

IS RESIDENT UNDERGRADUATE INSTRUCTION AT ARIZONA STATE UNIVERSITY AS NEARLY FREE AS POSSIBLE?

A Report from the Office of the University Economist

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ARIZONA STATE UNIVERSITY

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BACKGROUND ON THE “AS NEARLY FREE AS POSSIBLE” CLAUSE

1. The Arizona Constitution, written in 1912, specifies that instruction at state educational institutions “shall be as nearly free as possible.” No guidance is provided as to what constitutes “as nearly free as possible.”
2. The Constitution also specifies that the Arizona Legislature shall make appropriations of tax revenues for “the proper maintenance” of state educational institutions and “shall provide for their development and improvement.” No guidance is provided regarding the level of appropriation needed.
3. The Arizona Supreme Court, in 1935, ruled that in order to satisfy the constitutional requirement that instruction be “as nearly free as possible” that tuition and fees must be “neither excessive nor unreasonable.”
4. An Arizona Attorney General opinion, written in 1999, indicated that the definitions of “excessive” and “unreasonable” cannot be determined as a matter of law, but rather is a factual inquiry. Further, the ordinary definition is to be assigned to each word. The opinion defined “excessive” as “exceeding the usual, proper or normal.” “Unreasonable” was defined as “evidencing indifference to reality or appropriate conduct.”
5. The Legislature, in statute, delegated to the Arizona Board of Regents the setting of tuition and fees. Many factors are considered in setting tuition and fees, including per-student cost of education, student demographics, and the availability of student financial aid.
6. The Board of Regents has interpreted tuition and fees within the bottom one-third of the 50 states’ senior public institutions to be consistent with “as nearly free as possible.” This comparison of tuition and fees to those at other public universities is considered a test of reasonableness. Two study groups in 1998 concurred that the Board of Regents’ policy was consistent with the constitutional language.
7. The “lower one-third” tuition policy of the Board of Regents is consistent with the Attorney General opinion that the definition of “excessive” and “unreasonable” be determined by factual inquiry, and also is consistent with the definition of “excessive” as exceeding the “usual” or “normal.” However, the existing policy is just one of many possible alternatives that would be consistent with the Arizona Constitution.
8. An economic analysis of instructional revenues and expenditures at Arizona universities in comparison to peer schools indicates that tuition and fees in Arizona are less than average. For this analysis, “average” was equated to “usual” or “normal,” which in turn indicate that tuition and fees are not “excessive” or “unreasonable.” Based on the Supreme Court decision, tuition and fees therefore are consistent with the Arizona Constitution’s “as nearly free as possible” clause. (See the following for more information on this analysis.)

AN ECONOMIC ANALYSIS OF “AS NEARLY FREE AS POSSIBLE”

In a February 2006 University Economist report, *Tuition, Appropriations and Constitutional Mandates in Arizona*, accessible from <http://economist.asu.edu/arizona-universities>, a comparison was made of finance at Arizona State University to peer schools in other states. The analysis focused on the average of the peer schools, equating this to “usual” and “normal.” The peer schools are the 50 states’ senior public institutions, as defined by the Arizona Board of Regents.

Actual data from the 2003-04 school year were used. The analysis included expenditures and revenues — both tuition/fees and state appropriations — directly related to the instructional operations of the institutions. Spending on instruction-related items was set equal to the average percentage of the total of tuition and government support. Tuition was set equal to the average percentage of combined revenue. The results indicate that tuition and fees at Arizona State University were \$772 (12 percent) less than the full-time-equivalent student average of the senior public universities on the Board of Regents’ list.

Overview

This report provides context for a discussion of the “as nearly free as possible” provision. It examines:

- The family income distribution of resident undergraduate financial-aid seekers at Arizona State University in academic year (AY) 2005-06.
- The family-income distribution of all resident undergraduates including the nonloan-aid distribution of all resident undergraduates at Arizona State University in AY 2005-06.
- A comparison of tuition and fees historically at Arizona State University, using overall inflation, per capita personal income, federal adjusted gross income per taxpayer, and housing prices as separate points of reference. Depending on data availability, some of the comparisons are made from as far back as 1933-34 to the present.
- A comparison of combined tuition and state support as a source of financial capacity for serving instructional needs at Arizona State University for AY 1991-92 to present.
- The share of income devoted to tuition in comparison with the large private returns that accrue to degree holders.

Resident Undergraduate Financial-Aid Seekers at ASU, AY 2005-06

One of the clearest pictures of the support received by students in need of financial assistance is to examine the financial support received by resident full-time undergraduate students from all sources, both including and excluding loan-package support, at various family income levels. Table 1 contains a summary of financial aid paid to those 12,000 full-time resident undergraduate students who sought the assistance. The table reveals that the aid package awarded to these full-time resident financial-aid seeking students exceeded the \$4,311 tuition charge by 88.7 percent when all sources — including loans — are considered. Even when loans are excluded, all gift aid exceeded tuition by about 7 percent. For these support-seeking full-time resident undergraduate students, approximately 60 percent of the tuition charges were offset by aid supplied directly from ASU.

