The Revenue-to-Cost Spiral

in Higher Education

Robert E. Martin

JULY 2009 POPE CENTER SERIES ON HIGHER EDUCATION

The John William POPE CENTER FOR HIGHER EDUCATION POLICY

About the Author

ROBERT E. MARTIN

Robert E. Martin retired in 2008 as professor emeritus at Centre College in Danville, Kentucky, after serving as the Boles Professor of Economics since 1996. He is the author of a book on higher education economics, *Cost Control, College Access, and Competition in Higher Education* (Edward Elgar, 2005). He is the author of 36 articles and has contributed to two books.

Martin received his Ph.D. in economics from Southern Methodist University in 1979 and began his academic career as an assistant professor of economics at Louisiana State University (LSU), where he earned tenure and promotion to full professor. He left LSU to become department chairman at the University of Texas at Arlington (UTA) in 1992. While at UTA, he served as interim dean of the College of Business. He left UTA to become the Boles Professor of Economics at Centre College. Before receiving his Ph.D., Martin worked for seven years in publicly held corporations and as a consultant; he was responsible for mergers/acquisitions, operational budgeting, capital budgeting, and energy studies.

The Revenue-to-Cost Spiral

in Higher Education

ROBERT E. MARTIN

The John William POPE CENTER
FOR HIGHER EDUCATION POLICY

333 E. Six Forks Road
Suite 150
Raleigh, NC 27609
919.828.1400
Fax: 919.828.7455
popecenter.org

ISSN 1935-3510

To the Reader

Higher education has become notorious for its rising operating costs—and rising tuition. Year after year, both have increased faster than inflation.

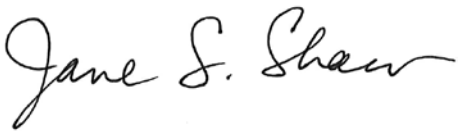
Diagnosis is the first step to cure. This paper explains exactly why those costs are going up. It is my hope that an accurate diagnosis will lead to more effective curatives and ultimately to a remedy.

"The Revenue-to-Cost Spiral in Higher Education," by Robert E. Martin, shows that the incentives—the rewards and penalties—that pervade higher education create enormous upward pressure on costs. They virtually force college and university administrators to seek more revenues rather than cut costs. Yet because of those incentives, greater revenues will actually increase costs.

The best way to grasp this concept is to compare the incentives in higher education, a nonprofit industry, with the incentives in for-profit industries, as Martin does in this paper. Throughout the economy, the pursuit of profit reduces costs, while also providing products and services of ever better quality.

Successful for-profit companies are efficient and, over time, tend to experience lower, rather than higher, costs. Contrasting the for-profit sector with the nonprofit higher-education sector illuminates the problems of our colleges and universities.

Robert E. Martin, who was the Boles Professor of Economics at Centre College before retiring as emeritus professor, is the author of *Cost Control, College Access, and Competition in Higher Education* (Edward Elgar, 2005). He has written 36 articles and contributed to two books. In my view, his insights offer the necessary first step in revolutionizing higher education.



Jane S. Shaw
President
John W. Pope Center for Higher Education Policy

The Revenue-to-Cost Spiral
in Higher Education

Robert E. Martin

The problems we observe in higher education are the product of a complex network of incentives, both the network of incentives within each institution and the set of external incentives created by the market for higher education services. In some cases the incentives work at cross-purposes, and in others they are at odds with the public interest. For most people, the incentives seem to be encased in an impenetrable "black box." Even those who have frequent contact with the academy, such as board members, have a limited understanding of the forces that drive actions in higher education.

Critics and reformers tend to identify symptoms—superficial events that signal underlying problems: Harvard raises its tuition to $48,000 in the midst of a deep recession; more than 80 percent of students at UNC-Chapel Hill receive As or Bs; a University of Florida professor goes to court when she is asked to teach more than one course; faculty members at Hamilton College force an academic center off-campus because they don't like its supposed ideology. Such problems suggest that higher education needs reform. What the critics often ignore is that the incentive structure is what needs to be reformed.

The focus of this essay is on the persistently rising costs in higher education and the role that incentives play in pushing those costs up. Data from the Department of Education's National Center for Education Statistics reveal that the rise in higher education cost exceeds the rise in service-sector prices and even the rise in health-care costs (Martin 2005, National Center for Public Policy and Higher Education 2008). Some people argue that as long as students and their parents are willing to pay tuition, it can't be "too high." That may be true for some students, yet the inability to control costs imperils access to college by many low- and middle-income students, and I will address the general point later.

With this essay, I will lift the lid on the black box and explore the network of incentives that lead to the chronic cost-control problem. I will explore how characteristics of higher education, including its nonprofit legal status, manner of governance, competing objectives, and principal/agent issues all lead to a chronic tendency for both costs and revenues to rise. This essay will reveal a perverse irony that is usually neglected in the literature: Higher revenues induce higher costs, and those higher costs are used to justify future calls for more revenue. I call this process the revenue-to-cost spiral.[1]

Setting the Stage

Every organization, whether it is for-profit, nonprofit, or government, faces the same financial imperative: It must cover its financial outflows (costs or expenditures) with financial inflows (revenues). Although deficits can occur, they cannot be maintained forever.

The one exception to this rule may be governments, which have the power to tax and print currency—although even the power to tax and print has political limits. Every other type of organization must choose a cash-flow strategy that ensures that revenues will at least cover expenditures and service its debt.

For-profit organizations and nonprofit organizations, including colleges and universities, are the two nongovernment types of cash-flow strategies. Society (represented by governments) grants tax-exempt status to nonprofits in order to encourage them to provide goods and services that are "undersupplied" by for-profit firms. Since the social objective is to produce more of these goods, these organizations are not taxed and they are required to be nonprofit so that all resources available are used to

increase the supply of the "undersupplied" good or service.

Higher education is composed of state-supported colleges and universities, nonprofit schools, and a small but increasing number of for-profit schools. State-supported schools are the largest component. While they are part of state governments, they are virtually the same as private higher education in terms of their cash-flow management problems, governance structures, role of third-party payers, and the services they provide. I treat both public and private higher education as nonprofit organizations. This essay does not address the for-profit sector.

The incentive problem in higher education that inhibits cost control is the same incentive problem that leads to scandals and bankruptcies in the for-profit sector and that contributed to the current financial crisis. Examining the incentive problem in business will illuminate the issue in nonprofits and, specifically, higher education. Thus, I begin with for-profit firms, or businesses.

For-profit Firms

Businesses have greater access to capital markets than nonprofits do—they can both borrow money and obtain equity investments.[2] They compete with other firms also seeking capital and are subject to the discipline imposed by market competition for these financial resources.

The principals of a for-profit firm, shareholders and bondholders, tend to hold their stake in the organization as long as it meets market expectations. If the organization exceeds expectations (measured by what the market expects its rate of return to be, adjusted for the risk), its wealth increases and it attracts more investors. If it does not meet expectations, wealth declines, and eventually the organization's existence will be in danger.

A for-profit firm can go out of business even if it succeeds in covering all cash outflows with cash inflows. The firm must at least meet market expectations or investors will move their financial capital to competing firms. Investors continuously measure firms' profitability, seeking the highest rate of return, adjusted by their willingness to accept risk.

