faculty for research.

At all other academic institutions, including many CIC members, for financial reasons, an ever-increasing share of faculty will not have doctoral degrees and will not be full-time on tenure-track lines. The use of technology and people in non-faculty positions (like student assistants) to reduce costs and increase learning in remedial and introductory level classes will likely occur much more rapidly at these institutions. As the share of full-time tenured and tenure-track faculty dwindles, this group will inevitably play a lesser role in the governance of these higher education institutions

For all academic institutions, pressures for accountability surely will increase; academic institutions are increasingly being asked to provide information on assessing student learning outcomes as part of the accreditation process. The recent research by Arum and Roksa (2011) that concluded that very little learning occurs in higher education for a large proportion of American students surely will add to these pressures. As such, one might expect to see increased pressures, especially in remedial and introductory classes, to evaluate faculty, at least partially, by their students' outcomes, as the for-profits do. This will put additional stresses on faculty/administration relations and

faculty governance, especially at public campuses where collective bargaining contracts may specify faculty evaluation processes.

Few students who enter a Ph.D. program do so for the promise of financial rewards: other professional schools and alternate careers often promise higher annual earnings. Instead, students considering a Ph.D., especially those not considering degrees in science and engineering fields, have historically done so with the dreams of becoming a tenured faculty member, and then pursuing a combination of research and teaching while participating in the governance of an academic institution. However, obtaining a Ph.D. has already become a less attractive option in many fields, given the lengthening periods of time to complete the degree and the low levels of tenure-track hiring in the academic job market in recent years. As the share of faculty positions that are not on the tenure-track, and perhaps not full-time either continues to increase, along with the high fraction of such positions staffed by faculty without a doctorate, this will likely further discourage American college students from going on for Ph.D. study.

Finally, “net price calculators”, which every academic institution is now required to have on its Web page, offer the promise of providing more transparency about the true costs of college to potential students and their families. They also offer the possibility that some pressure will be taken off of institutions to limit tuition increases, if the public becomes more aware of how large typical tuition discounts are. However, these “calculators” typically can provide accurate information only in the small number of cases in which institutions have “mechanical” needs-based or merit-based financial aid policies and so pressures to reduce tuition increases probably will continue to occur.

A few institutions have dramatically announced their intent to cap tuition increases at lower rates than they have increased in the past, for example Middlebury now has a policy of limiting tuition increases to one percent a year more than the rate of inflation, and a few others, such as Sewanee, have announced plans to cut their posted tuition levels and to shift their focus from merit to need-based aid policy.¹⁹ Whether either strategy will benefit an institution in the short or long runs is an open question.

¹⁹ “Starting to Worry” (2011)

References

- American Association of University Professors, *Academe* (March/April 2011)
(www.aaup.org)
- Arum, Richard and Josipa Roksa. 2011 *Academically Adrift: Limited Learning on American Campuses*. Chicago: University of Chicago Press
- Archibald, Robert B., and David H. Feldman. 2011. *Why Does College Cost So Much?* New York: Oxford University Press.
- Baum, Sandy, and Jennifer Ma. 2010. *Trends in College Pricing 2010*. New York: The College Board
- Bettinger, Eric P. and Bridget Terry Long. 2005. "Do Faculty Serve as Role Models? The Impact of Instructor Gender on Female Students", *American Economic Association Papers and Proceedings* 95 (May): 152-157
- Bettinger, Eric P., and Bridget Terry Long. 2007. "The Increased Use of Adjunct Instructors at Public Universities: Are We Hurting Students" In *What's Happening to Public Higher Education*, ed. Ronald G. Ehrenberg, 51-70. Baltimore: The Johns Hopkins University Press
- Bettinger, Eric. P., and Bridget Terry Long. 2010. "Does Cheaper Mean Better: The Impact of Using Adjunct Instructors on Student Outcomes." *Review of Economics and Statistics*, 92(3): 598-630.
- Brewer, Dominic J., Edie, Eric E., and Ronald G. Ehrenberg. 1999. "Does it Pay to Attend an Elite Private College? Cross-Cohort Evidence of the Effects of College Type on Earnings." *Journal of Human Resources* 34(1):104-123

Dale, Stacy, and Alan B. Krueger. 2002. "Estimating the Payoff to Attending a More Selective College: An Application of Selection on Observables and Unobservables".

Quarterly Journal of Economics 117(4): 1491-1527

Dale, Stacy, and Alan B. Krueger. 2011. "Estimating the Returns to College Selectivity over the Career Using Administrative Earnings Data" *National Bureau of Economic Research Working Paper* No. 17159. Cambridge MA: National Bureau of Economic Research

Desrochers, Donna M. et. al. 2010. *Trends in College Spending: 1998-2008*. Washington DC: Delta Cost Project (<http://www.deltacostproject.org>) (accessed on March 25, 2011)

Eagan, M. Kevin, and Audrey J. Jaeger. 2009. "Effects of Exposure to Part-Time Faculty on Community College Transfer". *Research in Higher Education* 50 (2): 168-188.

