How Markets Drive Finances in U.S. Private Colleges and Universities

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Adopting an appropriately broad definition of "market revenue" is crucial for understanding how markets drive finances in US colleges and universities. Consistent with the non-profit model[1] mentioned by Bob Zemsky in his keynote address, I will define pure market revenue as "income from transactions in which an outside entity pays the institution to deliver a product or service." The definition encompasses student tuition payments, revenue from research contracts and grants where specific deliverables are required, and license fees for intellectual property. Such transactions require a quid pro quo because the purchasing entity's objectives ("mission" in the mission-market model) are not necessarily aligned with those of the institution. For purposes of this paper I'll also define "quasi-market revenue" as revenue from transactions where objections are partially aligned but the need for some quid pro quo remains. Grants that lack specific deliverables and many kinds of donations (e.g., where a building or chair is named for the donor) fall under the quasi-market definition. This paper lumps pure and quasi-market revenue under the single heading of "market revenue."

The essential characteristic of market revenue is that the counterparty wants the institution to deliver a particular outcome for which he/she/it is prepared to pay. Usually the counterparty can select from a number of alternatives for obtaining the desired outcome, alternatives offering differing performance and price levels, which leads to the competition we associate with markets. This contrasts with "non-market revenue," usually from government, where the entity has assumed responsibility for funding the institution's core needs. Non-market revenue may rise or fall depending on the funder's finances, the institution's needs and performance, and the needs and performance of other claimants. However, governmental funding agencies seldom if ever walk away from the institutions for which they are responsible.

Private Institutions' Revenue Mix

Tuition and fees account for about two-thirds of private institution income, the largest proportion by far of any revenue source.[2] This revenue stream aggregates the decisions of large numbers of "consumers" who operate more or less independently in the educational marketplace. Universities must consider "demand functions," which sum up the preferences of these consumers, when setting their tuition and financial aid levels. "Selective" schools, those that receive many more applications than there are places available, balance revenue net of financial aid with their desire to "shape the class." For example, higher tuition rates or lower financial air offers generate more net revenue but may fail to attract students with the desired characteristics. Non-selective schools have a more serious problem: getting enough students with threshold entry qualifications to *fill* the class. Either way, institutions confront an increasingly competitive marketplace that shapes much of what they do. This is why "Enrollment Management" offices have professionalized demand forecasting and management at many schools during the last two decades.

Proceeds from current and past donations provide the second-largest funds sources for private institutions. Private gifts, grants, and contracts to support operations provide about 8 to 15 percent of current-fund revenue, while spending from endowment provides another 6 to 7 percent on average—or as much as 20 percent at the most well-endowed institutions. (A third category, gifts for plant, provides support for construction projects.) The story here is the same as for the other revenue sources: increasing reliance on gifts has led to more professional and expensive approaches to fund-raising, and to greater competition for a limited supply of philanthropic dollars.

Endowment deserves a special word, for it exposes institutions to yet another kind of marketplace: the stock, bond, and real estate markets where the endowment funds are invested. Here again professionalism is the key to success for endowments of all sizes. Investment management by alumni and local banks is rapidly becoming extinct as funds diversify their holdings across asset classes and balance total investment return with risk on a global basis. The question of how much to spend from the endowment in a given year also is being approached systematically. The traditional rule of spending investment yield—i.e., interest and dividends—became obsolete when capital appreciation became a regularly-expected element of total return. Modern spending rules seek to preserve the endowment's purchasing power while mitigating capital market risk. (The most widely used rule

calls for spending about five percent of a three-year moving average of principal value.) A robust program of seeking new gifts to endowment coupled with astute investing can substantially increase the degree to which endowment supports an institution's current operations.

Larger endowments have the dual advantage of providing more revenue and decoupling revenue from the university's current base of activities. Losing key faculty to competitive institutions can erode sponsored research revenue almost over-night, for example, and getting downgraded in ratings like those published in "U. S. News & World Report" can do the same for student demand. The ability to obtain gifts for endowment may depend on current activities, but once the money has been obtained it allows schools to pursue their mission without worrying about their activities' effects on market demand. All the other revenue sources, including gifts for current operations, require the institution to match its activities to market demand each and every year.