The goal of high returns leads to cost control in the firms that survive. Financial analysts, individual investors, financial intermediaries, investment bankers, traditional bankers, regulators, takeover firms, and customers constantly survey, compare, and inspect the performance of the for-profit firm. Since for-profit firms have to compete with other similar providers of goods and services, they must minimize costs and innovate, and the rewards for doing so can be substantial.[3]

These firms are also highly regulated by the federal government, state governments, and by the stock exchanges. One reason for regulation is that many goods and services are "experience goods," whose quality, durability, safety, and efficacy the consumer cannot ascertain prior to purchase. Regulation reduces the ability of firms to take advantage of consumers who do not know the product's true characteristics. Regulation also exists to serve investors. The value of stocks and bonds depends on firms' future profitability, but potential investors do not have as much information about a firm's future profitability as does the firm's management. Regulation is meant to keep the firm from providing misleading financial information. The current crisis in financial markets is an example of the cost associated with misleading financial information.

Nonprofit Organizations

Now let us move to the broad category of nonprofits. These organizations do not have access to equity markets, but they do have access to debt markets; they can borrow money. If they do, they are subject to the discipline imposed by lenders, who write financial restrictions into the debt contract and monitor the nonprofit's financial performance. The nonprofit borrower is not, however, subject to the extensive reporting requirements that go with access to the equity markets.

Since nonprofits do not have access to equity markets, they do not face the competition found in those markets. Instead, they compete with other nonprofits for subsidies or donations provided by third-party payers, which can be taxpayers or private donors. This competition tends to be segmented and less "competitive." Third-party contributors (donors and government agencies) have strong preferences concerning their contributions and do not easily shift their funds. A person prepared to donate $1 million to Princeton is not likely to be willing to donate that money to any other institution, even if another one could put the funds to better use. Nor do charitable donors seek out the highest return for their funds, as do investors in for-profit equity markets. From society's perspective, the private charitable flow is "inefficient" from the outset.[4]

The incentive problem in higher education that inhibits cost control is the same incentive problem that leads to scandals and bankruptcies in the for-profit sector and that contributed to the current financial crisis.

Furthermore, it is very difficult to measure a nonprofit organization's performance and it is difficult to make comparisons between nonprofit organizations. This is in sharp contrast to the for-profit world, where there are hundreds, if not thousands, of financial assets that are a perfect substitute for a particular firm's financial assets.

There is also a difference in investors' and donors' expectations. Because for-profits are run for private gain, investors expect a financial return from their investments. In contrast, third-party donors to nonprofits do not expect a private financial return. Balancing a budget is all that is expected of a nonprofit organization, not accumulating a surplus or profit. Indeed, profits would, at least in theory, interfere with the ideal goal of providing the highest possible quality of service at the lowest possible cost.[5]

Managers of nonprofits are not expected to earn extremely high compensation. Since nonprofits face less competition than for-profits (and thus, financially, the job is easier), the lower expectations for management compensation are appropriate and consistent with the organization's objectives.

Unlike for-profit firms, the nonprofit organization is accountable to a number of groups. It not only serves its "customers" (in the case of higher education, students) but also its third-party payers (taxpayers or private donors). The nonprofit's customers know about the quality of the product or service, but third-party payers have very little firsthand knowledge about quality. For example, the taxpayers who support a state university are subsidizing the cost of students' education. If the students minimize their efforts, spending more time at football games and parties than in learning, or if educators shirk their responsibilities, giving outdated lectures and not showing up for office hours, they may deliver results well below what taxpayers and donors expect. But taxpayers and donors probably do not know about it.

Nonprofit organizations face very little regulation. On the federal level, the Internal Revenue Service enforces standards that nonprofits must meet in order to attain and keep their tax-exempt status. These standards are not high and are weakly enforced. Nonprofits are also regulated by the states, but a 2007 study found a virtual absence of monitoring groups with an interest in nonprofit organizations (Aprill 2007). Some watchdogs, such as Charity Navigator, have appeared in recent years, however.

To summarize, for-profit organizations face intense competition, have a high mortality rate, have access to all capital markets, are subject to extensive regulation, supply private goods and services, have the potential for unlimited rewards to investors, and are run for private gain. Nonprofit organizations face limited competition, have a low mortality rate, have access only to debt markets, rely on third-party donors, face less regulation, supply public goods and/or underserved private goods, try to balance expenditures and revenues, and are run for public benefit.

The Principal/Agent Problem

The separation of owners and managers is an issue common to both nonprofit organizations and for-profit firms. In both cases, the owners (the people who ultimately reap the rewards and pay the costs) and the managers (those who make the day-to-day decisions) are not the same people. Stockholders are the owners of for-profit firms; donors, parents, students, alumni, and taxpayers are the "owners" of higher education institutions.

The important point is that managers, not owners, carry out the day-to-day operations in each organization. The separation between owners (who have a long-term stake in the goals of the organization) and managers (who may not) inevitably leads to the principal/agent problem: Managers may take actions in their own interest at the owner's expense.[6]

The principal/agent problem occurs everywhere. It is not always severe; it may merely reflect the natural tendency that people have to favor their own interests when faced with a choice. Or, alternatively, it may involve deliberate efforts to hide information from the owners.

Voters have a principal/agent problem when they vote for a politician. Voters are the principals who "hire" politicians to make political decisions on their behalf. But politicians are notorious for promising one thing during campaigns and doing something different when they are in office. Similarly, a principal/agent relationship exists between patients and medical doctors and between clients and lawyers.

The severity of the principal/agent problem depends on the manager's ethical standards, the manager's self-awareness, and, most importantly, how easy it is for the principals (the owners) to detect self-rewarding behavior by the agent. Detection depends on how well-informed the principal is about the organization's activities. Clearly, if the principal were as well informed as the agent, the principal would not allow the agent to make decisions that are detrimental to the principal. Information is essential to preventing the agency problem. This is why "transparency" is the key word. A lack of transparency leads to principal/agent abuse.

The Principal/Agent Problem in For-Profit Firms

The public is familiar with the agency problem in for-profit firms. A firm's reported earnings may not reflect the firm's true financial condition because it has used accounting conventions to "manage" those earnings. Thus, one of the primary tasks of financial analysts is to dissect the firm's financial reports to determine the quality of the earnings reported.

For example, the use of stock options for compensation overstates a firm's profits. Although options are a substitute for salary, they are not recorded as an expense, as salaries are. The firm may take other actions that make its earnings look better than they really are, some of them reaching the level of actual fraud.

A firm may accelerate the recognition of sales (recording items as sold after they have been sent to a distributor or retailer even when they are unlikely to be sold). It may capitalize items that should be expensed (capitalized items can be depreciated over time, reducing their reported cost). It may understate the reserves it needs for bad debts (this was a critical component in the subprime mortgage crisis). It may, as the Enron Corporation did, use elaborate off-balance sheet partnerships to hide liabilities. Such abuses led to the 2002 passage of the Sarbanes-Oxley Act, which attempts to reduce the principal/agent problem in for-profit firms by increasing financial transparency.

Chief executive officer (CEO) salaries also illustrate principal/agent abuse. The ratio of CEO pay to an average worker's salary has risen exponentially over the last three decades to levels well beyond the amounts required to get a talented person to do an effective job as a CEO.

Principal/agent problems result in costs that are higher than required to produce the firm's products or services. They are higher because the management is extracting surplus from the firm—surplus that comes out of the profit, which is what the firm is supposed to maximize. This lowers the firm's rate of return.

