

TUITION, APPROPRIATIONS AND CONSTITUTIONAL MANDATES IN ARIZONA

A Report from the Office of the University Economist

February 2006

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SUMMARY

The Arizona Constitution specifies that university instruction shall be as nearly free as possible. The Arizona Supreme Court in 1935 interpreted this to mean that fees could be neither excessive nor unreasonable. The Arizona Board of Regents (ABOR) considers resident undergraduate tuition that is among the lower one-third of the 50 states' senior public institutions to meet these criteria. Resident undergraduate tuition at each of the three state universities currently is in the middle of the lower one-third of these senior public institutions.

The current ABOR policy is only one of many possible interpretations of fees being neither excessive nor unreasonable. Since societal benefits accrue from an educated populace, public support for higher education in the form of general fund appropriations can be justified. In fact, the Arizona Constitution specifies that the Legislature shall make appropriations not only for the maintenance of all public educational institutions, but for their development and improvement as well. This provision coupled with the stipulation that tuition shall be nearly free suggests that, according to the authors of the Arizona Constitution, the primary obligation for funding higher education should reside with the Legislature rather than with the student.

Detailed analyses of the levels of tuition and public-sector appropriation in Arizona yield several conclusions:

- Tuition increases from today's modest levels could occur without violating the terms of the "neither unreasonable nor excessive" mandate. The rationale for raising tuition stems from detailed comparisons with other schools and with references to the literature on the costs and private benefits of higher education, in light of the financial support for university students that is available, the massive private returns that accrue, the correlation between high private returns and quality education, and the increasing costs of quality education.
- Public appropriations, especially for Arizona's traditional four-year universities, have not advanced at a rate that allows the state to serve a growing student population while competing for resources in the increasingly costly higher-education marketplace. This suggests that the state has not met its obligation to provide for "development and improvement" of the public university system as mandated by the Arizona Constitution. The declining public support is occurring despite increasing evidence that investments in higher education yield quantifiable societal returns in addition to the widely recognized private financial returns.
- Any increases in tuition likely would be accompanied by enhancements to programs that assure financial access by all academically qualified residents, thereby remaining consistent with the "nearly free" intent of the Arizona Constitution.

Simulations based on national averages reveal the precise amounts of tuition and appropriation increases that can take place when expenditure levels are benchmarked against peer and aspirant peer schools. The simulations offer a framework for comparing costs and expenditures at levels that are neither excessive nor unreasonable but position Arizona's university system at funding levels that will enable it to deliver on the promise of a high-quality education for the state's burgeoning university-age population.

CONSTITUTIONAL AND STATUTORY MANDATE

Two sections of the Arizona Constitution address the two major funding sources of state universities. Tuition and fees (hereafter referred to as tuition) is covered in Article 11, Section 6:

“The university and all other state educational institutions shall be open to students of both sexes, and the instruction furnished shall be as nearly free as possible.”

Government appropriation is covered in Article 11, Section 10:

“... the legislature shall make such appropriations, to be met by taxation, as shall insure the proper maintenance of all state educational institutions, and shall make such special appropriations as shall provide for their development and improvement.”

Thus, the Legislature has a constitutional mandate to provide funding to the universities beyond a minimal level needed to maintain the universities. However, the constitution provides no specific guidance regarding the determination of the level of appropriation needed.

Similarly, no specific guidance is given regarding the interpretation of instruction being “as nearly free as possible.” A 1935 Arizona Supreme Court decision held that the constitutional requirement is not violated if fees are neither excessive nor unreasonable.

A more recent (May 11, 1999) Arizona Attorney General (AG) Opinion (No. I99-011) more broadly addresses the issue of the setting of university tuition, particularly discussing the clause “as nearly free as possible.” It notes that the definitions of “excessive” and “unreasonable” cannot be determined as a matter of law, but rather is a factual inquiry. Based on statute and legal opinion, an undefined word is to be given its ordinary definition:

- excessive: exceeding the usual, proper, or normal
 - unreasonable: evidencing indifference to reality or appropriate conduct
- (definitions as provided in the AG opinion). Such standards are necessarily subjective.

The setting of tuition was delegated by the Legislature (Arizona Revised Statutes 15-1626) to the Arizona Board of Regents (ABOR). Differentiation is to be made between residents and non-residents and between undergraduate and graduate students. The ABOR considers a variety of factors in setting tuition, including availability of student financial aid, student demographics, and the per-student cost of education at Arizona’s universities. As a test of its reasonableness, tuition in Arizona is compared to tuition at other public universities.

Two groups established by the ABOR — the Commission on Student Costs and Financial Assistance (1994) and the Study Group on the Tuition Setting Process (1996) — rendered the opinion in 1998 that the existing ABOR policy that maintained Arizona resident undergraduate tuition in a position within the lower one-third of resident tuition among the 50 states’ senior public institutions was consistent with the constitutional charge that instruction be “as nearly free as possible.”

BACKGROUND AND CONTEXT

The constitution provides a dual mandate: to keep tuition affordable and to maintain quality by relying on appropriations from state tax collections to maintain and improve the quality of education of the system. However, the lack of precision in the mandate leaves unanswered questions:

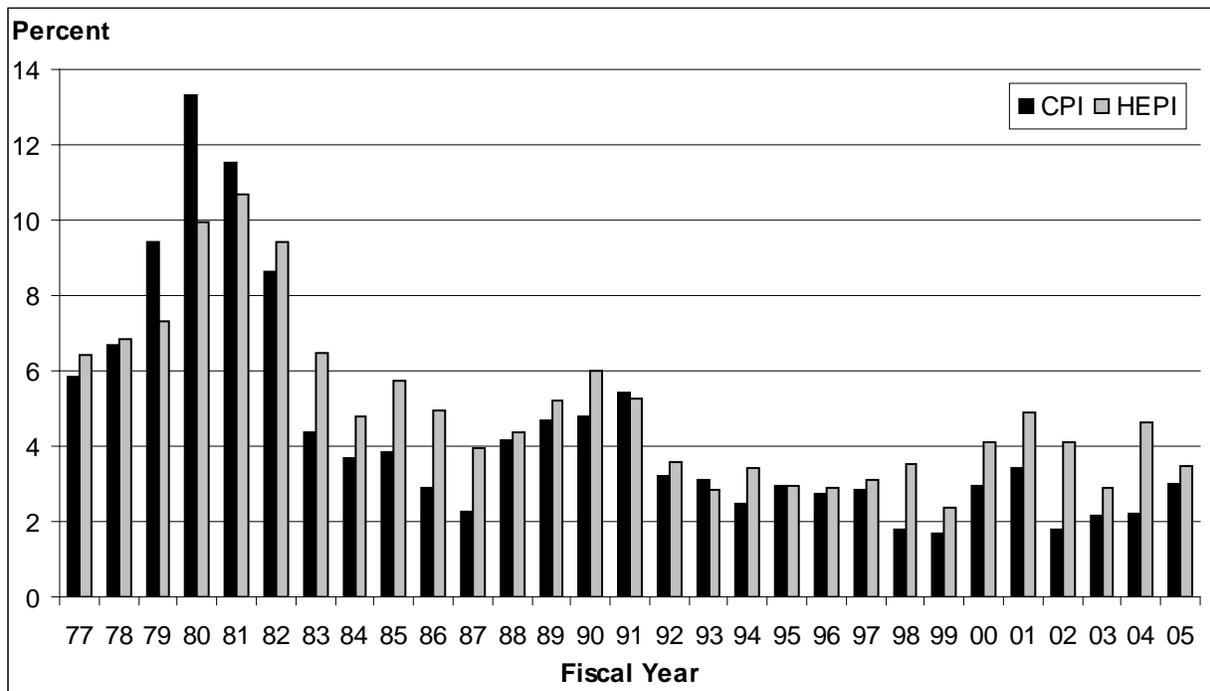
- What is the overall benchmark for “nearly free” tuition and should it be established on a “relative” basis in comparison with tuition at other universities or on an “absolute” basis in comparison with the overall returns that higher education delivers?
- Has the state met its constitutional obligation with respect to providing for the “development and improvement” of the university system, delivering a quality of education aspired by most Arizonans?

An examination of the trends in tuition and appropriations can provide context for addressing these basic questions.

Tuition

Since the mid-1970s, tuition at Arizona universities has increased in all but two years. An annual increase in tuition is necessary because the costs of providing an education are constantly rising. Inflation, as measured by the Consumer Price Index (CPI), has occurred in each of the last 50 years. In most years (all but six of the last 29), the Higher Education Price Index (HEPI) has increased more than the CPI (see Chart 1).¹ Since 1983, the HEPI has advanced at an average of

**CHART 1
ANNUAL PERCENT CHANGE IN CONSUMER PRICE INDEX
AND HIGHER EDUCATION PRICE INDEX**



Source: Commonfund Institute and U.S. Bureau of Labor Statistics.

¹ HEPI measures the average relative level in the prices of a fixed market basket of goods and services purchased by colleges and universities each year through current fund educational and general expenditures excluding expenditures for research. It is a tool enabling schools to determine increases in funding necessary to maintain real purchasing power and investment. It is related to, but distinct from CPI.

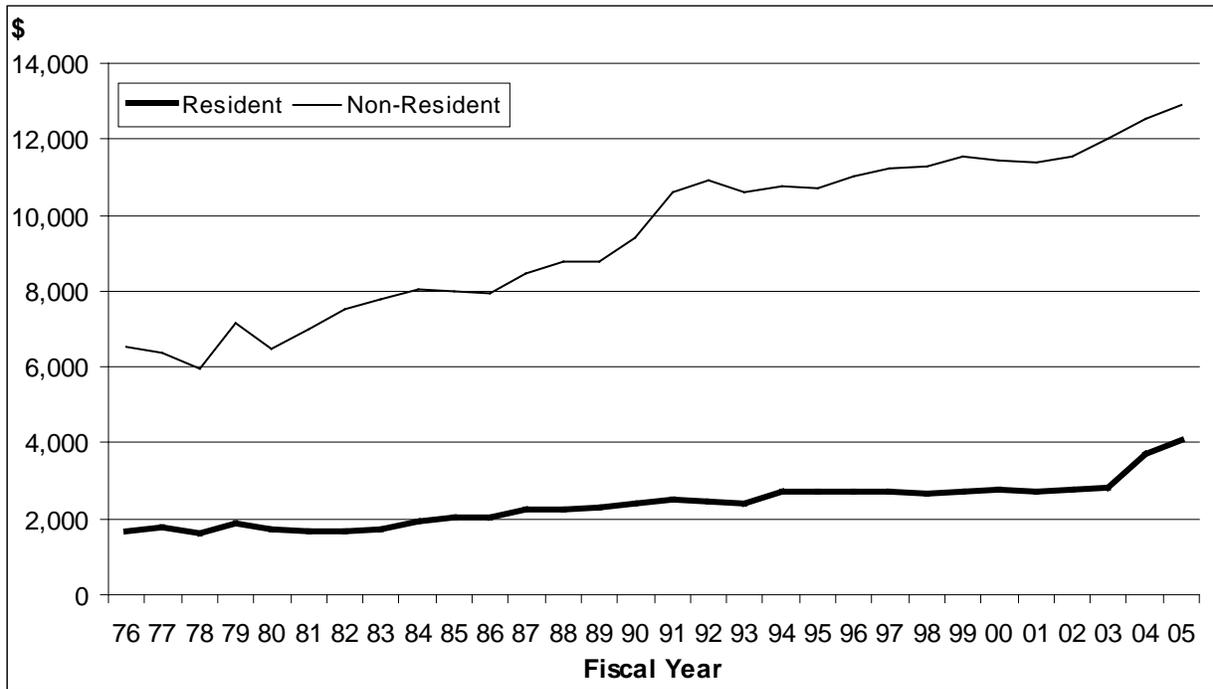
just more than 1 percentage point a year more than the CPI, with the CPI increase greater than the HEPI rise in just three years, all by marginal amounts.

