Making a Life, Making a Living in 21st Century Texas

Malcolm Gillis *
Rice University

I. Introduction

In the August Texas Monthly, Paul Burka called for a statewide debate on higher education, similar in scope and intensity to the statewide deliberations over primary and secondary education in 1984. This is a timely challenge, especially given that a soon-to-be published Brookings Institution study of higher education across the country provides ample evidence that support for public higher education in Texas has been deteriorating even more rapidly than in the nation as a whole. This article attempts to contribute to what I hope will be a full-fledged debate.

I make no claim to be a neutral observer; rather I am bound to state my own very sizable debt to public higher education. As a seventeen-year-old raised by a grandmother on Social Security, I never would have been able to step on even the first rung of the higher education ladder but for the presence of a community college in walking distance from home and my place of work. The impetus conferred by this institution carried me to the state’s land-grant school (Florida) and thence to another public university (Illinois) for a Ph.D. Nothing I could ever do could cancel this debt.

I followed the 1984 debate about Texas education from North Carolina, another state also beginning to wrestle with serious issues in public education K-12. The scope of the 1984 Texas discussions was much greater and the participation more energetic. Now, it is clear that it is past time for a comparable
examination of post-secondary education. The effectiveness of our institutions of higher learning will have even more far-reaching implications for the futures of young men and women than was the case in the past. Now more than ever, making a good life depends upon the enlightenment and creativity nourished by deeper understanding of arts, science, and letters. And in an increasingly turbulent and interconnected world, prospects for making a good living are increasingly dependent upon fluency in written and spoken discourse as well as mastery of technical skills for coping with implacable economic and demographic shifts, and with revolutionary changes in biomedicine, nanotechnology, and information technology.

This debate cannot be postponed until such time as state government finances are again robust. Rather, there is an urgent and compelling need to look past current budgetary difficulties and beyond the concerns of a country troubled by new, more insidious threats to national and world security. The issues now confronting higher education will persist long after we have dealt with today’s budgetary and security problems.

II. Social and Economic Values of Higher Education

Most Texans probably would agree that a just society demands access to opportunity for all who seek it, regardless of circumstances of birth. Our society’s belief that opportunities are open to all remains amazingly strong despite a history in which they were systematically denied to minorities and women, whether by statute or by tradition.

Much of the basis for the “American Dream” has rested upon the widely held assumption that our country, with all of its imperfections, still features a higher degree of upward mobility than that typically found in Europe, Asia, or Latin America. Recent research tends to confirm that intergenerational mobility remains notably higher in the U.S. than in Europe leaving aside other regions.

Other things being equal, a society in which individuals can rationally hope to increase their income will be healthier than one where history causes
people to be pessimistic about their prospects for upward economic and social mobility.

Mobility in the U.S. now flows primarily from education, especially higher education. Broad accessibility to high quality education is also good for the economy, now and over the longer haul. Investments in education, whether public or private, share many commonalities with investments in physical capital; but there are major differences as well. A business that invests in a computer gets the exclusive benefit from the device. But when a taxpayer or an individual invests in higher education, the returns accrue not just to students, but also to society as a whole: new knowledge and new ideas can be used by millions of people simultaneously.

Second, investments in education depreciate much more slowly, largely because they have a far longer useful life than investments in virtually all physical assets save land. The useful life of a vehicle is rarely more than eight years, that of a computer less than five; therefore they depreciate over a period of ten and five years respectively. Plant and equipment also tend to wear out at an increasing rate while in service. Not only do educational investments have far longer useful lives (60-70 years), they depreciate at exceptionally low and rather constant rates. With some exceptions (e.g. pure mathematics) skills acquired by education deteriorate but slowly, and vanish entirely only with the onset of advanced disease, or death. Over a century ago, Oliver Wendell Holmes provided a near-perfect analogy for such an asset: “The Wonderful One-Hoss Shay.”

Greatly truncated, his poem goes as follows:

Have you heard of the wonderful one-hoss shay,
That was built in such a logical way,
It ran a hundred years to a day,
And then, of a sudden it...
Went to pieces all at once,
End of the wonderful one-hoss shay,
Logic is logic. That’s all I say.
Investment in education is very much like that in the mythical “One Hoss Shay.” It keeps paying, and paying, and paying up to the end of a lifetime. With useful lives so long, and depreciation rates so low, it is no wonder that recent research has confirmed that returns to educational investment are so high. This claim is no less applicable to investment in university research than to teaching. For example, the noted analyst Edwin Mansfield once estimated that, conservatively placed, the rate of return worldwide from academic research generally is on the order of 28 percent. Returns from investments in biomedical research are higher still.

Ongoing investments in education in societies characterized by a high access to higher education also provide the foundation for sustained economic growth over long periods of time. The effects are cumulative: better-educated parents are far more likely to have the wherewithal to make appropriate investments in education for the next generation, raising productivity all around. The next generation is enabled to make similar investments, and the next, and the next, resounding down through all later generations.