The last column in Table 1 denotes the percent of family income that must be allocated to pay tuition at the indicated family income levels. At no income strata does the net (after scholarship aid) cost of tuition exceed 2 percent of family income. Chart 1 provides a visual comparison of these relative burdens, stratified by income level.

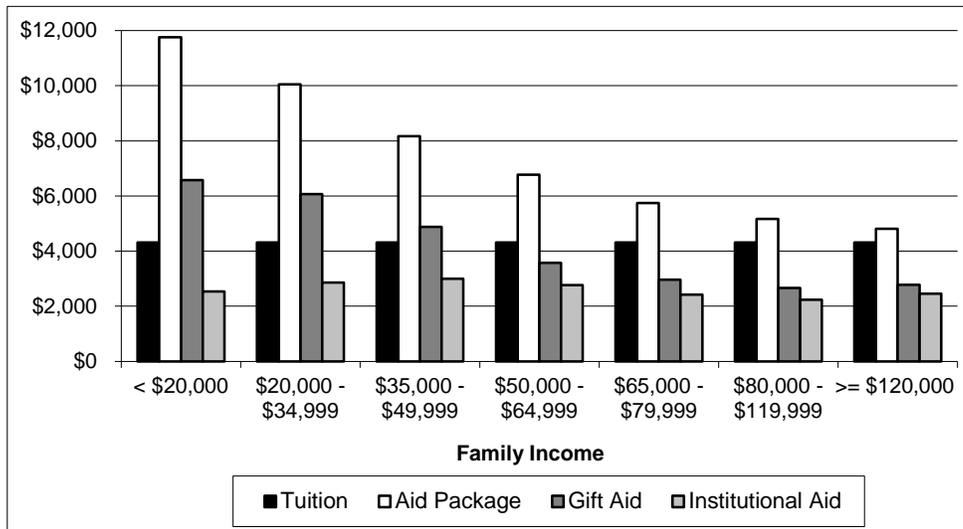
While the 11,999 full-time resident-aid-seeking students do not represent all ASU students or even all full-time resident students, it is clear that there is a considerable amount of financial aid available for students who sought support. Tuition, net of financial aid, is a small share of their reported family incomes.

Estimating the Income Distribution of all Resident Undergraduates

The income distribution of all undergraduates was estimated using data from Table 1 for financial-assistance seekers and from the decennial census for families reporting college-age dependent students in their households. The analysis assumes that financial-aid seekers account for 11,999 of the support recipients while the remaining 15,777 scholarship recipients received aid on a merit basis, regardless of income. A third group of nonaid recipients is assumed to be comprised predominantly of high-income student families.

More refined estimates of this distribution could be obtained by ascertaining the home addresses of students in these three groups: Free Application for Federal Student Aid (FAFSA filers), other support recipients, and nonscholarship recipients. The addresses collected in this fashion can be associated with average household income by zip code using data from the decennial census.

**CHART 1
TUITION AND AID, FULL-TIME, ARIZONA RESIDENT UNDERGRADUATES
ARIZONA STATE UNIVERSITY, 2005-06**



Source: Arizona State University, Financial Aid Office.

TABLE 1
OVERVIEW OF TUITION AND FINANCIAL AID: FULL-TIME, ARIZONA RESIDENT UNDERGRADUATES,
ARIZONA STATE UNIVERSITY, 2005-06

Family Income	Number of Students¹	Tuition²	Total Aid Package³	Aid without Loans⁴	Total Gift Aid⁵	Institutional Aid Only⁶	Share of Tuition Covered by Aid Package	Share of Tuition covered by Aid without Loans	Share of Tuition Covered by Total Gift Aid	Share of Tuition Covered by Institutional Aid Only	Average Family Income	Share of Family Income Required to Pay Tuition after Total Gift Aid
Less than \$20,000	2,972	\$4,311	\$11,755	\$6,663	\$6,581	\$2,540	272.7%	154.6%	152.7%	58.9%	\$ 8,946	-25.4%
\$20,000 - \$34,999	1,908	4,311	10,049	6,139	6,070	2,859	233.1	142.4	140.8	66.3	27,544	-6.4
\$35,000 - \$49,999	1,542	4,311	8,172	4,939	4,878	3,003	189.6	114.6	113.2	69.7	42,182	-1.3
\$50,000 - \$64,999	1,223	4,311	6,777	3,618	3,578	2,765	157.2	83.9	83.0	64.1	56,986	1.3
\$65,000 - \$79,999	1,067	4,311	5,748	3,000	2,964	2,425	133.3	69.6	68.8	56.3	72,223	1.9
\$80,000 - \$119,999	1,898	4,311	5,173	2,661	2,659	2,242	120.0	61.7	61.7	52.0	97,275	1.7
At least \$120,000	1,389	4,311	4,814	2,782	2,782	2,450	111.7	64.5	64.5	56.8	182,337	0.8
Total	11,999	4,311	8,137	4,640	4,593	2,605	188.7	107.6	106.5	60.4	60,741	-0.5