This lowered return is a signal to corporate raiders. There are scores of takeover firms, arbitragers, or "sharks," if you will, who are constantly searching for poorly managed firms that can be acquired and re-organized for a profit.[7] These corporate raiders impose discipline on management. While they are motivated by private gain, they serve a useful social purpose by policing equity markets.

The Principal/Agent Problem in Nonprofit Organizations

The principal/agent problem is an inevitable part of nonprofit organizations, too. Unfortunately, it is generally neglected. The Senate Finance Committee held hearings on nonprofit regulation in 2004 following a rise in apparent abuses and a decline in IRS audits of nonprofits. The media largely ignored those hearings, which failed to result in new regulation. The lack of media reporting partly reflects the fact that the principal/agent problems are rarely outright financial fraud. But they do exist and they are directly responsible for the cost-control problems we observe in higher education.

Nonprofit managers allocate financial resources, just as for-profit managers do. But because there are no rates of return, it is very difficult to measure performance. Very few people are looking over the nonprofit manager's shoulder, and there is less regulation and media attention.

Yet a misbehaving nonprofit manager extracts surplus from the organization in the same manner as do misbehaving

managers in businesses: by not minimizing costs. There is an important difference, however. The surplus taken by the nonprofit manager does not reduce profit, because there is no profit. Thus, the extra costs stemming from principal/agent problems in nonprofits are difficult to see.

The extra costs stemming from principal/agent problems in nonprofits are difficult to see.

Nonprofits are often evaluated on the basis of their "activity ratio." That is the proportion of every dollar contributed to a nonprofit that actually goes to the designated beneficiaries of the nonprofit—to carrying out its mission. As this proportion increases, the proportion of each dollar going to administrative cost falls.

While this is a good metric, it is far from perfect. The proportion depends on accounting values rather than real values and, as we know from our experience with for-profit firms, accounting values can be manipulated. Because managers can assign expenditures to different cost accounts, the activity ratio can be "managed" just as expenses can be managed by for-profit administrators.

And it doesn't seem to matter a lot, anyway. In a recent study of donor contributions to nonprofits, Peter Frumkin and Mark Kim (2001, 273) found that donor contributions are independent of the organization's "activity ratio." That is, many people give money to organizations whether they rank high on this measurement or not, simply because they want to achieve the goals of the organization. The charitable contributions market is segmented by strong donor preferences.

Furthermore, once the gift is donated, there is no mechanism to reallocate those donations. This is in contrast to business firms. When conditions change, for-profit equity capital moves to a new highest end-use. Charitable donations do not flow to the highest end-use to begin with, and once those funds are donated, they are not reallocated, regardless of how things change. The mechanism for distributing charitable capital is inefficient and leads to huge accumulations of capital in favored institutions.

There is one natural constraint on the principal/agent problem in nonprofits: Managers may choose careers in nonprofits because they want to contribute to public well-being. Unless you believe all nonprofit managers are saints and all for-profit managers are sinners, however, this self-selection by managers is unlikely to resolve the agency problem in nonprofits.

So it is difficult to identify principal/agent problems in nonprofits. The hallmark indicator is an abnormal cost history. Identifying "abnormal costs" is not easy, and apologists for nonprofits tend to contest any definition. Later in this essay I will discuss ways to detect abnormal costs in higher education.

The Principal/Agent Problem in Higher Education

Now let us focus on higher education and the principal/agent problem that is found there. In higher education, the principals are taxpayers, students, parents, alumni, and donors, while the agents are faculty, administrators, and board members. As is always the case, the interests of all of these parties are not perfectly aligned.

One rarely encounters a venal person in higher education. Theft is rare in the ivy halls. Most people working in higher education are dedicated, sincere, and conscientious. But they are also human beings subject to normal human failings.

The particular human failing that leads to the agency problem is the assumption that whatever is in our own interest is also in the institution's interest. Often we are unaware that our interests do not coincide with those of the institution.

I've experienced this lack of awareness myself. As a faculty member at a private liberal arts college, I welcomed lower teaching loads and smaller classes, telling myself that these benefits gave me time and opportunity to improve my teaching and research. I also welcomed liberal sabbatical policies, more research funds, reduced contact hours, and liberal travel funds for much the same reasons.

Similarly, senior administrators can persuade themselves that lavish offices, extensive building projects, expensive public relations events, luxury travel, and high compensation are in the institution's interest. Board members may consider expensive social events to be in the institution's interest. The inability to recognize when our

personal benefit deviates from the institution's benefit leads to excessive costs.

The confusion of personal self-interest and the institution's self-interest is a serious problem because of the nature of university governance. Higher education institutions have a unique governance structure: Control over decisions is shared among boards of trustees, senior administrators, and the faculty. This governance in higher education is not a mere historical accident. Shared governance minimizes transactions costs in higher education, reflects the distinctive technology of teaching and research, and recognizes faculty ownership of the most important human capital asset in higher education, the knowledge and skills that every educated student acquires (Martin 2005, 42–57).[8]

In a perfect world, this shared governance structure would be a natural constraint on the agency problem, just as the market for control constrains the agency problem in for-profit firms. Board members, administrators, and faculty members would monitor each other.

The sad truth, however, is that shared governance in higher education creates competing incentives that operate against the mission of education. Each inside group bears some responsibility for the governance structure's failings. To wit:

Administrators. Administrators artfully play the other two groups off each other. They stand between the two groups, cutting off the communication that needs to take place between board members and faculty. Administrators tell faculty that they cannot involve themselves in issues that the board considers its prerogative because the board will resent the intrusion. They tell the board that it cannot intrude on faculty prerogatives for the same reason. Some administrators prohibit all communication between faculty and board members. They do this because it gives them a free hand.

Board members. Board members agree to these arrangements because they do not understand shared governance and typically come from organizations (such as for-profit firms) where a strict hierarchy prevails. To most board members, talking to faculty about campus issues appears to be a violation of "the chain of command," when in fact it is an essential part of shared governance. Board members don't realize this and have little faith in the arrangement. The board's attitudes are hardened by the extreme behavior of some faculty members.

Faculty. Faculty members have abandoned a comprehensive role in shared governance. Perhaps because the primary allegiance of faculty has shifted to their academic discipline and their colleagues, there is very little institutional loyalty among faculty and they tend to underinvest in campus governance. Instead, they concentrate on curriculum. An unfortunate by-product of this breakdown is that faculty think theirs is the only voice that should be heard when it comes to curriculum. This has a disastrous effect on the formulation of a curriculum that meets society's needs.

The faculty's narrow governance perspective means that they ignore campus financial matters. If faculty members had a better understanding of how their actions affect costs, they would be more cost-conscious and in a better position to prevent the diversion of resources from instruction toward administrative overhead. In a parallel way, if board members were more involved with curriculum decisions, the public's interest would be better served.

Board members do not understand shared governance and typically come from organizations where a strict hierarchy prevails.

Adding to the potential for mischief by agents is the massive amount of wealth controlled by the most prestigious institutions. In 2008, the top five endowments were Harvard, $36.6 billion; Yale, $22.9 billion; Stanford, $17.2 billion; Princeton, $16.3 billion; and the University of Texas, $16.1 billion. There were 77 institutions in that year with an endowment of at least $1 billion (NACUBO 2009). Even though the market crash has reduced these funds, endowments of these magnitudes effectively make

these institutions independent of donors, parents, and alumni—the most important principals. This financial independence gives the agents more freedom of action and less accountability.