For the United States, there is absolutely no question that investment in education generally, and in higher education specifically, has been the chief engine of productivity growth over the past fifty years; it not only has enhanced the range and quality of human skills, but also has provided the foundations for technological improvements in the workplace.

The economic implications of investment in education in present-day society are starkly apparent from Chart 1 and Table 1. A household led by a winner of a bachelor’s degree commands an annual income that is 1.8 times that for householders having a high school education. A doctorate increases that differential 2.4 times, while professional degree holders earn nearly three times as much. (Chart 1) Those annual premiums translate into similarly great income differences over peoples’ lifetimes. Table 1 shows that lifetime earnings for those with a Bachelors degree are about 1.8 times higher than for those with high school diplomas only. For those with Masters degrees, the differential is 2.1, for
**Chart 1**

Average Family Income by Educational Attainment of Householder, 2001

Source: U.S. Census Bureau

As Presented in "Postsecondary Educational Opportunity"
**Table 1**

**Lifetime Earnings Differentials**

**By Level of Educational Attainment,* 1999**

<table>
<thead>
<tr>
<th>Level of Educational Attainment</th>
<th>Multiple of Lifetime Work Earnings Over Lifetime Earnings for High School Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate Degree</td>
<td>1.3</td>
</tr>
<tr>
<td>Bachelors Degree</td>
<td>1.8</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>2.1</td>
</tr>
<tr>
<td>Doctorate</td>
<td>2.8</td>
</tr>
<tr>
<td>Professional Degree</td>
<td>3.3</td>
</tr>
</tbody>
</table>


professional degrees 3.3. The future returns flowing from additional educational attainment are certain to be still higher in an interconnected world featuring ever more complex technology.

Our future will be one in which people will make a living with their brains, or not at all. Economic and social welfare will hinge not upon what we can wrest from the soil, or from the earth’s innards, but what can be gained from the exercise of human talents and skills, including artistic and creative capacities.

The pace and nature of economic and technological change means that future access to opportunity will be very great for those who have developed an array of skills—cognitive, quantitative, artistic—enabling them to readily adapt over their lifetimes to the demands, not of multiple jobs, but of multiple careers. Adaptive capacity depends upon the ability to convey ideas and information effectively, orally, and in writing. It depends also upon well-honed critical faculties: the ability to differentiate between junk science and real science, between bunk and brilliance, between degrees of evil, and then to build arguments founded on logic and integrity.
Those blessed with some or all of these advantages may look forward to a lifetime of challenge, achievement, and comfort available to precious few in past centuries. Those lacking these skills will, at best, be eligible only for lifetimes of quiet desperation, in hopeless enclaves where opportunities for the poorly schooled and unskilled will be as slender as in any recent period in human history. A decent life, not to mention a decent living, will be beyond their grasp.

At least three alternative futures lay ahead of us. Legislative choices to be made over the next few years will determine which of these scenarios will apply to the next few generations. All three outcomes depend largely upon a greater or lesser degree of access to, and quality of, higher education.

The first scenario features a well-educated, creative populace enjoying sustained growth in productivity, widely spread across society. In this future state, virtually everyone has easy access to the coming wonders of 21st Century medicine and science; leisure time is ample for all, in pursuits almost as satisfying as those found in the workplace. The configuration of economic rewards in this society twenty-five years hence would resemble those depicted for 2001 in Chart 1, except that the returns to associate, bachelors, and graduate degrees would be even larger relative to those for high school graduates. Blessedly, a much smaller proportion of citizens would be found in the four lowest categories featured in Chart 1 and incomes would generally be less skewed than implied there.

This society would be made possible by the legacy left by those with sufficient foresight and concern for posterity to assure both access to educational opportunity and ample research capacities for stoking innovation.

A second scenario would involve moderate economic growth in pockets of high creativity and productivity, but with major gains in economic welfare concentrated in the hands of a highly adaptable minority who have acquired an array of skills from higher education.
In this scenario, perhaps a third of the population lives the idyllic life available in the first scenario, while two-thirds live on the margins of existence, with prospects little better than those faced by serfs on medieval feudal estates. The configuration of economic rewards in this future would be far more skewed than in Chart 1. Also, the proportion of individuals in the four lowest categories would be much greater than in 2001, and their incomes relative to the more highly educated would be even smaller. Worse still, society would become progressively more rigid and pitiless over time: successive generations of the educationally deprived would lack the resources to provide education for their offspring, ensnaring also the next generation in an educational-technological trap. The results would reverberate down through the generations, compounding and perpetuating the bleakness of life for those at the bottom.

Of course, such a culture would not last for long, given the intolerable stresses it would encase. Eventually, either the less educated majority would rise up in revolt, or the educated minority, to protect their exalted status, would limit liberties so severely that resistance became futile. Either way, this is a society that few alive today could sanction.