Notes:

- 1: Limited to students who were full-time undergraduate students for both Fall 2005 and Spring 2006 semesters, Arizona residents, and valid Free Application for Federal Student Aid (FAFSA) filers for 2005-2006.
- 2: Published ASU standard tuition figure for Arizona residents for 2005-2006.
- 3: All types of aid excluding parent plus loan, alternative loans, and short-term loans, paid during Fall 2005 and Spring 2006 semesters.
- 4: Aid excluding all types of loans paid during Fall 2005 and Spring 2006 semesters.
- 5: Average total gift aid excluding veteran's benefits, employee and employee-dependent benefits, and Tuition Payment Resource, paid during Fall 2005 and Spring 2006 semesters.
- 6: Refers to ASU Grant, University Grant, Advantage Grant, ASU Student Trust Fund, Institutional Scholarships, and Program Fee Set-Aside, paid during Fall 2005 and Spring 2006 semesters.

Prepared: Sept 29, 2006/Student Financial Assistance. Data was run on Sept 15, 2006.

Table 2 contains estimates of the income distribution of aid seekers using the distribution of FAFSA filers in Table 1, estimates from the ASU financial aid office, and crude estimates of Hope/Lifetime earning credits based on income levels and tuition burdens. The estimates in Table 2 reflect the total of approximately \$120 million in nonloan financial support that reached 27,776 resident undergraduates in AY 2005-06. Based on a total resident student population of 37,364, this aid represents \$3,218 per student. In addition, a Hope/Lifetime tuition tax credit averaging \$250 across all resident undergraduates is assumed to have been claimed, based on the estimates obtained by the ASU financial aid office. As more data become available from the IRS, more refinements in this estimate could be undertaken. Including all nonloan sources of support and the tuition tax credit, the estimates suggest that the average net undergraduate tuition and fee burden in AY 2005-06 was approximately \$936 per student, far lower than the \$4,404 figure that appears on the ABOR web site.

Including all sources of scholarship aid, the analysis in Table 2 reveals that the \$4,404 tuition and fee total for AY 2005-06, net of all nonloan sources of aid and tax considerations, never exceed 2 percent of average family income with families below \$35,000 paying no net tuition.

TABLE 2
TUITION AND FINANCIAL AID DETAIL: FULL-TIME, ARIZONA RESIDENT UNDERGRADUATES,
ARIZONA STATE UNIVERSITY, 2005-06

Family Income	Average Income	Number of Students	Share of Students	All (nonloan) Support per Student	Tuition less Support	Hope and Lifetime Credit	Tuition less Aid and Hope	Net Tuition Paid as a Share of Income
Less than \$20,000	\$ 8,946	3,682	9.9%	\$6,167	-\$1,763	\$ 0	-\$1,763	-19.7%
\$20,000 - \$34,999	27,544	3,517	9.4	5,202	-798	0	-798	-2.9%
\$35,000 - \$49,999	42,182	3,915	10.5	3,924	480	225	255	0.6%
\$50,000 - \$64,999	56,986	4,391	11.8	3,066	1,338	625	713	1.3%
\$65,000 - \$79,999	72,223	4,556	12.2	2,544	1,860	800	1,060	1.5%
\$80,000 - \$119,999	97,275	10,277	27.5	2,301	2,103	200	1,903	2.0%
At least \$120,000	182,337	7,026	18.8	2,158	2,246	0	2,246	1.2%
Total		37,364	100.0					

Note: Average income taken from distribution of students/families who filed a FAFSA form. Distribution of students estimated from a combination of students who filed a FAFSA form and the decennial 2000 census. Nonloan total aid taken from ASU "Tab A" financial aid reports. Tuition and fees assumed to be \$4,404. Hope and lifetime credit simulated based on a reading of eligibility criteria using assumption that overall average of the credit is \$250 across the entire resident student population. Average net tuition after all nonloan aid and credits is \$936 per student.

TUITION AND FEES FROM A HISTORICAL PERSPECTIVE

Tables 3, 4, and 5 examine tuition and fees for full-time resident undergraduate students from 1933 to the present, over various time periods. Over the 73-year period, charges have increased from \$20 to nearly \$4,700. But a simple nominal comparison ignores the impact of inflation, increases in average income, and that an increasing portion of the cost is offset by scholarship aid. The analysis in the tables reveals how the tuition and fee burden has changed through time in relation to income.

