

Trends Affecting Higher Education
September 2005

International Economics and Geopolitics

Income gaps. Internationally, the gap between “haves” and “have-nots” is growing. The divide between rural areas and cities is also growing. In the U.S., intergenerational mobility is no longer increasing. These trends may be weaker in the United States than in other parts of the world, but will have a growing impact on domestic education and business.

Changing leadership and conflict. While the United States may sustain its position as an economic, education, philanthropic, and military leader, the European Community and China will become even stronger economically. Increasing demands for energy, compounded by turbulence across Islamic countries, and military conflict, economic destabilization, and health crises across much of Africa, will present security and health challenges for decades to come.

International students. Foreign enrollments in U. S. postsecondary institutions are at their lowest level since 1971; major graduate programs report a drop of 6 percent in foreign enrollments, with sharpest drops among students from India, China, and Japan. China and India are rapidly building their own higher education infrastructure.

Market Competition

It's A Flat World, After All – technology-fueled convergence. In his latest vision of the future, Tom Friedman writes that the world is in the midst of a convergence of new players, on a new playing field, developing new processes for horizontal collaboration that is the most important force shaping global economies and politics in the early 21st century. Global competition for knowledge work is accelerating as a result of 10 politically and technology- driven forces (1. 11/9/1989 -- fall of Berlin Wall; 2. 8/9/1995 – day Netscape went public (compounded with laying of fiber-optic cable across the oceans) and benefited countries that could not invest in it); 3. Y2K and development of “Workflow” software and middle ware that connects computers worldwide; 4. outsourcing; 5. offshoring; 6. open-sourcing; 7. insourcing; 8. supply-chaining; 9. “Informing” – a new form of collaboration, like Google, Yahoo, and other search engines; 10. wireless access and voice over Internet protocol so you can do voice, data, etc. anywhere from any device. ... America is not really ready for this.

Political and economic convergence. Three billion more people have entered “into the game,” as China, India, Russia, Eastern European, Latin American, and Central America as their economies and political systems opened up during the 1990s. Leaders in India and China want to race us to the top. Nothing guarantees that Americans or Western Europe will continue leading the way.

Ambition, numbers, and education gaps. We face a “quiet crisis” eating away at America’s scientific and engineering base: 1. an ambition gap -- “the entitlement we need to get rid of is our sense of entitlement”; 2. a numbers gap -- we are not producing enough engineers and scientists, and fewer are coming to be trained here; 3. an education gap – business can find better skilled and more productive workers (not just cheaper labor) elsewhere.

Resources. Higher education cannot count on increases in public funding from state or federal sources; new ways of funding capital and program growth will be necessary.

For profit and virtual institutions. Traditional institutions are losing their monopoly on higher education. The industry is becoming deregulated. For profits and distance education universities are dwarfing enrollments in traditional schools abroad, in some cases for considerably less than the cost of traditional instruction. The University of Phoenix enrolls 200,000 students, and will expand to 500,000 by 2010. It has used automated processes to address the challenges of geographic growth across 37 states. Forty percent of admissions decisions are made without human intervention; the rest are

handled by admissions officers working from home. By FY 2006, it will have a fully automated degree audit process for students to use if they meet all requirements for graduation.

International credit transfer. Global students will want to move their learning credits across all boundaries. The first country that recognizes this and allows easy transfer will capture a large chunk of future learners.

Security. Response to security issues has had a negative impact on US institutions' ability to attract leading international students and researchers. Leading academic, science and engineering associations are renewing a call for the U.S. government to accelerate its effort to reform the visa process for international students, scholars, and researchers.

Demographics

Growth in population has led to growth in attendees. This is a very long-term trend. In 1900, 4 percent of the population attended college; in 1999, 43 percent did. In 1900, 2.7 percent of 25 –year-olds completed four or more years of college; in 1999, it was 23.6, a ten-fold increase. College enrollments are expected to continue to rise by 15 to 20 percent through 2014, in every demographic segment.

Diversity. One in seven Americans is Hispanic in 2005, and the proportion is likely to increase, since the growth rate in the most recent one-year period was more than three times that of the total population.

Aging of the population. In the U.S. and throughout the developed world, fertility rates are low, often at record lows. Because of low fertility and sustained low mortality, the populations of the U.S. and European countries are aging. This shift in age structure will mean increasing use of health care. There is also evidence that the Baby Boom will seek additional education in retirement, not for purposes of enhancing productivity but as consumption good. Some universities are already planning retirement communities near their campuses to anticipate this trend.