Resident and non-resident tuition at Arizona State University adjusted by the HEPI is depicted in Chart 2. Despite recent increases, the average annual real rise in resident undergraduate tuition at ASU has been about 3 percent over the last 30 years (less than 2 percent per year in the first 28 of those years). Non-resident tuition has grown slightly more rapidly.

This real rise in tuition at ASU is similar to that experienced nationally. Average inflation-adjusted tuition at public four-year universities in Arizona is compared to the national average in Chart 3. Large increases in tuition in recent years followed several years of nearly flat levels, both in Arizona and nationally.

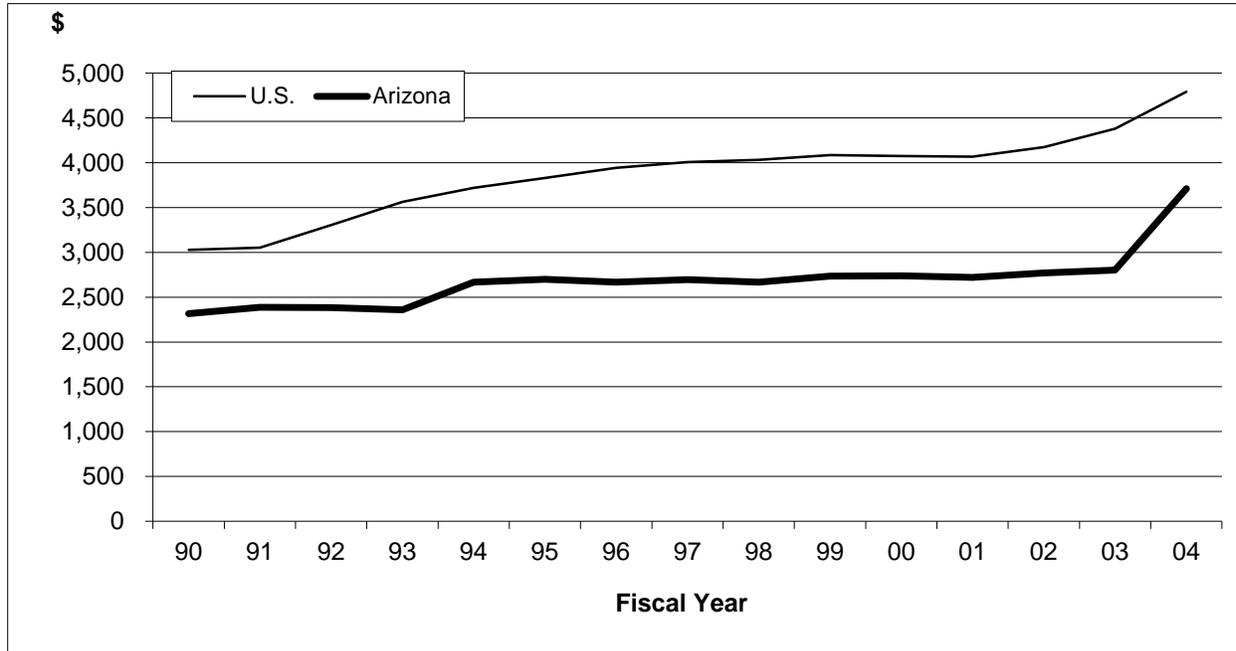
Professor Paul Courant, in a recent (November 2005) presentation at a Chicago Federal Reserve Bank symposium, explains rising tuition in the context of inherently rising costs of the university enterprise:

CHART 2
UNDERGRADUATE TUITION AT ARIZONA STATE UNIVERSITY
ADJUSTED BY THE HIGHER EDUCATION PRICE INDEX (2004-05 = 100)



Source: Office of Institutional Analysis at Arizona State University and Commonfund Institute.

CHART 3
AVERAGE RESIDENT UNDERGRADUATE TUITION AT PUBLIC FOUR-YEAR
UNIVERSITIES ADJUSTED BY THE HIGHER EDUCATION PRICE INDEX
(2004-05 = 100)



Source: National Center for Educational Statistics and Commonfund Institute.

- Universities face structural challenges in keeping pace with the productivity gains observed in many businesses while confronted with labor-market pressures to pay market-driven salaries because quality is maintained by high labor intensity.²
 - The “conservatory nature” of universities prevents them from pursuing the private sector’s efficiency-enhancing “innovation as substitution” model. For example, Courant notes that “UM (the University of Michigan) needs to maintain and analyze far more information about 1957 than GM (General Motors) needs to retain about 1957 Chevys.”)
 - Universities face pressure to incorporate costly “cutting-edge” technology.
- Courant concludes that given these cost pressures, the high rate of private return that degree holders realize, and the societal benefits that accrue from college graduates, universities will probably grow faster than an average goods producing industry.

² Industries that are service oriented and where quality is measured by service provided will be challenged to raise productivity at a pace matched by other industries. As William Baumol noted, a higher faculty-student ratio is seen as a measure of university quality. But, in other industries, increases in output per worker are pursued relentlessly.

While Courant's arguments provide a basis for increasing tuition, the level at Arizona's universities remains well below those at comparable institutions across the nation. As seen in Chart 3, average tuition in Arizona relative to the U.S. average has ranged over 15 years from 22 percent lower in 1991 and 2004 to 36 percent less in 2003.

According to the ABOR, the annual average increase in tuition among a 50-state peer group was 9 percent over the last five years and 7 percent over the last 10 years. Prior to the sharp increase in resident undergraduate tuition at ASU in 2003-04 and 2004-05, its figure had ranked at the bottom of the states. Despite this recent jump, tuition at ASU, UA and NAU remains firmly among the bottom third in the nation among the 50 states' public institutions used by the ABOR (see Chart 4). Resident undergraduate tuition at ASU, UA and NAU in 2005-06 was about 30 percent less than the national average of the 50 universities and about 62 percent less than the most expensive university.