A third future—shared stagnation for virtually everyone—is less plausible, but not totally far-fetched. This scenario would involve a leveling down of all incomes, even though the skewness in incomes might be even more pronounced than in the second scenario. For society as a whole, successive generations would sink steadily into widely distributed poverty. The Argentine experience over the past half-century provides a peek into this future. Not seventy-five years ago, Argentina was one of the eighth wealthiest societies on earth. But decades of broken social contracts, inadequate attention to education, and other policies mortgaging the nation’s future has caused this once robust society to revert to levels of misery more typical of 19th Century Latin America.

Widespread access to opportunity, with resourceful attention to educational quality, is no guarantee that the first scenario will obtain; however, absent these, one of the other bleak scenarios is what we likely will get.
III. A Perspective on American Higher Education

Education is both seed and flower for the future. As the seed, it makes possible better lives for future generations. And, such a flowering of better lives will lead to demand for more education along with more tangible goods and services, and leisure.³

The arguments for greater, and better, investments in public education in Texas, as elsewhere, apply with similar force to primary and secondary education as to higher education. While I can claim a strong and abiding passion for improving public education K-12, I cannot claim matching expertise. The case for more effective spending on early childhood through secondary education is therefore left to those more knowledgeable on these topics.

This commentary is heavily focused not just on higher education, but public higher education. This emphasis is not due to any belief that all or any of the problems of private higher education have been or are about to be resolved. Rather, it is based upon ample evidence that public and private colleges and universities in the United States have together yielded a system that is unmatched in history for efficacy. That being the case, efforts to strengthen public higher education in this country cannot but help to enhance outcomes for private education as well. But if we are not careful, we may look back in a few years to see that the decade of the nineties was the high water mark for public higher education and therefore, private higher education, not merely in Texas, but in all America.

In the latter half of the 20th Century we could confidently assert that, for all its faults and shortcomings, American higher education was far and away the best in the world, by whatever standards employed. No Japanese university could be considered to be in the same league with the top twenty-five U.S. universities; perhaps two in the United Kingdom might qualify, none on the Continent. Internationally, students have emphatically voted with their feet:
twenty-eight percent of all foreign students studying abroad in 1999 selected the U.S., double the percent who chose Britain, in second place.

Two factors accounted for much of the superiority of higher education in this country:

1. The near unique mix of public and private institutions in American higher education, versus virtually complete state provision of university education on the European Continent and to an extent, in Japan.

2. The fact that responsibility for public higher education is vested in fifty separate political jurisdictions: the states, rather than in a Central Ministry of Education, as in France, or the Philippines.

These traits had two extremely important implications. First, they allowed our country to develop an extraordinarily rich variety of institutions of advanced learning. The U.S. higher education tent is quite large enough to comfortably enfold the huge California and Texas public systems, the private research universities, a wide array of church-based schools, hundreds of small, private liberal arts colleges, as well as successful community college systems, especially in California, Texas, and Florida.

Second, because of decentralization and our public-private mix, higher education in the U.S. has not had to bear the albatross of central direction and control and the heavy-handed, non-responsive bureaucracies typical of the “Ministry of Education” syndrome that has bedeviled higher education in much of Europe and much of Asia for so long.

The pattern for the rich diversity in education was established early in our history. George Washington, wise enough to refuse a crown, was not wise in all things. With others, he sought to convince Congress to establish a national university. Congress refused, and today we have neither central bureaucracy dictating standardized curriculum nor mindless decrees from the center.
governing student admissions or promotion of faculty, nor, as in many nations in history, enforcement of political or pedagogical conformity.

The unique blend of public and private universities in America has contributed materially to innovation and experimentation in teaching, learning, and discovery in higher education. Because they were not utilizing public funds, private institutions were able to take risks in teaching and research not always open to public ones. Our public/private mix also fostered healthy competition for faculty and students that made stronger both public and private institutions, and the constituencies they serve. Today, the spirit of competition works alongside that of growing cooperation. In the strongest institutions, we find resourceful patterns of collaboration across public and private universities, even as they compete vigorously for faculty, students, and finance.

Consider one of the most important recent ramifications of the American mix in higher education: the clusters of innovation and creativity that bloomed in Silicon Valley in California, Route 128 in Eastern Massachusetts, and Research Triangle Park in the North Carolina Piedmont. Silicon Valley rose to prominence in the last quarter century first because of the presence of private Stanford and public Berkeley, and later because of the well-trained work force coming out of San Jose State and the community colleges in the Bay Area. The flowering of technology around Route 128 would have been unthinkable absent the scientific prowess of Harvard and M.I.T., combined with well-prepared graduates of state universities in New England. Research Triangle Park would not have come into being without unwavering commitments and availability of faculty and student talent from private Duke, and two public universities: University of North Carolina and North Carolina State University.