Third in importance in private intuitions' revenue mix is grant and contract volume: the money sponsors pay to support research, and to some extent educational, projects. Federal and state grants and contracts amount to between 8 and 12 percent of revenue, with a small additional amount included in the "Private Gifts, Grants, and Contracts" category cited above. The challenge is to induce and assist faculty principal investigators to submit proposals that will win out in competition with those from principal investigators at other schools. Schools like Stanford and Penn have many hundreds of projects, funded by dozens of different agencies and foundations, active at a given time. They have highly developed grant and contract offices and sophisticated procedures for costing out projects and collecting overhead. Because overhead recovery represents a significant percentage of operating revenue for research-intensive institutions, it receives the same professional management attention as student enrollments and fund raising. Less prestigious schools scramble to receive small numbers of projects in key areas but these, too, may be vital to the institution's financial health. Competition for research funding has grown enormously as more and more institutions vie for shares of a pie that, while large, is not growing proportionally to the number of would-be principal investigators.

Non-market income sources, specifically direct state and Federal appropriations, account for only about 1 percent of private institutions' income. This source can account for 50 percent or more of public institutions' income, although the figure has dropped significantly in recent years. Because private

institutions depend on current demand for nearly their income other than that from endowment, between 80% and 100% of their activities are exposed to the market.

Benefits and Costs of Market-Based Revenue

One obvious benefit of market-based revenue is that it can increase quickly as the result of institutional initiatives. Many schools have grown dramatically in size and quality by pursuing conscious strategies of top-line (i.e., revenue) growth. Perhaps the best known of these is Stanford University, where in addition to my professorial career I served as chief financial officer for more than a decade. Beginning in the 1950s, Stanford leveraged itself by exploiting the burgeoning sponsored research market and converting its newly acquired academic reputation to strong student selectivity and high tuition. It recruited an entrepreneurial faculty and gave its deans and other administrators wide latitude to pursue both traditional and non-traditional revenue sources. The result was a transformed institution: from a good regional college to a world-class research university. Stanford's example has been emulated many times with varying degrees of success, but this and similar examples show what can be done by harnessing markets to the support of mission.

One example of how Stanford pursued non-traditional revenue was the Engineering School's decision in the 1960s to supply graduate courses via closed-circuit television to Silicon Valley companies. The three-times normal tuition rate for this innovative educational technology application helped fund the School's research programs. The University's patent and licensing program provides another example. At one point Stanford held the patents for recombinant DNA and the core sound-generating circuitry in Yamaha organs, for example, from which we derived large royalties. Joint research ventures with industry abounded and continue to this day, as does the spin-off of university technology and human resources to start-up ventures. While conflict of interest concerns prevented the University from being a direct equity partner in most such start-ups, we profited handsomely by investment in venture capital funds (many managed by our graduates) and through gifts from successful entrepreneurs like Bill Hewlett and Dave Packard.

Many schools have emulated Stanford's efforts to pursue non-traditional revenue, but by no means all have been successful. Stanford enjoyed a "first mover" advantage as well as favorable circumstances in Silicon Valley. Unfortunately, the

success of a few entrepreneurial institutions leads other schools to rush in, only to find they are unable to deliver the goods or the market niche has been saturated. The general conclusion is that while non-traditional revenue can help "at the margin," the cases where it has transformed an institution are few and far between.

Traditional as well as non-traditional revenue streams are becoming more competitive. This has important consequences for institutional behavior. Indeed, the rise of on-line and for-profit education and the real decline in Federal financial aid, coupled with reductions in state support for public institutions, have created an "overcapacity" in higher education—not in relation of what many believe ought to be provided but what can be paid for with the available dollars. The overcapacity has inhibited many non-selective institutions from boosting tuition and/or economizing on financial aid—a pressure that seems likely to worsen. At the other end of the spectrum, the most highly selective institutions are locked in an "arms race" to provide the best amenities and services for students. Unfortunately, though, the lack of good market information about education quality has diverted the arms race away from the core values of undergraduate education.