Maximizing Reputation

To understand the incentives that operate in higher education, we need to recognize that the chief objective of the producers may not be education per se, but maximizing the school's reputation. Academic discussions often consider maximizing reputation as the chief objective of a college or university,[9] and, in any case, it is a school's most valuable asset. As an institution's reputation increases and it becomes more selective in admissions, alumni contribute more, donors make larger contributions to its endowment, and it has more access to grants.[10] Revenues rise, making the school wealthier, and revenue sources become more diversified, making the school less dependent on tuition and reducing its financial risk.

Alumni benefit from their school's reputation and have an interest in furthering it. A college degree serves as a signal in labor markets, and a person's professional reputation depends in part on the reputation of the institution from which he or she received the last degree. Although any college degree signals that the student has passed a battery of tests that evaluate natural competency, the value of the signal reflects the school's place in national rankings (primarily those of *U.S. News and World Report*). This signal value explains why parents go to extremes to have their children admitted to top-ranked schools. They may not know what value is added, but they believe they know the value of the signal.

The objective of increasing reputation is also in the interests of faculty, administrators, and board members—but in a way that is less beneficial to the school. The rising and diversified revenue stream associated with growing reputation increases the opportunity to extract more agent benefits from the cash flows.

Maintaining and increasing reputation depends on the evaluations made by other academics, such as the academic deans surveyed by *U.S. News and World Report*,[11] and by the general public. For academics, the most important components of reputation are the quality of the students[12] who are attracted to the institution and the institution's scholarly output or research. For the general public, however, the most important component is alumni success. The emphasis that institutions place on recruiting good students and rewarding research—compared with rewarding teaching and helping students get good jobs—suggests that they are more concerned about their reputations among other academics than with the public.

As institutions try to maximize reputation, they must face the fact that the older the institution, the more cachet it will carry; old is good. An institution's reputation is slow to change, although there are some examples of schools, such as New York University and Washington University at St. Louis, that improved their reputations by costly expenditures to attract prominent faculty. Also, as the endowment per student increases, the institution's reputation will increase.

The durability of academic reputations has special implications. The current value added by the institution may not be known for up to a generation in the future—alumni success will not be known for decades after graduation and it is difficult to measure, in any case. Institutions can exploit an established reputation and shirk on adding value. That exploitation can last a long time before it is detected.

Thus, there are two detrimental results of the critical role played by reputation. One is that increasing reputation offers opportunities for mischief by self-interested agents. The other is that such mischief may not be detected for a generation or more.

The Bias against Reform

The incentives in higher education outlined here lead to a bias against reform and a bias toward increasing revenues rather than cutting costs. Consider an organization that provides multiple products or services (it could be a nonprofit such as a university or a profit-making firm such as Honda). Suppose there is a shift in consumer preferences away from one product or service and toward another service. There are two ways the organization can respond: It can shift resources away from the less-favored service toward the more favored one, or it can leave existing resources in place and acquire new resources to increase the service that consumers now want.

The for-profit firm such as Honda must shift resources away from the failing goods or services (such as SUVs when gas prices are high) toward the preferred goods or services (such as smaller cars that use less gas) without seeking new resources. If the firm does not do this, it will not maximize profits. Its risk-adjusted rate of return will be lower, and it is likely to become a takeover target.

There is no such market discipline in higher education. When students lose interest in European languages, for example, the institution could in theory shrink or close down those departments and start programs in languages likely to be more popular, such as Chinese. But this rarely happens. By and large, higher education institutions finance shifts in preferences with new revenue sources rather than by reallocating existing resources. As long as the college or university can raise additional revenue, there is no market imperative for it to reallocate existing resources.

Closing down obsolete or duplicate programs and using the resources freed for innovative programs turns out to be just too much trouble. First, it is painful. (It is painful to businesses, too, but the market for control dictates it at times.) Faculty members fiercely resist attempts to end programs with small enrollments, even though they may be costly to the school. This resistance causes controversy, and administrators and trustees tend to avoid controversies because of their impact on reputation. In other words, reputation maximization leads to a bias against reform and a preference for seeking more revenue.

The rarity of reform is illustrated by the grade inflation issue at Harvard in 2001. It became known that in 2000 half the grades given at Harvard were As or A-minuses, grades that had accounted for only a third of the total grades in 1985. The issue surfaced because a faculty member wanted to reform Harvard's grading practices. Once the news got out, Harvard suffered embarrassment, and its reputation may have suffered as well. Pointing out problems leads to controversies, and controversies damage reputations; hence, reform damages reputations. Even admitting that there are unresolved problems at the institution can damage its reputation. This explains the bias against reform—not just at Harvard but at all colleges and universities.

If an institution's problems go unaddressed, however, students' education suffers. The students may not realize they got less than they paid for until some years in the future. It may take a generation or more before the institution's problems show up as less successful alumni. The negative effect on reputation from unresolved problems is delayed for a long time; hence, to the present generation of administrators, faculty, and trustees, the cost of a diminished future reputation is small, while the cost of a diminished current reputation is high.

Suppose you are a faculty member, an administrator, or a board member. Fixing a serious problem will take years, and it will involve considerable controversy. Alternatively, the problem and the controversy can often be temporized by applying more cash to the institution. With more money, for example, more appealing courses can be added without eliminating those with low registrations. Faculty members, administrators, and board members ask themselves: Do I want my tenure to be known for controversy or to be known for an increasing flow of new funds into the institution? The answer is obvious. More funds trump controversies. Thus, board members hire presidents for their fund-raising abilities and pay lip service to cost control. And they avoid presidential candidates with any hint of controversy.

...reputation maximization leads to a bias against reform and a preference for seeking more revenue.

These incentives adversely select for the wrong kind of campus leadership. The leadership problem extends from top administrators through deans, all of whom are hired for their ability to bring more resources into the college, not how well they use their resources. Any change in the existing distribution of resources must adversely impact some group, who will actively resist that change, and whose resistance will be controversial.

In addition, most administrative staff members have de facto tenure. That is due to the presence of tenure among faculty members and a strong preference for "equity" on most campuses. The resulting rigidities convert most campus expenditures into fixed costs that cannot be changed without considerable controversy. The things that need to be done do not get done.

Attempts to raise quality run into the same rigidities. The typical faculty member is an average teacher or researcher who will have trouble achieving higher quality and thus is resistant, at least passively, to higher demands. Indeed,

the typical faculty member views campus resources as a fixed pie, assuming that more rewards going to exceptional teachers or researchers must come from their share of those resources.[13] The faculty members who benefit from higher standards are the exceptional teachers and researchers. Unfortunately, faculty decisions are made by majority vote and since the direct beneficiaries of quality-improving measure are in the minority, the proposal is unlikely to pass under shared governance.

To summarize, reputations confer prestige, wealth, and a more stable and less risky income; so, it is no surprise that higher education institutions seek a reputation for excellence. Controversies always suggest that something is wrong—and that can only weaken reputation. Therefore, maximizing academic reputation means avoiding controversies, and avoiding controversies means avoiding reform. Since existing resources cannot be moved, the only way the university can finance new program demands is through increases in external revenues—state support, tuition, donor gifts, or federal funds.

The Revenue-to-Cost Spiral

The desire for funding through additional revenues (rather than using revenues more efficiently by reallocating costs) does not mean that spending is completely out of control. It is capped by revenues. A university or college avoids spending more than its revenues.