European and Asian countries increasingly recognize the value of this educational mixture. They have begun to establish new private higher education institutions in the belief that public-private competition and collaboration may reinvigorate public higher education. New private institutions show signs of flourishing across the globe. Especially notable are new institutions in Germany,
Central and Eastern Europe, Thailand, as well as older, mostly church-related universities, in Chile and Brazil.

Diversity and decentralization in the U.S. clearly account for a degree of accessibility to higher learning and innovation unparalleled in history. The fact that entry into higher education has been easily attainable helps explain why our multi-racial, multi-ethnic society still exhibits a degree of cohesiveness and civility even in the presence of significant, and growing disparities in income and wealth. Enough people seem to believe that, with access to education opportunity, they or their offspring will “get their chance.”

IV. Higher Education: Realities

In 1950, only 6.2 percent of the population nationwide had a college education. By 1990, that percentage had risen to 20 percent, and reached 26 percent in 2001. In Texas, however, the figure is but 21.7 percent.

About one million students are enrolled in Texas’ 201 institutions of higher learning; more than four-fifths of those students are in 109 public institutions, from community colleges to research universities.

By 2025 Texas will join California and Florida in claiming a third of the population seventeen and under, according to U.S. Census projections. (Texas alone will be home to 9.1 percent of this cohort.) And, while 21 percent of children across the U.S. live in poverty, the figure is, strikingly, 25 percent in all three states. Given these demographic patterns, it is sobering to think that what is done about quality and accessibility of higher education in these three states will affect one of three of those entering college two decades hence. Today, the three states account for a quarter of the nation’s college enrollment (Texas has 6.7 percent). By 2025, the combined share could surpass 33 percent. Educational decisions in Texas, California, and Florida will have truly major ramifications for our nation’s young. Distressingly, these three states also together account for well over half the amount of state government budgetary deficits this year.
The days of reckoning in Texas will come much sooner than 2025. By 2015, the number of residents seventeen and under is projected to grow by nearly 11 percent, to 6,527,000. This translates into an additional 500,000 Texas students by 2015. California and Florida will necessarily respond to this challenge in different ways from Texas. Initial conditions for higher learning are also different. The higher education configuration in California is singular: a university system focused on research and teaching long respected worldwide, an accessible twenty-three campus state university system that has made great strides, and arguably the broadest, and perhaps the best, system of community colleges in the nation. All together, this system made California the international leader in public higher education, in terms of both quality and accessibility, in the last half of the 20th Century. Texas occupies an intermediate position between California and Florida: fewer leading research universities (absolutely and per capita) than California, but more than in Florida. Both Texas and Florida boast relatively strong community colleges, but in neither Texas nor Florida is there a counterpart to the state system that enfolds a total of 407,000 students on campuses in Fullerton, San Jose, Fresno, San Diego, and other major sub-regions.

Most indicators of access and quality in Texas suffer greatly in comparison to other states, especially large ones.

A recent study from the Brookings Institution provides a good basis for some key comparisons. These suggest that while higher education in Texas was steadily gaining ground until a decade ago, it has been falling back steadily since the mid-nineties.

In the early nineties, college enrollment as a percent of the population 18-24 was almost as high in Texas (29.8 percent) as in the U.S. as a whole (31.8 percent). But by 2001, the Texas figure had slipped to 28 percent, while the national figure rose above 33 percent. College participation rates present a similar pattern: the proportion of Texas high school graduates in year 2000 who entered college the following fall was 32.5 percent, versus 37.5 nationally. Moreover, college participation rates for Texas' low-income families were
considerably below the national average by 2001. For the U.S. as a whole, the rate was 23.1 percent, a rate fully 45 percent higher than that for Texas\(^8\) (15.9 percent).

Employers in Texas seem more dissatisfied than their counterparts elsewhere with the preparation provided by colleges and universities. For the U.S. as a whole, 46 percent of employers express satisfaction about the job skills of graduates. Half of California employers express satisfaction, but less than a quarter of Texas employers (24 percent). (Kain, et. al., Brookings.)

Texas has also been falling behind in finance of public higher education. As one might expect, state appropriations per $1,000 of personal income peaked during the oil-fired boom of the early eighties, reaching 10 percent, or roughly 25 percent higher than the U.S. average. The Texas figure dipped to the U.S. average by 1987, rose again relative to the rest of the national between 1987 and 1996, only to fall below the national average by 1999 (Kain, et. al.).

Texas also does not fare well in cross-state comparison of resources per student in public higher education. Table 2 presents information on state appropriations and tuition plus fees at six major AAU research institutions of the Association of American Universities (AAU). There it is evident that the average state appropriations per student for the other five schools was about 47 percent higher than the level for U.T. Austin, even when the U.T. figure includes income from the Available University Fund. Tuition and fees per student in the other universities were 63 percent higher than for U.T. Overall resources per student (state appropriation plus tuition) was fully 53 percent higher than for U.T.