Appropriation

While ASU tuition has increased on an inflation-adjusted basis, the real state appropriation for ASU per FTE student has been up and down over time, with the 2003-04 and 2004-05 figures being the lowest since at least 1975-76 (see Chart 5). Following five consecutive years of inflation-adjusted decreases ranging from 3 to 10 percent per year, the real appropriation per FTE student rose less than 1 percent in 2004-05. The cumulative inflation-adjusted change through 2004-05 in ASU's per-student appropriation ranged from decreases of 7 percent from the 1975-76 and 2002-03 levels to a drop of 38 percent from the 1985-86 figure.

The appropriation per FTE student at ASU is considerably less than that of the average ABOR comparable university. Using the latest (preliminary 2003-04) data from the NCES, ASU ranked 30th among the 45 institutions for which data are available, with a figure 23 percent less than the average of these institutions.

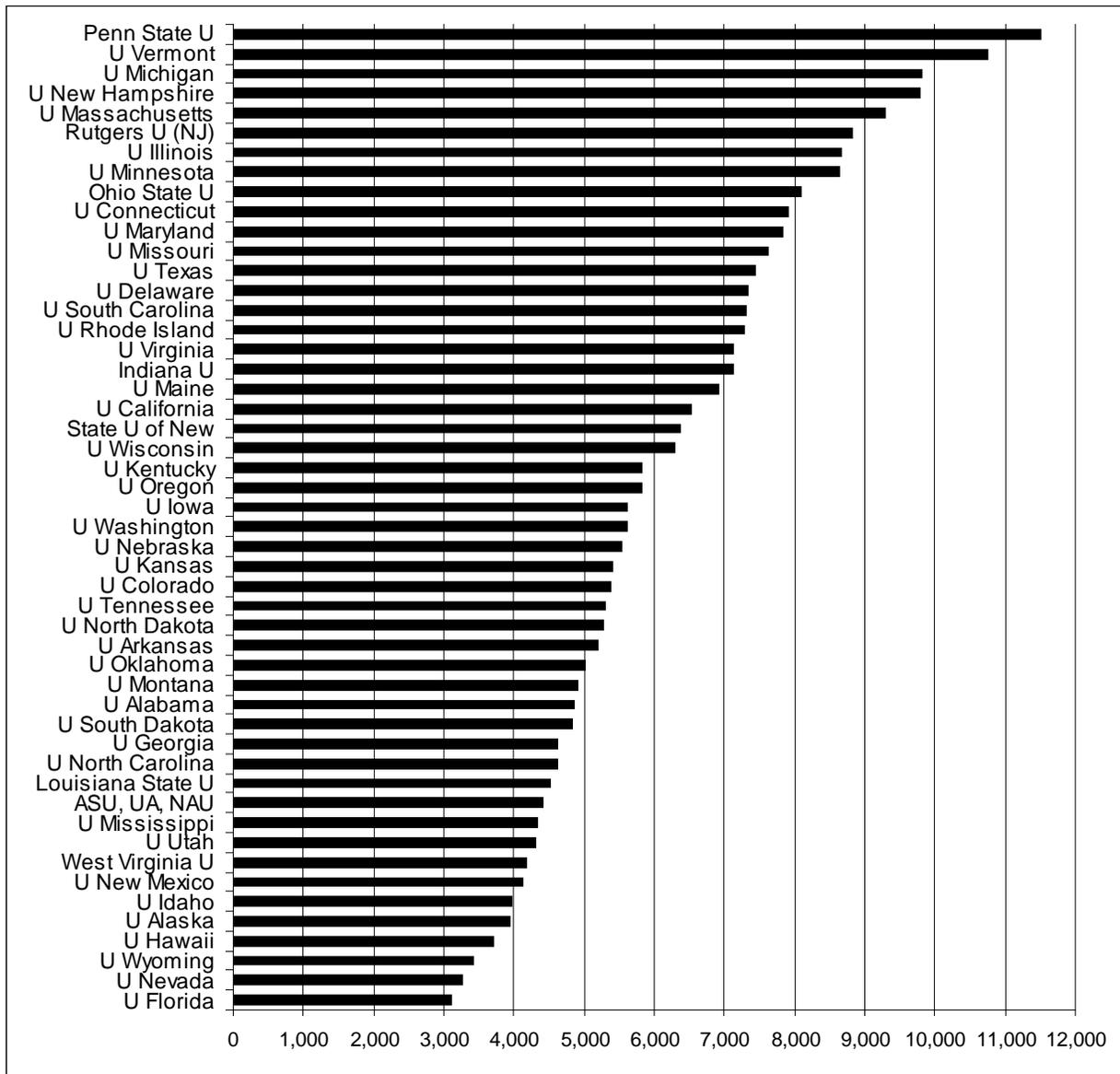
The NCES has complete data on state and local government appropriations per FTE student at public institutions of higher education (including community colleges) only through 2000-01. Real per-student state and local government appropriations have fluctuated by year but were lower in 2001 than in the mid-1980s nationally and in Arizona. Per-student appropriations in Arizona ranged from 1 to 15 percent less than the national average (see Chart 6).