But administrators have an incentive to spend every dollar that is available. They cannot spend more without appearing incompetent, but spending less would forgo the opportunity to make some members of their constituencies happier. Whatever is available is spent.

Administrators tend to allocate the increases in revenue across all programs, rather than concentrate them on a few (as a business would be likely to do). By choosing the goal of elevating all programs, administrators avoid controversy about who will benefit. Indeed, administrators often attempt to make their university "one of the top twenty research universities in the country." Yet trying to raise all programs at the same time wastes resources and reduces the probability of actual improvement.

Revenues are the lid on expenditures during each period. Since existing resources are frozen in place, the resources required for the new initiatives that arise each year can only come from new revenues. Some of these new initiatives will be driven by competition; most will be the pet projects of faculty, administrators, or board members. In business, new initiatives are chosen on the basis of their expected return. In higher education, priorities are determined by internal politics.

Because all the revenues are spent each year, costs typically increase as a result of these initiatives. If money is given to faculty to start a new program, for example, that additional money will be expected in the next academic year as well—the faculty member is unlikely to go back to the previous salary. Thus, when revenues rise, costs rise to fill the gap between the last period's expenditures and the new revenues. This argument was originally presented in 1980 by H. R. Bowen.

Bowen's revenue-to-cost hypothesis is sometimes compared to another traditional explanation for rising higher education costs, "Baumol's cost disease" (Baumol and Bowen 1967). The two explanations are not competing hypotheses, but Bowen's appears to have more direct relevance to higher education.

In the 1960s, William Baumol noted that service industries experience little productivity improvement and yet wages paid to service workers tend to increase. His explanation was that productivity increases in other sectors are the cause. As industries become more productive, wages go up, making these industries attractive to those outside them. The less-productive industries must pay more to keep their workers.

This argument makes considerable sense when applied to some faculty salaries. Medical, legal, engineering, and business school faculty members have ample employment opportunities outside higher education; as those opportunities increase, colleges and universities have to pay higher wages to attract and retain faculty. The argument seems weak when applied to faculty in the humanities and the arts, however.

Nor does the cost disease argument explain why cost increases in higher education have significantly outpaced cost increases in the rest of the service sector, including health care. Further, reducing teaching loads and shifting service responsibilities from faculty to staff—steps that have been taken over the years—directly reduce productivity in higher education. The cost-disease theory does not explain these, especially since there have been significant technological increases in service productivity since Baumol

formulated this hypothesis in the 1960s. The argument that higher education is a "victim" of productivity improvements by others is unlikely to be the whole story.[14]

Indeed, as the Bowen hypothesis suggests, higher education finance is a black hole that cannot be filled. The relationship between revenues and subsequent costs has a dynamic feedback effect. Higher education responds to higher costs by raising tuition and fees or initiating fund-raising campaigns. But because costs in higher education are capped only by total revenues, there is no incentive to minimize costs. The costs go up in tandem with revenues. The next year, the cycle begins again because the higher costs mean that the new programs must be financed by additional revenues. There is thus a never-ending spiral effect between revenues and cost.

As revenues increase, faculty, administrators, and board members extract more surplus from the cash flows in the form of higher costs and then use those higher costs as justification for more revenue. Imagine the consumer's response if for-profit firms argued they had to raise prices because the surplus that they extracted during the last period (i.e., profit) increased.

higher education costs rose much faster than the inflation rate, faster than the service sector price index, faster than energy costs, and even faster than health care costs (Martin 2005; National Center for Public Policy and Higher Education 2008).

Each fall there is a flurry of news reports about tuition rate increases that exceed the rate of inflation. It has been an annual fall event for at least the past three decades. Higher education has the worst cost-control record in the economy.

Despite the anecdotal and empirical evidence that college costs too much, some argue that as long as students continue to enroll and some elite institutions have waiting lists, college costs cannot be "too high." In other words, college costs will be too high only when students refuse to go to college.

Clearly, some students are unable to go to college or unable to go to the college of their choice each year because of the cost. So, for those students, the cost is obviously too high. For others, current college tuition is close to what economists call the "reservation price" for college tuition—that is, the highest price the consumer is willing to pay. Like price-discriminating monopolists, colleges have been quite

As revenues increase, faculty, administrators, and board members extract more surplus from the cash flows in the form of higher costs and then use those higher costs as justification for more revenue.

A second impact is that increasing student subsidies leads to a corresponding increase in costs. The net effect of more public support for college access is higher costs and increases in tuition that must be addressed with more subsidies. This means that until costs are under control, we cannot significantly increase the access of lower-income students to college. Additional government funds keep providing revenues that, under the current incentive system, increase costs.

Are Higher Education's Costs Excessive?

There is abundant evidence that higher education costs are continuing to go up. Statistical analysis reveals that

successful in extracting enormous amounts of money from consumers who believe that a college education is one of the most valuable assets their children can obtain. But if the high cost captures the present value of the student's future income—in other words, if the student spends all the additional financial value of the college education on the cost of attending—then the student has no financial gain from college, and probably a heavy debt burden. In such a case, a college education is *not* a good investment.

The extraction of "monopoly rents" can be compared to the provision of kidney dialysis. The demand for kidney dialysis is highly price-inelastic, since the alternative is death. People seeking dialysis have a very high reservation price

for this service. A price-discriminating dialysis provider can extract the reservation price from each patient, transferring wealth from the patient to the provider.

Many students and parents are paying close to their reservation prices for a college education. They will continue to go to college as long as tuition and fees are less than or equal to their reservation price. Yet society would not tolerate a for-profit firm that exploited consumer reservation prices in this fashion and at this level.

The fact that students enroll does not imply that college costs are not "too high." An appropriate measure is the difference between current tuition/fees and the competitive cost. Vance Fried (2008), a professor of management at Oklahoma State University, has devised a plan for producing an Ivy League-equivalent education for under $8,000 a year. His estimate has not been seriously challenged, as far as I know. The wealth transfer going from students and their parents to higher education is phenomenal.

Confirming the Revenue-to-Cost Spiral

Correlation, of course, does not imply causation. Two things can be correlated because an unobserved third variable drives them both. However, there is a type of correlation in time-series variables that does imply a special type of causation. The Nobel Prize-winning economist Clive Granger (1969) discovered this relationship, which is known as "Granger causality." The details are of interest only to economists and statisticians, so I will keep the explanation as simple as possible.

Suppose you have two variables, say *A* and *B*, changing over time. If a change in *A* tends to precede a change in *B*, while changes in *B* do not tend to precede changes in *A*, it is said that *A* Granger causes *B*. Time moves in one direction and that is forward. So, if we find we get movement in *B* that follows in time movement in *A*, we can rest assured that the movement in *B* could not have gone back in time and caused the movement in *A*. The causal relationship can only flow from *A* to *B*.

Think of '*A*' as higher education revenues and think of '*B*' as higher education cost. The revenue-to-cost spiral hypothesis suggests revenue increases will "Granger precede" cost increases and that cost increases will "Granger precede" revenue increases. Empirical evidence can never prove that any hypothesis is correct; all one can say is that the evidence is either consistent with the hypothesis or it is not. In an earlier analysis (Martin 2005, 154–160), I found statistically significant Granger causality from revenues to cost and from cost to revenues in both public and private institutions. This causality in both directions provides evidence that a spiral effect is in play.[15]

Breaking the Revenue-to-Cost Spiral

Now that we have identified the revenue-to-cost spiral in higher education, how do we end it? As we have seen, the cause of this spiral is the interaction among agency problems, nonprofit status, and reputation maximization.