Higher education once occupied a privileged position in the share of Texas State spending, peaking at nearly 14 percent in 1984. This percentage has declined steadily since then, so that the Texas share (at just above 6 percent) now lies just above the average for the rest of the nation.
Table 2
State Appropriations, Tuition, and Fees
Per Full-Time Student (FTE)
Five AAU Public Research Universities and U.T. Austin
FY 1999-2000

<table>
<thead>
<tr>
<th>University</th>
<th>(1) State Appropriation Per Student (FTE) (thousand)</th>
<th>(2) Tuition And Fees Per Student (thousand)</th>
<th>(3) Total 1 + 2 (thousand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U. C. Berkeley</td>
<td>14.4</td>
<td>8.2</td>
<td>22.6</td>
</tr>
<tr>
<td>UCLA*</td>
<td>15.2</td>
<td>6.4</td>
<td>21.6</td>
</tr>
<tr>
<td>Illinois</td>
<td>9.5</td>
<td>5.7</td>
<td>15.2</td>
</tr>
<tr>
<td>Michigan*</td>
<td>9.7</td>
<td>13.8</td>
<td>23.5</td>
</tr>
<tr>
<td>Wisconsin*</td>
<td>10.7</td>
<td>7.5</td>
<td>18.2</td>
</tr>
<tr>
<td>Average, five schools</td>
<td>(11.9)</td>
<td>(8.3)</td>
<td>(20.2)</td>
</tr>
<tr>
<td>U.T.-Austin</td>
<td>8.1**</td>
<td>5.1</td>
<td>13.2</td>
</tr>
</tbody>
</table>

* Universities with medical schools as part of main campus.
** For U.T.-Austin, this figure includes income from available university fund.

Source: IPEDS Finance and Fall Enrollment Reports from data exchange of the Association of American Universities.

Research universities are unique sources of innovation and creativity quite apart from their implications for access and for economic mobility. Research universities, public and private, also draw talent into the state, and are critical in retaining talent. For example, while about 16 percent of Rice undergraduates are from Harris County, Harris County accounts for almost a third of Rice alumni. Research universities provide the foundation for science-based industry, including those dependent upon biotechnology, nanotechnology, and information technology. But the promise of 21st Century jobs cannot be fulfilled with declining public support of universities. The falling share of higher education in overall state appropriations has been accompanied by a declining share of appropriations to Texas' two best known public research universities: University of Texas-Austin and Texas A&M. Twenty years ago, these two
universities garnered 14 percent of total state appropriations for higher education. By 2001-2002, this share had declined to 12.5 percent (Kain, et.al.). One result is that state appropriations now provide but 22 percent of the operating budget of the University of Texas, and 32 percent of that of Texas A & M.

Both institutions are examples of highly regarded, high-impact universities. Educational quality and impact for universities are notoriously difficult to measure; reliable measures are not found in rankings provided by national magazines. One measure does have the advantage of being readily recognized both in the United States and abroad: membership in the select Association of American Universities (AAU), consisting of the sixty-two leading research universities in the U.S. and Canada.

By this measure, higher education in California enjoys decided advantages quite apart from the much higher resources it provides per student (see Table 2). California has a population 50 percent greater than Texas, but has nine AAU universities (six public and three private). Texas has but three, two public and one private. New York, with a population smaller than Texas by two million, has seven (four private, three public). Illinois, with about 60 percent of the Texas population, boasts three (one public, two private), Pennsylvania has four AAU universities, while North Carolina, with one-third the people, has two (one public, one private).

These institutions all draw upon the same national and international pool for faculty and administrative talent. The California and New York AAU members, public and private, are particularly vigorous in recruiting faculty and students away from the Texas universities, as are M. I. T., Yale, and other Eastern schools. State government in California has been especially active in financing newer avenues of university research in nanotechnology, biotechnology, and information technology (nano-bio-info technology). The state has recently allocated $400 million for these fields for the California University System; this action has elicited an $800 million match from one private sector for a total of
$1.2 billion in new funds for nano-bio-info. California public universities alone spend 21 percent more on R & D than does all of Mexico.

One reflection of the impact and pull of M.I.T. is that since 1970, M. I. T. alumni and faculty have started more than 4,000 companies that by 2000 had generated more than $200 billion in world sales (Juan Enrique, p. ____). This helps explain why, just in the past year, M.I.T. has been able to draw away extremely talented researchers from U.T. Faculty at A & M and other leading Texas schools remain vulnerable to raiding parties from universities on both coasts.

At the same time, Texas’ best-known public research universities have become less, not more, competitive in salary for faculty in the past two decades. Consider U.T. Austin. In 1980 average faculty salary was $55,000 per year (Kain, et.al.) not very different than from leading public schools all over the nation and leading private schools in the region. By 2001, the relative position for U.T.-Austin deteriorated sharply, as indicated in a multi-year sample of salary history at twenty-nine leading research universities. In most years since 1995, U.T. has ranked last or next to last among the twenty-nine schools in the sample. By academic year 2000-2001, the average salary at U.T. Austin was $71,100, compared to the public and private average of $88,100 nationally. Worse still, the average for private universities nationwide ($92,600) was 29 percent higher than for U.T. (see Table 3).