Ehrenberg, Ronald G. 2002. *Tuition Rising: Why College Costs So Much*. Cambridge MA: Harvard University Press.

Ehrenberg, Ronald G. 2003. "Reaching for the Brass Ring: How U.S. News & World Report Shapes the Competitive Environment in U.S. Higher Education", *Review of Higher Education* (Winter)

Ehrenberg, Ronald G. 2005. "Method or Madness? Inside the USNWR Rankings", *Journal of College Admissions* (Fall)

Ehrenberg, Ronald G. 2006. "The Perfect Storm and the Privatization of Public Higher Education". *Change* 38(1): 46-53

Ehrenberg, Ronald G. Ed. 2007. *What's Happening to Public Higher Education? The Shifting Financial Burden*. Baltimore: The Johns Hopkins University Press

Ehrenberg, Ronald G. 2010. "The Economics of Tuition and Fees in American Higher Education". In *The International Encyclopedia of Education 3rd ed.* Vol. 2 Eds. Barry McGraw, Penelope Peterson, and Eva Baker, 229-234, Oxford UK: Elsevier

Ehrenberg, Ronald G., Pieper, Paul J., and Rachel A. Willis. 1999. "Do Economics Departments with Lower Tenure Probabilities Pay Higher Faculty Salaries?" *Review of Economics and Statistics* 80 (4): 503-512.

Ehrenberg, Ronald G., Rizzo, Michael J., and George H. Jakubson. 2007 "Who Bears the Growing Cost of Science at Universities?" In *Science and the University*, eds. Paula E. Stephan and Ronald G. Ehrenberg, 19-35. Madison: University of Wisconsin Press.

Ehrenberg, Ronald G. and Douglas A. Webber. 2010. "Student Service Expenditures Matter?" *Change* 42 (May/June) : 36-39

Ehrenberg, Ronald G. and Liang Zhang. 2005. "Do Tenured and Tenure-Track Faculty Matter?" *Journal of Human Resources* 40 (3): 647-659.

Eide, Eric, Brewer, Dominic J., and Ronald G. Ehrenberg. 2008. "Does it Pay to Attend an Elite Private College? Evidence on the Effects of Undergraduate College Quality on Graduate School Attendance" *Economics of Education Review* 17(October): 371-376

"Florida Governor Wants Job-Placement Data from State Universities" 2011 *Chronicle of Higher Education* (October 21)

Ginsberg, Benjamin. 2011 *The Fall of the Faculty; The Rise of the All-Administrative University and Why It Matters*. New York NY: Oxford University

Goldin, Claudia and Lawrence F. Katz. 2008 *The Race Between Education and Technology*. Cambridge MA: Harvard University Press

Jacoby, Daniel. 2006. "Effects of Part-Time Faculty Employment on Community College Graduation Rates", *Journal of Higher Education* 77 (6): 1081-1103

Jaeger, Audrey J., and M. Kevin Eagan. 2009. "Unintended Consequences: Examining the Effect of Part-Time Faculty Members on Associate's Degree Completion". *Community College Review* 36 (1): 167-194

Jaeger, Audrey J., and M. Kevin Eagan. 2011. "Examining Retention and Contingent Faculty Use in a State System of Higher Education". *Education Policy* 25 (3): 507-537

Lewin, Tamar. 2010. "Once a Leader, U.S. Lags in College Degrees", *New York Times* (July 23): A11

National Association of College and University Business Officers. 2010. *2009 NACUBO Tuition Discounting Study of Independent Institutions*. Washington DC: National Association of College and University Business Officers

National Association of College and University Business Officers. 2009. "Newly Released NACUBO Tuition Discounting Study Survey Report Shows Rates Remain Stable". (<http://www.nacubo.org>) (Accessed on March 25, 2011)

"Starting to Worry". 2011. *Inside Higher Ed* (October 10) (www.insidehighered.com)

State Higher Education Executive Officers. 2011. *State Higher Education Finance: FY 2010*. Boulder: SHEEO.

Supiano, Beckie and Andrea Fuller. 2011. "Elite Colleges Fail to Gain More Students on Pell Grants". *Chronicle of Higher Education* 57 (March 27)

United States Department of Education. 2010. *Digest of Education Statistics 2009*: Washington DC: U.S Department of Education.

Zhang, Liang and Xiangmin Liu. 2010. "Faculty Employment at 4-Year Colleges and Universities". *Economics of Education Review* 29 (4): 543-552