Beginning with the principal/agent problem, generically there are three types of solutions:

Providing principals (owners) with more information that is also better organized. Hence, transparency in operations and financial reporting is essential.

Bringing the agent's and the principal's interests into alignment through "incentive compatible" compensation contracts. Pay-for-performance compensation[16] better aligns the interests of agents with the interests of principals than does fixed salary compensation. A significant part of the increase in productivity over the past three decades among for-profit firms is due to the widespread adoption of pay-for-performance compensation.[17] Yet in today's universities, incentive compensation among faculty members is almost nonexistent.

Market-based automatic constraints on agency behavior; that is, relying on the market mechanism to control agency issues. The market for corporate control among for-profit firms (the opportunity to buy out inefficient firms) is an example. Unfortunately, there is no market for control of nonprofit organizations, so the role of the market mechanisms is small.

Transparency

The more information principals have, the smaller the principal/agent problem. For example, the more you know about your own health, the better patient you are and the better able you are to protect your own interest in any health-care decision. It is the same with higher education. Anything that contributes to transparency lowers the agency problem and improves cost control.

The clarity and transparency of reporting in higher education are major issues for both public and private institutions. Better accounting information and better objective measures of actual activities are needed. Some specific examples of the kinds of information that should be available follow. The examples are not exhaustive; other analysts will have additions.

OBJECTIVE MEASURES OF PRODUCTIVITY AND COST CONTROL

Before getting to financial measures, which can be distorted by accounting conventions, let us look at real operations variables. These statistics should be reported and compared over about ten years.[18] The real output and input variables listed below are essential data in any attempt to understand why costs either rise or fall. Without them, you cannot know why costs change.

Here is a partial list of the measures that should be available:

1. Student credit hours generated per full-time equivalent faculty member
2. Student/faculty ratios
3. Teaching loads per faculty member, separating course releases for research from course releases for administrative purposes
4. Average class size
5. Student/staff ratios for all non-instruction activities
6. Proportion of As and Bs (grades given) by academic department.

The data should include the average and the variance for student credit-hours generated, student/faculty ratios, teaching loads, class size, and grades.

Higher education is a labor-intensive service industry, where service quality tends to decline as the student-to-faculty ratio rises. There are limited opportunities for capital and labor substitution, although technical change is increasing the opportunities for substitution. Until science comes up with a "virtual instructor" (not all that far-fetched, actually), the ratio of faculty to each class is fixed at one or more.

Technical change in capital does allow a single instructor to teach more students, holding quality constant. Even email substantially increases student access to faculty outside of class, increasing the opportunity for individual instruction, and on-line instruction has the potential to enable a teacher to teach more students effectively. Institutions make tradeoffs with respect to teaching loads, class sizes, and quality that drive teaching productivity and cost.

The foregoing also applies to the productivity of administrative staff. Outsiders cannot understand what has happened to costs unless they have access to these real variables, which are the result of critical policy decisions that drive productivity and cost.

FINANCIAL TRANSPARENCY

When asked about revenues and expenditures, higher education institutions frequently report budget numbers; that is, projections for the coming year. They should always report actual revenues and expenditures when the year is over, alongside what was originally budgeted for last year.

When discussing campus finances, especially with faculty, administrators avoid doing this; they prefer to use budget numbers rather than actual expenditures. But budgets represent hypothetical priorities, while real priorities are reflected by actual expenditures. There can be significant differences in budgets and actual expenditures.

The most common reason for the differences is that universities often have large salary savings because they have unfilled positions. Funds have been allocated for these positions but not spent, possibly because someone has retired or left and the position has not been filled. These savings give administrators the equivalent of slush funds that they can use for other purposes, with some limitations. Administrators do not like to reveal how these funds are used.

Another problem is that accounting standards allow administrators considerable latitude in deciding where to apply costs. For example, information technology is used in instruction and in administration; the decision to allocate the cost of information technology between instruction and administration is a policy decision. Other things being equal, administrators prefer to allocate as much of these costs to instruction as possible. Doing so makes the institution appear to be spending more on instruction rather than on administration.[19]

In other words, schools "manage"[20] their activity ratios in the same way for-profit firms are known to "manage

Salary savings

give administrators the equivalent of slush funds that they can use for other purposes, with some limitations.

earnings"—by the creative use of accounting conventions. But no researchers dig into these numbers as they do with a publicly traded firm because there is no market for the research. These policies should be a focal point of financial audits, and any changes in these policies should be flagged in the audit and require complete explanation to the governing board.

Another way administrators misallocate resources is by cross-subsidizing programs. Cross-subsidization means that funds from revenue-producing programs are used to prop up programs that do not cover their variable costs. Cross-subsidization is rare in the for-profit world; a firm will shut down the production of a product when the revenue generated by that product does not cover the variable cost[21] of producing the product.[22]

It appears that research universities often use their undergraduate programs to cross-subsidize (that is, support) research and graduate programs.[23] Resources that taxpayers assume are applied to undergraduate teaching wind up supporting research and graduate teaching. Similarly, obsolete programs with few students are subsidized by growing programs, even though those are often hard-strapped to find enough resources to fulfill their mission. Schools cross-subsidize in a variety of ways. Distribution requirements may be a covert way of propping up some departments.

It is not difficult to determine whether a program (or an academic department) is covering its variable costs. These costs consist of faculty salaries and benefits and other costs of instruction. The revenue for a program is equal to the total number of student credit-hours for each time period (such as a semester) multiplied by the tuition and state appropriations per credit-hour plus any grant income generated by the program. The revenue figure minus the variable cost results in the "net revenue generation by the program." If this is a positive number, the program is covering its variable costs. (Large net revenues may be covering overhead.)

Net revenue generation makes financial comparisons among programs possible. Low-net-revenue programs should not necessarily be abandoned (you may not be able to call yourself a university without a German or French language department, for example), but the comparisons make clear what the opportunity cost of these programs might be—what the university is giving up in order to maintain a low-net-revenue program. Net-revenue calculations are not a substitute for nonquantifiable and qualitative judgments about campus resource use; they are meant to be complementary.

This information is very useful in deciding whether or not to expand the number of faculty in a particular department or program. The administrator can take the net revenue generated by the program and divide it by the number of faculty in that program. This gives the net revenue per faculty member. If the net revenue per faculty member is high, adding an additional faculty member may be a good idea. If, in contrast, the program is netting only a small amount of revenue per faculty member, adding a new faculty member would have to be justified on something other than a financial basis. Qualitative arguments are always involved in the decisions to allocate faculty slots; the net revenue per faculty data provides a way of measuring the opportunity cost of those qualitative decisions.

Unfortunately, administrators rarely make these calculations ("better not to know") due to the controversy they might create on campus and due to the constraints they would place on administrators' ability to allocate resources according to their own preferences.

Finally, external auditors are in a unique position to improve or even guarantee transparency. Currently, they are an underutilized resource. External auditors[24] should play a larger role in higher education reform. Auditors have the skill and the access to campus operations that external stakeholders (taxpayers, students, parents, and alumni) do not have. Currently, auditors view administrators and governing boards as clients. In reality, the auditors' true clients are the external stakeholders. The relationship between auditors and campus governance needs to be at arm's length and the auditors should be active agents in campus reform.