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Average Salary by University Type for AY 2000-2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private University Average* (N = 18)</td>
<td>92.6</td>
</tr>
<tr>
<td>Public University Average* (N = 10)</td>
<td>80.0</td>
</tr>
<tr>
<td>Average, All Universities in sample* (29)</td>
<td>88.1</td>
</tr>
<tr>
<td>U Texas, Austin</td>
<td>71.1</td>
</tr>
</tbody>
</table>

Sources:  
* MIT salary survey, 7/01 (Survey conducted each year for twenty-nine leading research universities)  
** Personal presidential communication
V. Constraints

State support for public higher education has declined steadily both nationally and in Texas over the past two decades. The decline has been somewhat sharper in Texas relative to the rest of the nation. The next few years offer limited prospects for a turnaround. Nationwide, forty-six states experienced together a budget gap of $37 billion in the past fiscal year; the gap for the current year is projected at almost $60 billion. At this writing, the projected 2003 budgetary gap for Texas is estimated at not less than $7 billion and as much as $11 billion.

Detailed analysis of how the Texas budget and for that matter, those of other states comes to this juncture is easily available elsewhere. The mild recession of 2001 and sluggish economic conditions in 2002 account for part of the problem. But so does the more lasting effects of implacable growth in health care costs and the increasing cost of criminal corrections, especially in Texas.

Costs for Medicaid, the mandated federal-state health program for the poor and disabled, have been rising inexorably both in Texas and nationwide, crowding out prospects for state outlays in other areas, including education. It is not widely recognized that Medicaid now covers more people (44 million vs. 40 million) and more total spending than Medicare. Even a decade ago, Medicaid was the fastest growing state expense, expanding at rates in excess of 15 percent annually in some states, including North Carolina. In Texas, Medicaid expenses as a percent of total state government expenses more than doubled from 1980 to 1998 (Brookings). While many states have begun to trim Medicaid eligibility standards, the scope for significant savings is minimal unless or until there are major changes in federal regulations. Little relief is in sight, certainly not from the federal budget.

At the same time, overall correctional expenses have exploded across the nation and in Texas. Nationwide, 0.7 percent of the population is in prison; in Texas this share is almost 50 percent higher. Budgetary pressure from
corrections has been growing rapidly in Texas for years. In 1986, the Texas general fund spent $3.1 billion on state colleges and universities, about 5.25 times that for corrections. According to the Houston Chronicle, between 1986 and 2000 this ratio dropped to 1.7, as amounts spent on corrections grew by 346 percent compared with 47 percent for higher education. As a result, the corrections share in total state spending reached almost 5 percent in 2000. Consider that in 1980, the share of higher education was (at 13 percent) about eight times higher than that for corrections. By 2000, the corrections share was just a notch or two below that for higher education.

High growth rates in Medicaid and corrections outlays are not the only forces crowding out outlays for higher education. Snowballing costs of state employee health insurance (up 100 percent since 1994-95) or twice the increase in overall state spending\(^1\) have also played a major role as well. But the pressure on higher education spending has not been confined to the expenditure side of the budget. In Texas and elsewhere, the tax side has contributed as well. Texas is among the states most dependent upon the general sales tax, with combined state local rates reaching up to 8.25 percent, among the five highest rates in the nation. The scope for further rate increases is limited; unless the sales tax base is broadened to include more services important in upper-income consumer budgets, sales tax revenues will barely grow apace with state income. At the same time, sales tax bases of all forty-six states using this levy have been eroded by the growth of Internet sales, since states generally cannot collect sales tax on Internet purchases, especially those from out-of-state. This effect has been relatively small thus far in most states including Texas, but stands as a quite significant threat to state sales tax revenues over the coming decade.

VI. Remedies: A Beginning

It comes as small comfort to know that Texas is not by any means the only state facing a thicket of financial problems in public higher education. But we have a lot more young people to worry about than any state but California.
Budgetary constraints require a very high degree of resourcefulness in approaching the problem both in the short and long term: a return to more robust economic growth, whenever that occurs, will do little to relieve the budgetary pressures just outlined, dependent as they are on federally mandated rules (Medicaid) and demographics (crime and rapid growth in the number of the young in Texas).

Longer term, any workable solution will almost certainly require the granting of much greater budgetary autonomy than is now enjoyed by public higher-education institutions. Greater autonomy would, inter alia, involve much greater latitude in setting and retaining tuition, greater freedom to raise and spend outside funds, sensible use of special funds such as the Telecommunications Infrastructure Fund, and fuller authority for universities in purchasing, property management, selection of technology, and in personnel decisions. In exchange for greater autonomy, the universities would need to commit to state established goals for accessibility and affordability.