California as model for future trends. Within the next 25 years, about a quarter of all Americans will be residing in what will be the three most populous states, California, Texas, and Florida. Other big gainers will be North Carolina and Georgia... The population growth and shifts are posing headaches in all of those states. But nowhere are the problems more pronounced - or familiar - than in California. There, planning has been in fits and starts... It needs to take place recognizing that we're not in an era of big government in which we're going to see large projects, or large sums of money, from the federal government.

Higher education enrollment trends. Texas ranks low nationally in proportion of students graduating from high school and going on to college. Because of population growth in the state, there will be more than 16 million undergraduates by 2010 and nearly 17 million by 2014. Enrollment in two-year colleges is projected to grow to 7.2 million by 2010 and 7.4 million by 2014. Undergraduate enrollment at four-year institutions is expected to rise to nearly 9 million in 2010 and 9.2 million by 2014.

Age. Between 2000 and 2001, 46 percent of adults participated in some type of adult education, other than full-time college attendance (it was 22 percent in 1965). Demands for continuing education by professional and other skilled groups is likely to increase as more adults choose or are forced to change careers. The desire for continuing education, including degree programs, is likely to keep growing over the next 10+ years, for work-related and personal enrichment purposes.

Gender. Girls do better than boys in K-12 school. Over the past five years, the proportion of female students has grown to exceed male students on many college campuses. Women will continue to outpace men in enrollments, according to the projections. By 2010, men will be outnumbered, 9.4 million to 6.8 million. And by 2014, the gender gap will widen by some 200,000 more. The numbers will grow, but the proportion will continue to be small of women entering and staying in many science and engineering fields.

Texas Demographic Trends and Higher Education

Texas population growth. Texas is among the states that will experience the biggest growth in 18- 24-year old populations. The Texas Higher Education Coordinating Board estimates that by 2015, higher education institutions will enroll over 1.5 million students, or 630,000 additional students, based on current trends.

Dilution of growth in Texas higher ed. Poor graduation rates dilute the impact of higher education. Steve Murdock projects that by 2040, only about 13 percent of the Texas labor force will have a bachelor's degree. In 2000, Texas was 27th in the nation in proportion of people holding college degrees (23.2 percent); the national average was 24.4 percent. Enrollment in college has increased numerically, but so has the population. Yet, as Texas depends less on energy for jobs, income, and industry growth, the need for education in new fields will increase.

Texas diversity. In Texas, by 2040, 44.5 percent of public university students will be Hispanic, up from 21.3 percent in 2000. Enrollment of Black students will decrease from 10.3 to 8.1 percent, and of White students from 81.5 to 32.3 percent. Students labeling themselves as "other" will increase from 6.9 percent to 15.1 percent.

Higher Education Trends

Balancing access, affordability, and quality. An overriding question in Texas and other fast-growing states like Texas is how to accommodate growth, strengthen the quality of academic, research, and health profession programs while also strengthening access to and success at universities for students who are economically challenged, or from underrepresented ethnic/racial groups? Resources and facilities may not keep up with demand. Community colleges may be expected to expand their capacity to accommodate much of this growth.

Affordability. Tuition will continue to rise. How can we ensure that increasing numbers (and proportion) of economically disadvantaged students prepare for, apply to, matriculate at, and graduate from college? The concern will continue that higher tuition will keep some students from attending, and will force others to attend part time, reducing their chances of completing a degree. Public institutions will begin to use price sensitivity as part of their analysis of affordability. Nationally, access to college is still related to some extent to economic status and class.

UT System affordability policy and practice. Students at UT System campuses rarely pay the "sticker price" for higher education; most pay an average of 30 percent less than the full amount of resident undergraduate tuition and fees. The UT System operates on the principle is that no student be denied educational opportunity because of financial need, while ensuring that educational services are of the highest quality. At least 20 percent of new tuition is set aside for financial aid.

Seamless transfers. The trend will continue for students to attend more than one college before they graduate. Over the past two decades, 59 percent of postsecondary students (based on a 2005 US Dept. of Ed survey) transferred colleges or were enrolled simultaneously. 28 percent of four-year public college students attended two institutions, 13 percent attended three institutions.

K-16 pathways. Reducing the numbers of high school drop outs, particularly among minority groups, and increasing the number of students prepared to attend college are major policy issues that will continue into the next decade.

Teacher education. Recruiting, training, and retaining effective teachers, particularly in math and science and to work with high-risk students, will be high-priority issues for the coming decade. Preparing sufficient numbers of teachers in science and math is critical to ensuring American workforce, business, and scientific competitiveness.