Competition also has eroded prices in sponsored research. For example, the Federal government has limited overhead recovery on its contracts and grants, and agencies like the National Science Foundation have insisted that intuitions "cost-share" a larger portion of direct project expense. Private foundations also insist that universities cost-share or at least promise to continue successful initiatives when the external funding runs out. To make matters worse, many foundations have shifted their focus from higher education to the mitigation of social problems. Finally, potential donors are bombarded with requests for giving from all manner of philanthropic causes.

The inescapable conclusion is that American colleges and universities find themselves in a "mature market" that, like most such markets, is increasingly competitive and threatened by overcapacity. Some institutions can aspire to significant revenue growth of the kind Stanford achieved in decades past, but for most the prospect is dim.[3] The result is a diminished capacity for discretionary spending, which in turn shifts the focus of activity at many schools from mission to market.

Tensions Between Mission and Market

Universities exist in order to create value. Policy-makers parse value into public and private benefits, but as a practical matter it's hard to tease the two

apart. For example, a student who pays tuition gets a private benefit: otherwise he or she would spend the money elsewhere. But the public benefits too, as the result of a better educated workforce and citizenry. Separating these benefits presents difficult econometric challenges that, frankly, are of little interest to colleges and universities. What does matter is market demand in relation to what an institution wants to do to further its particular mission. For traditional (non-profit) colleges and universities the mission will include an element of public benefit, but it may include the creation of private benefit as well.

Traditional institutions arrange their activities to maximize contribution to mission subject to three constraints. The first of these is that, on average over time, expenditures cannot exceed revenues. A school can run deficits for short periods, providing it has reserves or debt capacity, but doing so indefinitely will lead to bankruptcy. Markets provide the second constraint: schools can't sell more services or charge more for them than the market will bear. "Production" provides the third constraint. A given complement of people and machines can only accomplish so much, so if an institution wants to do more it must acquire more capacity or find ways to improve efficiency. The higher education "production function" is an important area for study, but one that is beyond the scope of this paper.[4]

The ideal circumstance for a college or university is where the desires of students, research sponsors, and donors align precisely with the university's own mission and where these counterparties can pay the its full cost of delivering the benefits. Alas, however, this circumstance seldom if ever comes to pass. Compromises between what the university and its faculty desire on academic grounds and what the market is willing to pay for are the rule rather than the exception. The resulting tension between mission and market represents a prime challenge, some would say *the* prime challenge, for all universities that depend heavily on market-based revenue.

The crunch arises in connection with cross subsidies. As Bob Zemsky said in his keynote, market-based universities cross-subsidize the cost of programs that have low demand but high contribution to mission with surpluses earned by those with greater demand. Here is how we described the reasons in our recent book:[5]

> Cross subsidies are a way of life in nearly every nonprofit college and university, and indeed in any nonprofit enterprise that operates in multiple markets. To see why, imagine for the

moment that you are looking over the shoulder of a provost as she ponders next year's faculty allocations for her college's Business and Philosophy Departments. She knows Philosophy lies at the core of the college's value system but that the department scrambles for enrollments and loses money. Business isn't as central to the college's traditional values but it turns away good students and produces surpluses. Many professors in the Philosophy department think Business's success threatens the college's identity and hence its mission, despite—or perhaps because of—its profitability. They want new faculty slots to better cover the full range of specialties that comprise the modern discipline of Philosophy. Not so incidentally, they see in the adding of slots in Philosophy as an important counter-balance to the recent growth in the number of Business faculty.

Some provosts, and perhaps most chief financial officers, would expand Business to make it even more profitable and perhaps contract the Philosophy department to make it better fit its real revenue base. This strategy is one of "following the money, " in effect letting department size to be determined by the market rather than by mission. Other provosts might reallocate a few faculty slots from Business to the Philosophy department—a strategy that would cater to mission but ignore the potential market consequences of larger classes or increased teaching loads in Business.