State Support for Traditional Four-Year Public Universities

One way of gauging the state's progress toward meeting its constitutional obligation for promoting the development of higher education is a simple comparison of state appropriations through time, adjusted by a measure of potential student population. The Center for the Study of Education Policy at Illinois State University annually produces "the Grapevine report," which contains detailed data on the amount of state government appropriations that have been allocated to higher education, by state for each individual campus. Historical data span the period 1960 to 2005.³

³ The Grapevine report provides an incomplete picture of the total amount of funding provided to higher education in each state since local government funding (often allocated to community colleges) is not included. However, assuming that state government tax dollars are the primary source of support of state public universities, the Grapevine report does provide a basis for comparing how states support traditional

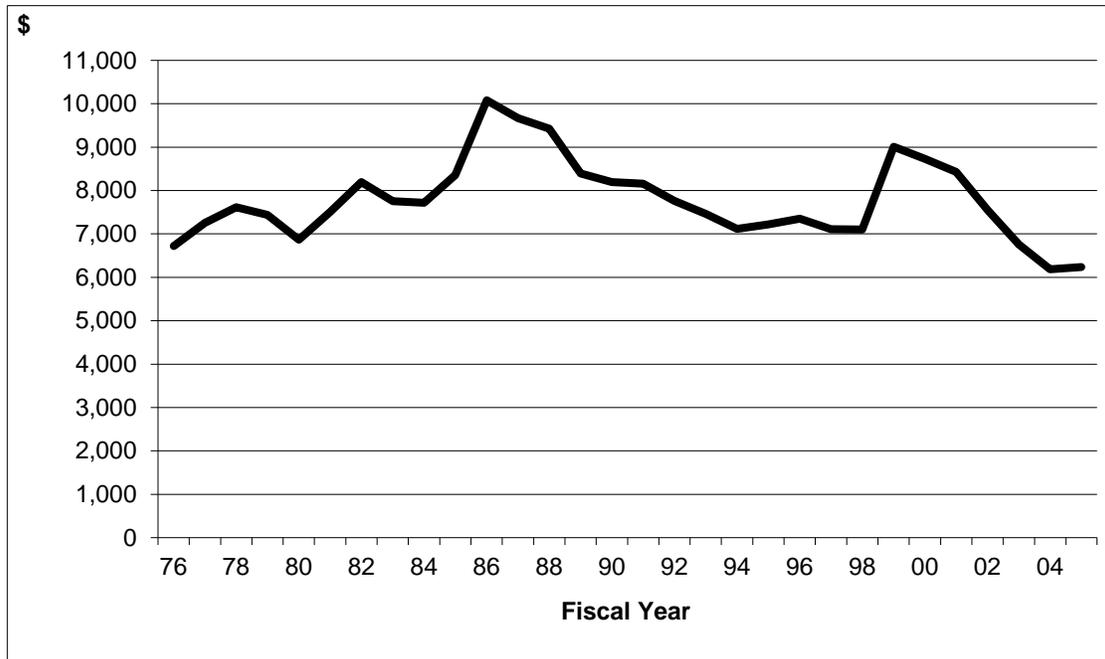
CHART 4
RESIDENT UNDERGRADUATE TUITION AND MANDATORY FEES
50-STATE COMPARISON OF SENIOR PUBLIC UNIVERSITIES, 2005-06



Source: Arizona Board of Regents.

four-year public universities — especially if the comparisons are based on change in funding through time rather than on absolute levels of support.

CHART 5
STATE APPROPRIATION FOR ARIZONA STATE UNIVERSITY PER FULL-TIME-EQUIVALENT STUDENT ADJUSTED BY THE HIGHER EDUCATION PRICE INDEX (2004-05 = 100)



Source: Office of Institutional Analysis at Arizona State University and Commonfund Institute.

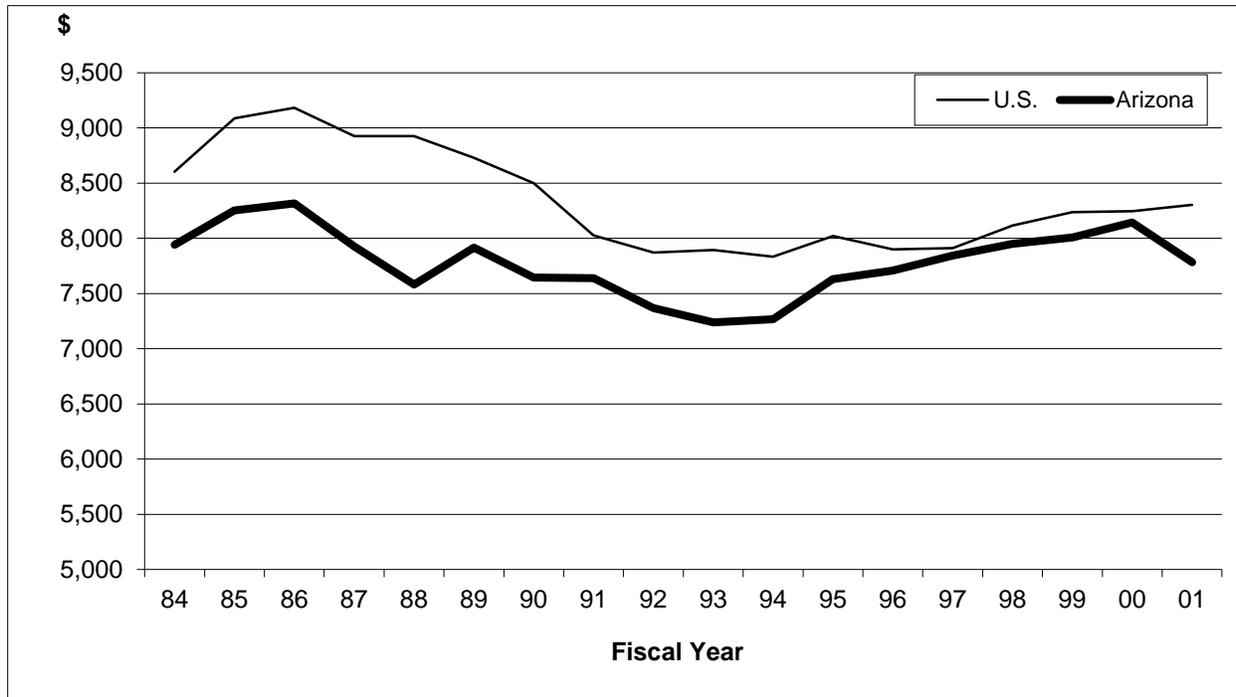
The Grapevine report also aggregates state government funding for higher education by state, with adjustments for total state population and total state personal income. The most recent data from the report reveal that the total amount of state funding for higher education in Arizona grew by 39 percent from 1995-96 to 2005-06, ranking 31st highest among the states. In 2005-06, Arizona ranks 39th on funding per dollar of personal income and 45th on funding per capita.⁴

Rather than use broad measures such as total population to compare state appropriations from the Grapevine report, data on the relative numbers of university-age people in each state provide a better benchmark for normalizing state appropriations and help provide context for determining whether Arizona has met its appropriation obligation. The analysis uses both aggregate state data and institutional data for the list of schools used by the Arizona Board of Regents in tracking resident undergraduate tuition.