Student success—retention and graduation rates. Nationally, only 55 percent of students who start college complete a degree within six years; only 41 percent of African American or Hispanic students. Preparation for college and ability to maintain continuous enrollment appear to be key factors in timely degree completion.

Comparatively less success nationally among Hispanic students. According to a recent study supported by the Lumina Foundation, Latinos are less likely to graduate from high school or receive a GED than any other group (86.4 vs. 92.3 percent), making them less prepared for college. Twenty-two percent of Latino students who go on to college enroll in four-year institutions, and just 23 percent receive four-year degrees within eight years of high school graduation (compared with 41 percent attendance, and 47 percent eight-year graduation rates among White students).

Distance education. In 2004, nearly one million students took on-line courses, 50 percent more than in 2002. Support for e-learning will be needed: an adequate and reliable technical infrastructure; instructors and students who have technical skills to use tools; redesign of courses to incorporate e-learning into pedagogy.

Use of technology for continuous access to learning. Information technology will transform the traditional pattern of learning. The old goal was site-based, standardized curriculum to impart knowledge and learning. The new goal is endlessly customized programs to transmit competencies and skills, any time, any where.

Learning outcomes. The debate about the merits and pitfalls of high-stakes testing in K-12 education will continue and will continue to prompt some to consider testing at the college level. Although it is unlikely that the federal government will mandate standardized testing for public higher education, it is likely that through the reauthorization of the Higher Education Act in 2005-6, and changes in regional accreditation standards, emphasis will increase on using tests, student portfolios, and other ways to means to assess what college graduates have learned and their preparation for employment.

Professionalization of the curriculum. Roughly one-third of baccalaureate degrees were awarded in the liberal arts and science in 1999, down from 50 percent in 1970. Employers will continue to voice concerns about graduates' preparation in oral and written communication, numeracy, critical thinking, and team work.

Graduate education. Graduation education will play a continued critical role in producing future scientists, engineers, and professors for the next generations of college students. This is the "century of biology." Research and advanced training will be transformed as connections across engineering, life sciences, mathematics and other fields are reflected in research and curricula. Recruiting the best talent from diverse groups will continue to be a challenge as long as the pipeline of minority students continues to leak. And, recruiting the best international talent will be compromised by continued security issues and increasing competition from research institutions in Europe, India, and soon, China.

Expectations/Value/Accountability

Cost of attendance. Tuition will continue to rise. Affordability will continue to be a major issue and public pressure will increase to hold rates down. The concern will continue that higher tuition will keep some students from attending, and will force others to attend part time, reducing their chances of completing a degree. Public institutions will begin to use price sensitivity as part of their analysis of affordability.

Accountability. At the state and federal level, accountability will continue to be defined, at least in part, as keeping tuition as low as possible. Performance measurement and assessment, and demonstrations of efficiency, i.e., easy credit transfer among institutions, will continue to be top issues. Traditional structures may be changed, i.e., with new, flexible charters with states in exchange for more accountability.

Private benefit. Over a 20 year period, the benefit of college was estimated at more than \$2 million in 2003; compared with \$1 million in 1977, and is expected to continue to increase. The difference in median entry-level wage for a college vs. high school education was \$26,900 annually in 2003 dollars. (Mercatus Center for the U. S. House of Representatives March 1, 2004). The gap in income grew from 31% in 1979 to 66% in 1997 between college and non-college educated people.

Economic impact and public benefit. Institutions will need to show how they leverage the investment in higher education into jobs. (In FY 2004, the UT System collectively made a \$12.8 billion impact on

the Texas economy, generating 215,700 jobs. For every dollar in initial spending, an average of 44 additional cents was spent within host regions. Of this, UT System health institutions were estimated to add \$7.7 billion and 112,200 jobs to the Texas economy; 60 percent of the total UT System economic impact.)

Impact of technology transfer. Research universities and health centers will continue to make a significant impact on regional economies through transfer of discoveries into the marketplace. Expansion will require institutional systems and policies to support the development of complex partnerships, and laws and public policies that favor technology transfer.

Health and Health Institutions

Fiscal constraints will continue, brought about by escalating health-care costs, unsponsored care, cost of technology, decreased reimbursement for clinical services.

Sustainability of correctional managed care. The proportion of Medicare and indigent care in the payer mix will increase over coming 4-5 years; managed care and commercial sources will decline. Workforce shortage, particularly in nursing, but also physicians and non-health care professionals (information technology, laboratory technicians, etc.) caused by declining enrollments, aging and retiring workforce, and an older and sicker population requiring more nurses.

Increased demand and capacity limitations for services for an aging population.