Governance Reform

While transparency is essential for reform, it is not sufficient. Changes in governance are required in order to create internal checks on agency abuse and to bring incentives into alignment with social objectives. Governing board members pay insufficient attention to cost-control issues and place too much emphasis on fund raising. Cost control should have at least the same level of emphasis. Indeed, cost control should precede fund raising; the institution should be required to certify its cost-control activities prior to the launch of any fund-raising campaign. All other higher education reform issues, such as education quality, grade inflation, curriculum, and intellectual diversity should have equal footing with fund raising.

In short, the bias against reform that is characteristic of governing boards must be addressed. This can be done by making reform part of reputation enhancement and by making board members specifically responsible for reform.

A crucial step is making direct communication between faculty and board members a regular part of the governing process. Contrary to tradition, the board needs to directly consult with the faculty about curriculum, among other campus issues, and the faculty needs to directly consult with board members about finances and the hiring of senior administrators. These communications should not be under the control of administrators.

The incentive-alignment problem between principals and agents can sometimes be corrected by well-written compensation contracts—as well as worsened by poorly executed ones. Indeed, much of the problem with excessive CEO compensation in the for-profit world stems from trying to use incentive compensation systems to resolve principal/agent problems. The idea was to make the CEO as interested in profit maximization as the shareholders. It was the right idea, but it was corrupted in the implementation, as evidenced by scandals among such companies as Enron, Worldcom, ImClone, and Tyco International.

In colleges and universities, senior administrator contracts, as they currently stand, are driven by fund-raising incentives. Other performance criteria, if any, are loose and subjective. This imbalance in favor of fund raising must be reversed before progress can be made on cost control.

Boards must establish cost-control objectives, and they must be precise enough to insure that there are clear, deliverable results. These compensation deliverables can be improved by greater transparency in reporting and operations. Since many board members come from for-profit backgrounds, they should be familiar with incentive compensation and with how to specify deliverable results.

It is also important to change faculty incentives by making faculty compensation more dependent on cost-control results. One way to do this would be to make the pool from which faculty raises are drawn a function of elevating teaching quality and achieving cost control.

Similarly, incremental pay for performance can lead to higher productivity. Currently, most faculty members are paid full salary as long as they teach the required number of courses each year. This pay is independent of the number of students taught by the faculty member. One member might teach 1,000 students in a year; another, 100 students. Both faculty members are paid full salaries as long as they teach a “full load,” as measured by the number of classes.

Market Constraints on Agency Problems

Given the dominance of reputation and the importance of an institution’s age in the competition for students, the opportunity to introduce market constraints is limited. However, market discipline can be imposed indirectly by encouraging competition from for-profit colleges and universities. The primary obstacles to competition from for-profit colleges and universities are the accreditation agencies and the importance of reputation.

For traditional nonprofit colleges and universities the accreditation agencies are “captive regulators”; that is, the accreditation agencies are controlled by the existing schools, although they are supposed to regulate those institutions. The accreditation agencies are bureaucratic in their approach, and their activities lead to very little reform. Most institutions follow the “self-study” instructions in a pro forma style that gets the paperwork done without making any serious changes on campus—although often at tremendous cost in faculty and administrative time. The periodic reviews are all about process, not results. Accreditation may be a nuisance for

administrators, but it tends to keep out new competitors, especially for-profit schools, which have a harder time meeting the standards that include such metrics as library resources and faculty degrees.

Reputation is also a serious barrier to entry. It takes decades to establish an academic reputation. Overcoming this barrier will require creativity, capital, and patience on the part of entrepreneurs who want to establish an effective alternative to traditional institutions.

Technology may also increase market competition among institutions. Web-based education makes it possible for colleges and universities to overcome geographic restrictions on competition and may also allow exceptional teachers to reach more students. As these teachers reach more students, their productivity increases, and the rewards to superior teaching should arise naturally from market forces.

Conclusion

The principal/agent problem, the nonprofit status of colleges and universities, and the emphasis on reputation maximization lead to a bias against reform, a preference toward increasing revenues, and a revenue-to-cost spiral in higher education. The evidence—both anecdotal and objective—that cost increases are excessive is compelling. The cost increases not only create an unnecessary burden on students, their families, and society as a whole, but they represent a significant wealth transfer from families and the public to higher education.

The bias against reform means that real reform will not come from within higher education. Reform will have to come from the outside. As in a nuclear arms race, actors—in this case, individual colleges and universities—cannot reform unilaterally. Serious cost-control efforts will damage reputations in the short run and make it more difficult to recruit both gifted students and gifted faculty. The reform effort will have to be industry-wide, and that can only come from the outside.

The outside reform program has to involve private groups, state and local governments, and the federal government. The most important federal government contribution to reform would be a significant increase in transparency requirements. The information requirements for tax-exempt status should be increased, and the IRS should conduct more and more-intense audits of these institutions. Further, the information provided to the IRS should be in the public domain immediately and available on the institution's Web site or gathered in a single place.

The federal government can also increase the quantity and the quality of the information reported to the National Center for Education Statistics (NCES). There are serious deficiencies in the current reports; most of the NCES data are financial data, with inadequate information about operations and policy.

For example, there is very little information about staffing in support and administrative offices. An efficiently run institution should be capturing productivity improvements, so that in any category, over time, there should be fewer staff per number of students. Also missing are data on teaching loads, class size, and how faculty members are divided between graduate and undergraduate teaching. The fact that these are not routinely reported by higher education institutions reveals that the institutions themselves do not take cost control seriously.

These government data mandates would provide the leverage that outside groups need to reform higher education and would open the "black box" that surrounds current practice. Partnerships between private outside groups (alumni associations, parents, institutes, and policy scholars) and state governments are likely to be most effective in achieving cost-control reform.

Finally, the revenue-to-cost spiral suggests that cost-control reform must be a prior condition for any increase in higher education funding. If it is not, the increased funding will simply drive costs higher, returning little social benefit. But cost-control reform should not be all stick and no carrot—pay for performance should be a part of cost-control reform, and an institution's reward for successful cost-control reform should be increased funding.

References

Aprill, Ellen P. 2007. What Critiques of Sarbanes-Oxley Can Teach about Regulation of Nonprofit Governance. *Fordham Law Review* 76: 765–94.

Baumol, W. J., & Bowen, W. G. 1966. *Performing Arts: The Economic Dilemma.* New York: Twentieth Century Fund.

Bowen, H. R. 1980. *The Costs of Higher Education: How Much Do Colleges and Universities Spend per Student and How Much Should They Spend?* San Francisco: Jossey-Bass.

Brewer, Dominic J., Susan M. Gates, and Charles A. Goldman. 2002. *In Pursuit of Prestige: Strategy and Competition in U.S. Higher Education.* New Brunswick: Transactions Publishers.

Fried, Vance H. 2008. The $7,376 "Ivies": Value-Designed Models of Undergraduate Education. Center for College Affordability and Productivity, Washington, D.C. Online: **www.centerforcollegeaffordability.org**.

Frumkin, Peter, and Mark T. Kim. 2001. Positioning and the Financing of Nonprofit Organizations: Is Efficiency Rewarded in the Contributions Marketplace? *Public Administration Review* 61(3): 266–75.

Granger, C. W. J. 1969. Investigating Causal Relations by Econometric Models and Cross-Spectral Methods. *Econometrica* 37(3): 24–36.