The top panel of Table 1 provides 20- and 40-year comparisons of state support for higher education in Arizona to the rest of the nation using the growth in total state appropriations adjusted for the growth in the university-aged population. The bottom panel of Table 1 offers the comparison based on 47 of the 50 campuses (Grapevine did not present data in a manner that allowed identification of the ABOR comparable school for California, Idaho, and New York)

⁴ The amount of local funding for community colleges is not included in the report so the numbers reflect state support for higher education, primarily the intensity of support for state four year public universities.

CHART 6
STATE AND LOCAL GOVERNMENT APPROPRIATION PER FULL-TIME-EQUIVALENT STUDENT AT ALL PUBLIC INSTITUTIONS OF HIGHER EDUCATION ADJUSTED BY THE HIGHER EDUCATION PRICE INDEX (2004-05 = 100)



Source: National Center for Educational Statistics and Commonfund Institute.

used for the annual tuition comparison. For illustration, ASU’s Tempe campus is used to represent Arizona in the bottom panel comparisons.

Before any adjustment, the overall rate of growth in state government support for higher education in Arizona generally has been greater than in the average state as measured by both aggregate state appropriations and by support for ASU relative to the peer institutions. However, after adjusting for the size of the college-age population, the pace of growth in state support in Arizona has been quite low, a reflection of the explosive growth that has taken place in the university-age population in Arizona. Over both time periods and on both measures — aggregate state appropriations and appropriations at ASU relative to the peer institutions — Arizona ranks among the bottom 10 states on state appropriations for higher education at traditional four-year public universities per university-age resident.

Overall Higher Education Finance

Historical context, comparisons with other states, and controls for costs and demographic pressures can provide some perspective on whether the dual constitutional mandate has been met, but questions remain: Just how much should be spent to achieve quality educational outcomes at a school like Arizona State University? Has adequate funding through tuition revenues and state appropriations been provided?

TABLE 1
CHANGE IN STATE GOVERNMENT APPROPRIATIONS

	Arizona	Average State	Arizona Rank
State Totals			
Unadjusted, 1985 to 2005	4.5%	3.4%	16
Unadjusted, 1965 to 1985	8.9	8.5	20
Per University-Age Resident, 1985 to 2005	1.4	3.3	46
Per University-Age Resident, 1985 to 2005	5.8	8.2	50
Arizona State University Relative to Peer Institutions*			
Unadjusted, 1985 to 2005	4.5	3.8	13
Unadjusted, 1965 to 1985	4.8	6.2	41
Per University-Age Resident, 1985 to 2005	1.4	3.2	41
Per University-Age Resident, 1985 to 2005	1.9	6.1	47

* Data were not available for the peer institution in three states: California, Idaho and New York.

Source: Appropriations data from the Center for the Study of Education Policy at Illinois State University (“the Grapevine report”). University-age population data estimated from decennial census population counts of the U.S. Census Bureau and secondary school enrollments from the National Center for Educational Statistics.

An understanding of the overall educational finance picture can be informed by an analysis of the per-student revenues and costs at a list of relevant comparison schools. For illustration, the list of senior public institutions monitored by the ABOR to establish the funding targets for ASU is used in this discussion. The NCES provides data on 45 of the universities listed by ABOR.⁵ Similar exercises could be conducted for any particular list of schools, such as peers or aspirant peers.

Table 2 summarizes the information available for the key revenue and expenditure categories. Among the 45 universities, expressed on a full-time-equivalent student basis, ASU ranked just below the middle at 24th on total tuition and fees.⁶ Per FTE student, ASU ranked 30th on state and local government appropriations and 41st on other revenues. ASU ranked similarly low on per FTE expenses, with ranks of 33rd on instructional support, 19th on academic support, 38th on student services, 30th on institutional support, and 38th on other expenses.

In each category except academic support, the figure for ASU was at least 12 percent less than the average of the ABOR comparable universities. Overall, ASU received and spent 19 percent less than the comparison schools. The total instruction-related expenditure as a share of appropriation plus tuition was 94.7 percent for ASU and 95.6 percent for the average of the other schools. Tuition as a share of the combined revenue was 45.6 percent for ASU and 42.4 percent for the comparison group.

⁵ Financial data were not available for five of the ABOR comparable universities — those in Connecticut, Delaware, New Jersey, North Carolina and Pennsylvania, four of which are among the 13 schools with the highest undergraduate tuition listed in Chart 4.

⁶ ASU’s rank on this measure differs from that displayed in Chart 4 because this measure divides total tuition received — from all students including resident and non-resident — by the FTE number of students in 2003-04.

TABLE 2
A COMPARISON OF THE FINANCES OF ARIZONA STATE UNIVERSITY
AND THE AVERAGE OF 45 SENIOR PUBLIC INSTITUTIONS*, 2003-04

	ASU-Tempe	Peer Average	Difference
Revenue Per Full-Time-Equivalent Student:			
Total (resident and nonresident) Tuition Revenue	\$5,449**	\$6,221	-12%
State and Local Government Appropriations	6,507	8,452	-23
Total	11,956	14,673	-19
Expenditure Per Full-Time-Equivalent Student:			
Instruction	6,677	8,718	-23
Academic Support	2,395	2,334	3
Institutional Support	1,524	1,866	-18
Student Services	722	1,105	-35
Total	11,318	14,023	-19
 Expenditure as a Share of Revenue	 95%	 96%	 -1

*Data for universities in Connecticut, Delaware, New Jersey, North Carolina and Pennsylvania were not available among the 50 senior public institutions specified by the Arizona Board of Regents.