The provost you are observing, however, is an economist, and she knows that the nonprofit model requires a more complex calculus. Her thinking runs as something like this:

> Every program produces two "goods"— *mission attainment* and *revenue from the marketplace*. One might say these represent "love" and "money." I'll expand a program if the extra love plus the extra money exceeds the variable cost of expansion, and visa-versa; and I'll continue expanding or contracting until the sum of love and money just equals the cost of expansion. By doing this I'll produce more value overall than if I considered either love or money alone.

Using this logic leads the provost to expand both Business and Philosophy.

Her decision rule speaks volumes. To maximize a college's or university's mission attainment, the provost is saying that she needs to take money as well as love into account. For her, money is no more dirty word than love is a dreamer's escape. When challenged as to why she is allowing Business to expand, thus further distorting the College's historic mission, the provost responds:

> No, I've not debased the college's values by "putting money above love," as you put it. I'm using the "profits" obtained by expanding Business to boost mission attainment elsewhere, which will leave the college better off overall. Without the extra profits from Business, for example, I might have to contract the Philosophy department.

Contrast this way of thinking with that of a CEO of a for-profit enterprise, educational or otherwise. His mission is to maximize shareholder value, which in the present context is synonymous with maximizing profits. His decision rule is to "Expand a program if the extra revenue from the marketplace exceeds the variable cost of expansion, and conversely reduce or close those units that fail this test. Continue expanding or contracting until the extra revenue just equals the variable cost." More formally, this dictum becomes the *marginal revenue = marginal cost* rule that is taught in beginning economics courses, with marginal meaning incremental in this context. Only money enters the equation. Love comes in as a side condition if it is considered at all. Such considerations differs significantly from the nonprofit decision rule that holds that *marginal mission attainment per dollar spent + marginal revenue = marginal cost*, where both love and money enter the equation.

The difference between a market-based non-profit university and for-profit entities, including for-profit universities, can be simply stated. For non-profits, margins earned from profitable programs are plowed back into mission enhancement through cross subsidies, whereas the margins earned by for-profit

entities accrue to the benefit of investors. Financially healthy non-profits can and do sustain values that are separate and distinct from those of the market. For-profit entities exploit marketplace values to the fullest extent possible for the benefit of shareholders.

Lessons from the U. S. Experience

No country has gone further than the United States in orienting colleges and universities to the market. Our substantial private sector has depended on market-based revenue for a century or more—since endowments and church-related sponsors ceased cover the lion's share of expenses. Recent decades have seen public-sector institutions turn to the market in ever-increasing numbers as state support has waned. Therefore, the U.S. experience has particular relevance for systems that are considering how strongly to embrace the higher education marketplace.

The first lesson is that the market's dynamism can transform institutions in favorable ways. I have already described how seizing market opportunities can produce top-line growth, which enhances academic program both directly and through cross-subsidies. Embracing the market broadens the possibilities for expanding revenue beyond one's traditional funding sources, albeit at the cost of some compromise with mission. The U.S. experience is that, if managed wisely, the broadened opportunities confer more benefits than costs.

In addition, market-oriented institutions are more agile and entrepreneurial than those with stable non-market revenue. Because colleges and universities are inherently conservative institutions when it comes to their own operations, significant change often requires external impetus. The market provides such an impetus—one from which there is no appeal no matter what the institution's internal power structure. Of course this is a two-edged sword: adverse market swings can damage the university as well as provide needed impetus for change. It is difficult, however, to deny the long-term benefits of agility when conditions in the world beyond the university are changing.

The benefits of embracing the market are clear, but what of the risks? The American experience shows that the risks can be substantial, and that they are both short-term and long-term in character. Higher education institutions and systems need to develop mechanisms for identifying and mitigating these risks before going to market.