Holmstrom, B., and P. Milgrom. 1991. Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design. *Journal of Law, Economics, and Organization* 7(special issue):24–52.

James, Estelle. 1990. Decision Processes and Priorities in Higher Education. *In The Economics of American Universities*, ed. Stephen A. Hoenack and Eileen L. Collins. Buffalo, NY: State University of New York Press.

Martin, Robert E. 2005. *Cost Control, College Access, and Competition in Higher Education*. Northampton, MA: Edward Elgar.

Mas-Colell, Andreu, Michael D. Whinston, and Jerry R. Green. 1995. *Microeconomic Theory*. New York: Oxford University Press.

NACUBO (National Association of College and University Business Officers). 2009. *2008 NACUBO Endowment Study.* Washington, D.C.

National Center for Public Policy and Higher Education. 2008. *Measuring Up 2008: The National Report Card on Higher Education*. San Jose, CA. Online: **http://measuringup2008.highereducation.org/**.

Stecklow, Steve. 1995. Cheat Sheets: Colleges Inflate SATs and Graduation Rates in Popular Guidebook. *Wall Street Journal*, April 5, A1.

Varian, Hal R. 2006. *Intermediate Microeconomics*, 7th ed. New York: W.W. Norton & Company.

Notes

1. This essay builds on the work of Bowen (1980). A more detailed discussion of the economic forces influencing higher education will be presented in a forthcoming book.
2. The terms "firm," "corporation," and "business" will be used as equivalent expressions in this paper. Further, all of these terms are meant to represent publicly held organizations whose shares are traded on organized stock exchanges. Privately held firms and corporations do not have a separation of ownership and control.
3. A comprehensive discussion of the theory of the for-profit firm can be found in Varian (2006).
4. The term "inefficient" is used cautiously. It refers only to the public good character of the donations, since they are not allocated on the basis of productivity. If the donations were not tax-deductible, then the public would have no stake in the allocation and the donations would represent a private expenditure representing individual preferences. It is the tax shelter that gives the public a seat at the table.
5. Profit is a surplus that is retained and therefore it is not used for the targeted beneficiaries of the nonprofit. Hence, in order to benefit the maximum number of recipients, profit must be zero.
6. See Holmstrom and Milgrom (1991) and Mas-Colell, Whinston, and Green (1995, 471–510) for a more detailed discussion of the principal/agent problem.
7. When the market value of the firm's real assets (buildings, equipment, etc.) is greater than the market value of the firm's debt and equity, the firm is worth more dead than alive. An arbitrager buys the firm's equity, sells the assets, pays off the debt, and has a profit in the end.
8. Faculty members have the knowledge; the institution owns the physical assets.
9. The traditional objective for higher education institutions found in the literature is to maximize reputation (see James 1990). A more complete discussion of objectives in higher education can be found in Martin (2005) and Brewer, Gates, and Goldman (2002).
10. Brewer, Gates, and Goldman (2002) offer a complete and very accessible discussion of structure and strategy in the higher education hierarchy.
11. *US News and World Report* surveys academic deans about the quality of other institutions as part of its ranking system.
12. As measured by GPA, class rank, and SAT/ACT scores.
13. This is a common perception among faculty members, although it can be argued that everyone benefits from a program's improved quality since this drives all wages higher. Unfortunately, for too many faculty members, it is relative wages that matter.
14. If higher education passively responds to cost increases generated elsewhere, its costs should decline during recessions. History tells a different story; colleges and universities raise tuition during recessions and increase their expenditures. Today, there is considerable concern that public institutions will raise tuition in response to state budgetary problems even as our most serious concern about the economy is that we may be entering a deflationary period.
15. More research needs to be done on this issue. A complete approach would be to do Granger causality tests for individual institutions in a cross-section and time-series format.
16. Pay for performance in nonprofits would make salary dependent on performance metrics such as the activity ratio, the number of clients per staff member, or benchmarked performance metrics from other nonprofits.
17. Downsizing, outsourcing, re-engineering, and focus on "core competencies" during the 1980s and 1990s led to a rebirth of productivity growth during those decades. Incentive compensation—moving away from flat salaries to performance-based compensation—had an instrumental role in this productivity increase.
18. The data and the time period must be sufficient to enable analysts and researchers to understand what is happening to real variables within the institution. Time periods less than five years are insufficient.
19. In this case, the activity ratio is the proportion of each dollar spent that actually goes to instruction.

20. See Stecklow (1995).

21. The term “variable cost” is actually a misnomer when applied to higher education. Due to tenure and the tendency of institutions to grant de facto tenure to staff, very few costs are variable in higher education. It takes very unusual circumstances and an incredible effort to lay off people. Over my thirty years in higher education, I recall this having happened only through attrition.

22. There are, of course, some explicit strategies that resemble cross-subsidization, such as selling X-Box consoles at less than a profitable price in order to sell profitable X-Box game cartridges.

23. The primary evidence for this perception is the large number of undergraduate courses taught by graduate students at research institutions.

24. Every public university is subject to audit by the appropriate state government auditors. Most private universities have external auditors.

The John William POPE CENTER
FOR HIGHER EDUCATION POLICY

ABOUT THE POPE CENTER

The John William Pope Center for Higher Education Policy is a nonprofit institute dedicated to improving higher education in North Carolina and the nation. Located in Raleigh, North Carolina, it is named for the late John William Pope, who served on the Board of Trustees of the University of North Carolina at Chapel Hill.

The center aims to increase the diversity of ideas taught, debated, and discussed on campus, and especially to include respect for the institutions that underlie economic prosperity and freedom of action and conscience. A key goal is increasing the quality of teaching, so that students will graduate with strong literacy, good knowledge of the nation's history and institutions, and the fundamentals of mathematics and science. We also want to increase students' commitment to learning and to encourage cost-effective administration and governance of higher education institutions.

To accomplish these goals, we inform parents, students, trustees, alumni, and administrators about actual learning on campus and how it can be improved. We inform taxpayers and policy makers about the use and impact of government funds, and we seek ways to help students become acquainted with ideas that are dismissed or marginalized on campuses today.

Jane S. Shaw is the president of the Pope Center. She can be reached at shaw@popecenter.org. More information about the Pope Center, as well as most of our studies and articles, can be found on our Web site at **popecenter.org**. Donations to the center are tax-deductible.

The Revenue-to-Cost Spiral
in Higher Education

Robert E. Martin

Higher education is notorious for its rising operating costs—and rising tuition. This paper explains why both are increasing faster than inflation. It shows that the incentives—the rewards and penalties—that pervade higher education create upward pressure on costs.

They virtually force college and university administrators to seek more revenues rather than cut costs. Yet because of the incentives in the system, greater revenues will actually increase costs. To convey this concept, Martin contrasts the incentives in higher education, a nonprofit industry, with the incentives in for-profit industries.

The author, Robert E. Martin, who was the Boles Professor of Economics at Centre College before retiring as emeritus professor, wrote *Cost Control, College Access, and Competition in Higher Education* (Edward Elgar, 2005). He is the author of 36 articles and has contributed to two books.

This paper is published by the John W. Pope Center for Higher Education Policy, a nonprofit institute dedicated to improving higher education. The paper—along with other Pope Center research papers—is available on the center's Web site at **popecenter.org**.

The John William POPE CENTER
FOR HIGHER EDUCATION POLICY