**This estimate, compiled by the NCES, represents total tuition revenue, for the Tempe campus, from all students (residents and nonresident) divided by total FTE's on the Tempe campus.

Source: National Center for Educational Statistics.

A Simple Simulation

A simulation was run to provide insight on two questions: What level of spending is appropriate? What should be the proportions funded by tuition revenues and by state appropriations? Two assumptions are made in the simulation:

- Spending at the level of the average school in the ABOR list delivers desired quality.
- Benchmarking tuition and state appropriations at levels comparable to the average school on the ABOR list provides compliance with the constitutional mandates.

Using the NCES data for 2003-04, simulations were run to determine levels required to make funding per FTE student at ASU at or near the average of the list of ABOR senior public universities. The simulations are based exclusively on expenditure and revenue data directly related to the instructional operations of the institutions.⁷ Table 3 depicts the results of these simulations. Spending at ASU is compared with levels of spending at the 45-school mean, at 90 percent of the 45-school mean, and at 110 percent of the 45-school mean. The simulations alter ASU tuition and appropriation numbers to produce ratios that match the average school in the survey, with total tuition revenues representing the same share of total revenue as it does for the comparison group. The simulations also align spending on instruction-related items to 94.7 percent of the total tuition and government support and adjust tuition to 42.4 percent of combined revenue, to match the percentages observed in the 45-state sample. To attain

⁷ This is an important omission. Many schools in the comparison list generate considerable revenue from their research efforts and from private funding, allowing them to spend more on research and on infrastructure needs.

TABLE 3
SIMULATION RESULTS FOR ARIZONA STATE UNIVERSITY, 2003-04

Per Full-Time-Equivalent Student	Level	Current Shortfall*
90 Percent of Peer Average:		
Total (resident and nonresident) Tuition Revenue	\$5,599*	\$150*
State and Local Government Appropriations	7,607	1,100
Total Revenue from Tuition, Fees and Appropriations	13,206	1,250
Total Instructional Expenditures	12,621	1,303
100 Percent of Peer Average:		
Total (resident and nonresident) Tuition Revenue	6,221*	772*
State and Local Government Appropriations	8,452	1,945
Total Revenue from Tuition, Fees and Appropriations	14,673	2,717
Total Instructional Expenditures	14,023	2,705
110 Percent of Peer Average:		
Total (resident and nonresident) Tuition Revenue	6,843*	1,394*
State and Local Government Appropriations	9,297	2,790
Total Revenue from Tuition, Fees and Appropriations	16,140	4,184
Total Instructional Expenditures	15,425	4,107

*The simulation reflects changes in “total” tuition revenue that would be required to attain parity. The simulated changes could conceivably rely more or less on increments to the resident and nonresident components of tuition revenue.

Source: Simulations using National Center for Educational Statistics data.

expenditures on instruction at 90 percent of the 45-state average, tuition revenue per FTE student at ASU would need to increase about \$150 overall and the appropriation would need to increase about \$1,100 per FTE. Per FTE student, increases of \$772 in tuition and \$1,945 in the appropriation would allow spending at ASU to equal the average level observed in the 45-state sample. A target of 110 percent of the 45-state average would require \$1,394 and \$2,790 in additional tuition and appropriation per FTE student. The simulation reflects changes in “total” tuition revenue that would be required to attain parity. The simulated changes could conceivably rely more or less on increments to the resident and nonresident components of tuition revenue.

Comparison to the University of Michigan

An alternative simulation analysis can be conducted by picking a list of target or aspirant peer schools. For example, the Goldwater Institute recently released a report that suggested ASU emulate the financial strategy adopted by the University of Michigan because the UM is ostensibly less reliant on government support for funding its total operations.

Table 4 reports the 2003-04 NCES revenue and expenditure data per FTE student for ASU and the UM. ASU’s figures were far below those of the UM in every category. Total tuition revenue at the UM is considerably higher per student than the undergraduate level reported in Chart 4

TABLE 4
A COMPARISON OF THE FINANCES OF ARIZONA STATE UNIVERSITY
AND THE UNIVERSITY OF MICHIGAN, 2003-04

	ASU-Tempe	UM-Ann Arbor	Difference
Revenue Per Full-Time-Equivalent Student:			
Total (resident and nonresident) Tuition Revenue	\$5,449*	\$13,815	-61%
State and Local Government Appropriations	6,507	8,181	-21
Total	11,956	21,996	-46
Expenditure Per Full-Time-Equivalent Student:			
Instruction	6,677	15,602	-57
Academic Support	2,395	3,714	-36
Institutional Support	1,524	2,419	-37
Student Services	722	1,347	-46
Total	11,318	23,082	-51
Expenditure as a Share of Revenue	95%	105%	-10

*This estimate, compiled by the NCES, represents total tuition revenue, for the Tempe campus, from all students (residents and nonresident) divided by total FTE's on the Tempe campus.

Source: National Center for Educational Statistics.

because out-of-state tuition at the UM is nearly four times greater than in-state tuition and UM enrolls a high proportion of out-of-state students.⁸

Targeting a fee structure comparable to the University of Michigan would result in ASU being more reliant on tuition than is currently the case but state appropriation increases also would be required.

Simulation Caveats

In drawing implications from these simulations it is important to note that different prescriptions for funding will depend upon the choice of peer or aspirant peer schools, that differences in revenues and expenditures take place each year, and that research revenues and expenditures (omitted from the simulations) are important for high quality universities. The data in these simulations is taken from FY 2003-04, the year that comparison school data are available. It is likely that the percentage disparities between ASU and the comparison schools remain and that would be a more useful metric, for comparison and drawing conclusions about funding shortfalls, than the actual numbers at this juncture.

⁸ The presence of a medical school at the UM but not at ASU contributes to the higher UM per student figure. Also missing from the comparison is that the UM is able to spend substantial amounts per FTE student due to earnings from their \$5 billion endowment and from research activities.