1. Decentralization of Tuition Decisions

In Texas, tuition decisions are highly centralized in Austin. For both in-state and out-of-state students, revenues from tuition flow to the State Treasury.\textsuperscript{12} Nationwide, in states as diverse as Michigan, Oregon, and North Carolina, there has long been a palpable trend toward allowing individual state college and university campuses the option of setting and keeping tuition for their schools, provided they agreed to devote a share of any additional receipts to added need-based financial aid. An implausible reason for opposing this move would be a belief that Texas has less capacity to administer financial aid to needy students, an extremely doubtful proposition.

Texas is now one of the few remaining states that does not allow universities the flexibility of retaining tuition paid by their students. Serious consideration needs to be given to a policy change that would allow Texas institutions both to set and retain tuition revenue.\textsuperscript{13}
2. **Greater Freedom in Raising and Spending Outside Funds**

Research universities in Texas are among the nation’s leaders in innovative research, both basic and applied. These research activities provide the basis for our future well being as measured by health, literacy and employment. In addition the short-term economic benefits from research dollars flowing into the state are quite significant. If patterns prevailing elsewhere also obtain in Texas, every incremental dollar of these external research funds generates not less than one additional dollar in economic activity in the state. According to the controller, incremental economic activity is as much as $3.32.

Notwithstanding these benefits, Texas continues to hamstring the research capacities of the best of our public universities by requiring them to turn over to the state general fund 50 percent of the money they receive in indirect costs of research financed with federal funds. Here, Texas is again out of step with the rest of the nation, with predictable results, especially in the most vibrant new areas of technology, especially biotechnology. In 2002, Texas boasted fewer than 40 biotech startups. By contrast, according to *Science* magazine, California has 293, Massachusetts 141, New York 127, and North Carolina 72 (*Science*, July 5, 2002).

State legislators elsewhere have recognized the perverse effects of this practice on incentives for seeking federal research dollars. In virtually all states where universities receive significant federal research funds, all indirect costs remain with the institution doing the research. Table 4 portrays the handling of indirect costs in eighteen states from coast to coast, which together account for well over 90 percent of federal research funds awarded to public universities outside Texas. Of the eighteen states, sixteen allow universities to keep 100 percent of research overhead on federal grants. Only one other state—Maryland—follows the Texas practice. Two states—North Carolina and Virginia—formerly followed the Texas pattern, but have moved to zero retention in order to provide enhanced incentives for seeking federal research funds. Notably, federal research inflows into North Carolina responded as expected (see
Table 5). After 1998, when the state changed its policy, federal research funds to the University of North Carolina at Chapel Hill increased by 60 percent over the next four years, following nearly a decade of stagnation.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>State Government Provisions on Capture of University Overhead on Federal Research Grants*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. States allowing universities to retain 100 percent</strong></td>
<td><strong>B. States that formerly allowed partial or zero retention</strong></td>
</tr>
<tr>
<td>3. Colorado 11. New York</td>
<td><strong>C. States that allow 50 percent retention</strong></td>
</tr>
<tr>
<td>5. Georgia 13. Ohio</td>
<td>2. Texas</td>
</tr>
<tr>
<td>7. Indiana 15. Pennsylvania</td>
<td></td>
</tr>
<tr>
<td>8. Iowa 16. Virginia</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Presidents’ and Chancellors’ Offices, seventeen states. A) California University System: 94 percent is retained by each campus where research takes place, 6 percent goes to the central office of the system.

The disincentives inherent in the Texas policy are substantial, as is the annual financial penalty to Texas public universities’ $35.6 million in fiscal 2002. The benefits of ending what has become an archaic practice would extend well beyond U.T. Austin and Texas A&M. The Greater Houston Partnership estimates that in Houston alone, the positive revenue impact for 2002 would have been not less than $4.7 million for the University of Houston, Prairie View, and TSU combined.
3. Accessibility and Private Education

Like most other states, Texas has long recognized that accessibility to higher education is greatly enhanced by providing limited assistance to students enrolled in private institutions, thereby reducing some of the pressure for expansion faced by public institutions. In Texas, this valuable support is channeled through the Tuition Equalization Grant (TEG). TEG grants for such students are per capita need-based payments available only for qualified Texas residents in private colleges. At an average grant of $2,327 per student, TEG grants enable the state to support college enrollment at a cost well below per-student outlays for students in public institutions.

Overall, private higher education institutions in Texas enrolled nearly 112,000 students in forty schools in the fall of 2001. Fully 24 percent of students in private institutions benefited from TEG grants in that year.