Revenue volatility is the main short-term risk. Market decisions are made by independent actors for whom the university's welfare in not necessarily a factor in decision making. Revenue from transactions with these actors can swing more quickly, and be harder to predict, than government appropriations in a supportive political environment—an environment where the funding agency cares deeply about the university's long-term welfare. Of course there are exceptions. The law of large numbers dampens fluctuations in markets with many actors, for example, and the government funding climate can turn sour on short notice. Still, market-based institutions generally need more well-developed risk management procedures than those that rely mostly on public funding.

Risk management relies on two kinds of actions: identifying the mains sources of risk and quantifying them to the extent possible; and developing financial reserves and/or contingency plans to address problems in an orderly way when they occur.[6] Many of America's colleges and universities have developed robust processes for managing market volatility. Institutions around the world are doing likewise as indicated, for example, by the University of Melbourne's recently-developed comprehensive risk management program.

A longer-term risk is that an institution may over-leverage itself by pursuing transitory market niches or ones where it can't sustain its competitive position. Such risks can be minimized by careful analysis—including what the for-profit sector calls market research—before investments are made. Too many universities go to market without such due diligence, and they often pay heavily for the oversight. Yet some mistakes are bound to occur given the difficulty of foresight. Their mitigation lies in agility. Market-oriented institutions need to be able to cut their losses, to redeploy human and financial capital, without the endless wrangles that often characterize academic decision making.

Failure to manage risk effectively will diminish an institution's capacity for discretionary spending, and thus its ability to pursue its mission. Being mission-centered requires the financial strength to buck current market trends. Bob Zemsky noted that financially weak institutions behave like businesses: they must serve the market, and only the market, in order to survive. Failure to anticipate risk and manage adversity when it occurs makes the institution a slave to the marketplace rather than an independent actor in the public interest.

I should note that markets don't pose the only threat to discretionary spending in pursuit of mission. Loss of public funding can do the same thing, as many an American public university can attest. The difference is that diminished

public funding is an act of commission—a decision by the body politic to spend its scarce resources elsewhere, made with at least some cognizance of the decision's effect on the university. Democratic processes allow higher education and its constituents to have their say, and perhaps to reverse or slow the loss. Markets, on the other hand, operate anonymously with little if any regard for institutional well-being.

The maturation of the U.S. higher education marketplace provides an object lesson about what happens when colleges and universities go to market intensively and in large numbers. It's possible that the erosion of margins and the arms race in meeting short-term market objectives, both caused by heightened competition, will significantly weaken America's colleges and universities. Or we may prove agile enough to surmount these difficulties and move to a new growth trajectory—perhaps fueled and enabled by information technology. But one thing seems clear: once universities experience the possibilities of the marketplace and governments perceive markets as an alternative to direct public funding, it's hard to put the Genie back in the bottle. Happily, the experience of America's private colleges and universities provides an existence proof that well-managed institutions can be mission-centered *and* market-smart.

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[1] For follow-up on the non-profit model and many other ideas expressed in this paper, see Robert Zemsky, Gregory R. Wegner, and William F. Massy, *Remaking the American University: Market-Smart and Mission-Centered* (Rutgers University Press, 2005), William F. Massy, *Honoring the Trust* (Bolton, MA: Anker Publishing Company, 2003), and David S. P. Hopkins and William F. Massy, *Planning Models for Colleges and Universities* (Stanford, CA: Stanford University Press, 1981).

[2] The percentages cited in this section are from Barbara E. Taylor and William F. Massy, *Strategic Indicators for Higher Education* (Princeton, NJ: Peterson's, 1996). Sales and services of auxiliary enterprises (e.g., dormitories and food services), hospitals, and other non-academic revenue sources are excluded. The figures are intended as rough benchmarks only and should not be used as a basis for analysis.

[3] D. J. Brewer, S. M. Gates, and C. A. Goldman, *In Pursuit of Prestige: Strategy and Competition in U. S. Higher Education* (New Brunswick, NJ: Transaction Press, 2001).

[4] See Hopkins and Massy (1981), and Massy (2003), *op cit*.

[5]From Zemsky, Wegner, and Massy (2005), *op cit*, Chapter 4.

[6] Models for managing revenue volatility can be found in Hopkins and Massy (1981).