Emerging health threats. Bioterrorism; obesity, mental health challenges; exploding health care costs; highest rate of uninsured patients; rapid population growth; low immunization rate; challenges of border region; sharp health disparities; substance abuse. (Texas is at the 50th percentile of the national average in per capita public health expenditures; a goal would be to move the state to 75% of the national average by 2010.

Science and Technology

New cross-disciplinary research fields. Biological sciences, medicine, mathematics, and engineering – new scientific fields will continue to raise critical policy issues, cloning and stem-cell research.

Science workforce. Proposals and initiatives will continue to address the weakening of science/technology education and the workforce. For example, the Association of American Universities recommends a comprehensive, multi-agency national defense education initiative be developed aimed at stemming national educational deficiencies and encouraging more U.S. students to study in critical fields of knowledge. AAU recommends that the Department of Defense and the National Science Foundation – the federal agencies with primary responsibility for national security and scientific research and education – play a central role in the coordination of this initiative working closely with the Department of Education and the White House Office of Science and Technology Policy.

Ways of Doing Business

Integrated global economy. Outsourcing is not limited to manufacturing and help centers. High value-added services like education, tax preparation, medical diagnostics, and legal services are already going to India – could U.S. universities outsource research? Data collection?

Wireless access is on the rise; the market is likely to go over \$200 million in the next three years; 79 percent of campuses have wireless networks. The convergence of wireless devices is speeding up, and eventually the U.S. will have to adopt global standards. Powerlines will be the way that people will get access into their houses; the rural-urban divide will disappear. Students are expecting more technical support for a range of devices they bring to and use on campus. Should campuses have “computer health insurance” plans for students?

Collaborative research partnerships (government/university; business/university; university/university) will increase and become increasingly complex.

Compliance and legal issues, fueled by attention to corporate ethics, will continue to have a high profile: hyperregulation; crisis management; real estate and construction; employment flexibility and faculty tenure and rank; entrepreneurial activities.

Human Resources

Aging faculty. While the national population is aging as a whole, factors specific to academe magnify the trend. Ten years have passed since Congress ended mandatory retirement. Many professors hired during the great expansion of academe in the 1960s and 70s are now reaching their golden years. And, because many people are living longer, and need financial resources to do so comfortably, more and more professors are delaying retirement, some of them indefinitely.”

Part-time faculty will be recruited increasingly to teach where numbers or background of regular faculty do not match demand.

Fiscal and Capital Resources

Cost of doing business will increase; so will search for ways to save money. The cost of doing business in U.S. higher education will continue to increase faster than the rest of the economy; the building boom will slow (money won't go as far; state support will slacken); energy efficiency will return to the forefront as one way to control costs in new and aging buildings; sustainable and green design will become more cost-effective.

State and federal funding. State and federal funding for public higher education is likely to continue to decline relative to funding of other major obligations.

Financial aid. Increases have slowed in federal research funding; the amount available may actually be cut in the 2006 budget. Institutions will compete even more for dwindling funds.

Private philanthropy will be an increasingly important and strategic source of funding as state and federal resources decline. Competition for private giving will increase; large campaigns will be announced by increasing numbers of campuses. Will contributions keep up with the need? They increased 3.4 percent in 2004, when most half of the \$24.4 billion raised came directly from individuals, representing a 9.7 percent increase from the previous year. Alumni giving, the traditional base of higher education giving, increased only 2 percent, but gifts from individuals other than alumni shot up by 21.5 percent.

Debt financing. Tuition Revenue Bonds (TRBs) comprise approximately 10 percent of the UT System's five-year, \$4.9 billion Capital Improvement Program and Permanent University Fund debt program have the highest possible credit ratings from each of the three major national rating agencies. The ability to utilize TRBs, and for the state to reimburse TRB debt service, will play a critical role in the ability of public universities in Texas to maintain their credit worthiness and to provide the capacity to expand facilities to meet growing demand.

Facility expansion. Based on demographic projections, the UT System estimates that by 2030, enrollment in UT System academic institutions (except UT Austin) will increase by approximately 79,000 students by 2015 and by at least 116,000 students by 2030, if THECB enrollment targets to “close the gaps” are met. On average, each student will require 145 gross square feet of E&G space; the resulting space deficit is estimated at between 18 million to 27 million square feet of new E&G space by 2030, at a cost of \$4 billion to as much as \$7 billion.

IT investments. Spending on technology has begun to slow; productivity promises have arrived and technology may not be able to contribute much more to efficiency of educational delivery; public institutions cannot continue to pour money into hardware.