---

### Table 5
External Funding of Research
University of North Carolina – Chapel Hill
1992-2002

<table>
<thead>
<tr>
<th>Year</th>
<th>US $ Million Total Sponsored Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>211.1</td>
</tr>
<tr>
<td>1993</td>
<td>227.6</td>
</tr>
<tr>
<td>1994</td>
<td>244.6</td>
</tr>
<tr>
<td>1995</td>
<td>274.9</td>
</tr>
<tr>
<td>1996</td>
<td>249.0</td>
</tr>
<tr>
<td>1997</td>
<td>290.7</td>
</tr>
<tr>
<td>1998</td>
<td>305.0</td>
</tr>
<tr>
<td>1999</td>
<td>345.0</td>
</tr>
<tr>
<td>2000</td>
<td>376.0</td>
</tr>
<tr>
<td>2001</td>
<td>438.0</td>
</tr>
<tr>
<td>2002</td>
<td>488.0</td>
</tr>
</tbody>
</table>

Source: University of North Carolina Vice Chancellor for Research and Graduate Studies.
TEG grants deserve continued emphasis. They are especially critical for students enrolled in smaller private schools all over the state. But they are also highly cost-effective methods for enhancing accessibility and diversity in higher education. In 1997, 9.5 percent of TEG students in private higher education were African American, 13.5 percent were Hispanic, seventy percent of degrees awarded were bachelors, 23 percent masters, and 1.2 percent doctorate.

4. Sensible Use of the Telecommunications Infrastructure Fund

The Texas Telecommunications Infrastructure Fund (TIF) supports and connects public as well as private institutions in the state. TIF is widely viewed as a national model among enlightened programs to build a statewide telecommunication infrastructure for libraries, health care facilities, and private and public schools across the state. The initial fund totaled $1.5 billion, to be allocated over ten years beginning in 1995.

The benefits to education, from K-12 through higher education, have been substantial. TIF has strengthened information networks, increased access to academic information, expanded wireless coverage, and video-conferencing capabilities. Above all, by robustly linking institutions, TIF has encouraged collaborative research across educational institutions in a highly cost-effective fashion.

Unfortunately, this program is now threatened largely because legislators have been made aware of the improvements made possible by this very important investment. Absent strong support, TIF will either be dissolved or its focus shifted away from education to corrections. Such action would be a woeful example of misdirected policy toward education generally, including higher education.

VII. Conclusion

Making a rewarding, fruitful life has long turned upon how we capitalize on what we could learn. Making a good living in an increasingly interconnected, technological world depends more than ever upon what we do with our brains.
Making a good life and making a good living are necessary conditions for sustaining a good society. Prospects for making a good life and a good living for future generations hinge crucially upon today’s decisions over higher education.

Demographic changes, social phenomena, and public policy limitations severely constrain our choices for supporting higher education. Some of the demographics are inexorable, at least over the foreseeable future. Census data and projected immigration patterns tell us that Texas will be one of the three states most affected by demographic trends between now and 2025, creating still greater enrollment needs. The social trend most corrosive of prospects for higher education finance stems from criminal behavior and the need for corrections outlays. This trend is not inexorable, but cannot be easily reversed in short order. Policy limitations are not at all inexorable; but rather they are self-imposed and are of two types: federally mandated expenditure programs and state-mandated tax policies. The answer to relentless growth in the share of Medicaid in state budgets must be sought not in Austin, but in Washington, where federal mandates were mindlessly imposed to begin with. We have chosen to respond to a very legitimate social need: medical care for the poor, with the most primitive tool available.

The answer to the states’ growing fiscal debility is to be found in Austin, if it is to be found at all. The structure of the state sales tax will not support significant rate increases, nor will it allow tax revenues to keep pace with economic activity. Short-term, base-broadening incorporating more consumer services would serve this objective. Longer term, agreements to bring consumer Internet purchases in the base would help. After that, the only other option available would be the “third-rail” of Texas politics: an individual income tax.

The economic slowdown of the past two years could end by January or extend for another year or so. But it will come to an end at some point. There is little sense in awaiting a return to respectable economic growth before addressing critical higher education issues facing the state. Significant changes in federal
Medicaid mandates seem unlikely. Arresting the exploding growth of corrections outlays will require years, not months. Tuition and tax reform, anyone?

M. Gillis
November 13, 2002

- Views expressed herein are those of the author only and not his institution.

References:

2. Oliver Wendell Holmes, “The Deacon’s Masterpiece, or the Wonderful One-Hoss Shay: A Logical Story.”
3. The analogy dates from 1965, from _____ Harbison and _____ Myers.
12. Public universities are funded by a formula based on number of credit hours. Tuition dollars are recycled through the formula.
14. Direct costs of research are those clearly attributable to a given research project, such as salaries, lab equipment and supplies. On average, 70 percent of research grants are for direct costs. Indirect costs are those that cannot be attributed directly to the project. These “overhead” items include those for depreciation, operation, and maintenance of buildings, and for general university administration.
15. Ten years ago, the average TEG grant was $1,271. The Maximum grant for the most needy, was $1,880 in 1991 and $3,380 in 2001.