RE-EXAMINING THE INTERPRETATION OF “AS NEARLY FREE AS POSSIBLE”

The current ABOR policy of keeping tuition and fees within the bottom third of the states’ senior public institutions is one of many possible interpretations of fees being neither excessive nor unreasonable. Taken broadly, the interpretation of “as nearly free as possible” has two possible extremes:

(1) A possible interpretation of the Constitution is that the framers of the Constitution intended education to be a public good and therefore truly “as nearly free as possible” to the student. The primary and secondary school (K-12) system is indeed nearly free to the student, being supported almost entirely by proceeds from the state land trust and state appropriations that originate with tax payments made by all residents (and some non-residents). Article 11, Section 6 of the Constitution makes no differentiation between universities and the K-12 system. Thus, under this interpretation and coupled with the legislative obligation set out in Article 11, Section 10 of the Constitution, the vast bulk of the funding of the universities should come from legislative appropriation, as is the case in the K-12 system. Using this interpretation, tuition could be considerably lower than the current figure. However, as the simulations suggest, state support would have to be far higher in this case to keep the spending on instructional services from being even further below the average amounts spent in other states.

(2) Using the Supreme Court’s interpretation, tuition could be set at the highest level possible without becoming excessive or unreasonable. Tuition similar to that charged by the most expensive state universities — adjusted for differences in costs, student demographics, and availability of financial aid among these states — could be considered “reasonable.” However, such a high level might be considered “excessive.” Thus, tuition — again adjusted for costs, demographics and financial aid — might be targeted instead to be equal to that charged by the average state. Alternatively, tuition as a proportion of total university revenue or combined tuition and appropriation might be used as targets, as in the simulation conducted in the previous section.

Either of the interpretations in (2) would result in tuition higher than the current figure. Before any adjustment for costs, demographics or financial aid, tuition at ASU is nearly 30 percent less than the average ABOR comparable institution and 57 percent less than the average of the five institutions with the highest tuition (which includes the University of Michigan). Setting tuition higher than the current figure is more consistent with the concept of user fees (promoting more responsibility and accountability on behalf of the consumer and producer) and would recognize the high private returns that accrue to investment in college education. Even if tuition was increased, the Legislature still would be bound by the constitutional mandate to provide appropriations for the development and improvement of the educational institutions.

Higher tuition levels need not be “excessive or unreasonable” as a result of several key considerations:

- Higher tuition need not necessarily pose an undue financial burden. Various studies have indicated that financial barriers are not a significant impediment to earning a university degree due to the numerous financial aid programs that are available. (See the Federal Reserve Bank of Minneapolis December 2005 article “Is College Unaffordable?” and pages 19 to 23 and 54 to 56 of the October 2005 report “The Value of Higher Education: Individual and Societal Benefits” available at <http://economist.asu.edu/p3/education>.) Moreover, tuition increases traditionally are accompanied by enhanced financial aid packages targeted at those

individuals with the least capacity to finance their own education or access existing capital market outlets.

- A university graduate realizes a very substantial return in the form of higher wages over his/her working life relative to the student's investment in higher education (the payment of tuition and the loss of earnings while a student). (See pages 12 to 18 of the October 2005 report. This suggests that substantially higher tuition is justifiable (again assuming that financial assistance is available to those initially unable to pay the higher tuition). The rate of return from attaining a university degree was estimated at 11.7 percent for men and 11.6 percent for women in the October 2005 report, well above the average stock market return of 7 percent. The calculations were based on the difference in average wages received over a lifetime between university and high school graduates, foregone earnings while a student attends college, and average tuition at public and private universities of \$15,000 per year (at public universities, this figure includes the value of the government appropriation per student as well as tuition). Thus, the private return would be even higher if calculated using only actual ASU tuition of just more than \$4,000 per year. Even if the direct cost of attending college were doubled to \$30,000 per year, the private rate of return still would exceed 9 percent for men and be 8.5 percent for women.
- In the competitive environment for high quality research and teaching faculty, universities face increasing cost pressures and are challenged to realize productivity efficiencies that take place across industries. Higher tuition revenues invested in a manner that meets these cost challenges is an effective investment for students — the most important stakeholder in the enterprise.
- Increasing tuition revenues is one of the few tools available to universities faced with less-than-sufficient growth in state appropriations and pressure to maintain or raise quality. Greater reliance on tuition as a proportion of total resources enhances efficiency by linking the services rendered by the producer to the price paid by the consumer.
- Tuition at Arizona universities is well below that paid by students at peer and especially aspirant peer institutions

CONCLUSION

The “nearly free” clause of the Arizona Constitution implicitly assumes, by shifting the financial obligation away from students, that most of the benefits of higher education accrue to society — with little discernible private return. When the constitution was drafted, the financial benefit to individuals from higher education probably was less than the substantial wage differentials realized currently (wage differentials based on educational attainment have increased substantially over the last 20 years). However, the economy and society as a whole do indeed benefit from enhanced educational attainment of residents beyond the return realized by the individual. (See pages 25 to 31 of the October 2005 report.) This social benefit, which results in part from enhanced productivity of all workers, provides a rationale why public support (in the form of government appropriation) should be maintained even if tuition was substantially increased. In addition, Article 11, Section 10 of the Constitution requires the Legislature to make such appropriation.

There is indeed a dual constitutional obligation for the state to provide higher public education with affordable tuition rates and with quality maintained by legislative appropriations. The analysis in this report reveals that, in keeping with this mandate, a strong argument remains to support increases in both tuition rates and state appropriations in continuing efforts to “provide for the development and improvement” of the university system.

Greater overall support for higher education would allow Arizona universities to increase the quality of education in the state while expanding the pool of scholarship funds to maintain and broaden access to higher education in the state. Evidence exists that the benefit of a university education is higher for those attending higher-quality institutions. Thus, an increase in quality would enhance the prosperity of all Arizona residents and businesses. Such enhanced quality may well be necessary in the 21st century economy of international competition and rapidly evolving technologies.