Table 3 reveals that nominal tuition charges have increased from about 5 percent of per capita personal income to nearly 15 percent of per capita personal income today. However, these figures fail to account for the dramatic increase in financial support of higher education that has taken place over the past 73 years. Using available data, it is estimated that about 80 percent of the tuition charge has been offset by nonloan financial support since 2003. During the late 1990s, prior to the passage of the Hope credit, nonloan support averaged about 67 percent of total tuition charges. While earlier data are less precise, it is estimated that scholarship and grant aid in 1993-94 was 62.5 percent of total tuition and fees; the proportion had been only 51 percent in 1983. Scholarship data for 1973 and earlier do not exist and are simply assumed to account for 50 percent of the total tuition charges in the illustration in Table 3.

The net tuition burdens by year are compared with per capita personal income for each year. While household income would be a better measure of capacity, only per capita personal income is available for years prior to 1970. The data suggest that tuition burdens as a share of per capita personal income have been remarkably steady over the last 73 years. Tuition, net of all financial aid as a share of per capita personal income, is about the same as it was in 1933 and has actually fallen from its high in the 1960s.

Data from the abstract of Arizona resident individual income tax returns were used in Table 4 to compare the gross and net tuition burdens as a share of per filer gross incomes. This abstract information reflects all filing categories, including both married filing jointly and single individuals filing returns. The progression of per filer gross income through time is another measure of the rapid acceleration in nominal incomes that has taken place in Arizona over the past 23 years. As in Table 3, the data suggest that nominal tuition as a share of gross income per filer has increased from about 4 percent to 8 percent today, but after accounting for scholarship aid, the net burden has declined slightly as a share of gross incomes reported on tax forms.

Table 4 also reveals that the net tuition burden expressed in 2006 dollars from 1983 to the present has not increased very much in real terms, increasing less than \$7.00 per year. Again, including financial aid in analyzing tuition burdens reveals a very different picture than do simple comparisons of gross tuition over time.

TABLE 3
OVERALL TUITION AND NET PAYMENT IN COMPARISON TO PER CAPITA PERSONAL INCOME:
FULL-TIME, ARIZONA RESIDENT UNDERGRADUATES, ARIZONA STATE UNIVERSITY

	Tuition	Per Capita Personal Income	Tuition as a Share of Per Capita Personal Income	Share of Tuition Offset by Scholarship and Grant Aid**	Tuition Net of Nonloan Scholarship, Tax Credit and Grant Aid*	Tuition Net of Nonloan Scholarship and Grant Aid (2006 dollars)*	Tuition Net of Nonloan Scholarship and Grant Aid as a Share of Per Capita Personal Income
1933-34	\$20	\$307	6.5%	50.0%	\$10.0	\$151.50	3.3%
1943-44	50	1,002	5.0	50.0	25.0	291.18	2.5
1953-54	76	1,716	4.4	50.0	38.0	286.78	2.2
1963-64	230	2,208	10.4	50.0	115.0	757.27	5.2
1973-74	400	4,917	8.1	50.0	200.0	907.66	4.1
1983-84	850	11,673	7.3	51.0	416.5	842.62	3.6
1993-94	1,844	18,293	10.1	62.5	691.5	964.27	3.8
2003-04	3,595	27,044	13.3	80.6	696.3	762.55	2.6
2005-06	4,404	30,157	14.6	78.7	936.3	966.02	3.1
2006-07	4,687	31,707	14.8	78.7	998.3	998.33	3.1

Notes:

*Tuition and mandatory fees published by Arizona Board of Regents and from historical archive.

** Share of nonloan scholarship aid assumed to be the same as 2005-06 amount in 2006-07. Values for 1973-74 and prior are hypothetical, for illustration purposes: No data on scholarships prior to 1983 are available. Estimates in 2003 and later include the impact of Hope/Lifetime tuition tax credits of \$200 for 2003 and \$250 for 2004-2006. Scholarship data for 2003-06 obtained from ASU financial aid office. Data in 1993 and 1983 estimated from various ASU data book reports.

TABLE 4
OVERALL TUITION AND NET PAYMENT IN COMPARISON TO ARIZONA RESIDENT FEDERAL ADJUSTED GROSS INCOME: FULL-TIME, ARIZONA RESIDENT UNDERGRADUATES, ARIZONA STATE UNIVERSITY

	Tuition*	Per Filer Resident AZ Federal Adjusted Gross Income***	Tuition as a Share of Per Filer Federal Adjusted Gross Income	Share of Tuition Offset by Scholarship and Grant Aid**	Tuition Net of Nonloan Scholarship, Tax Credit and Grant Aid*	Tuition Net of Nonloan Scholarship and Grant aid (2006 dollars)*	Tuition Net of Nonloan Scholarship and Grant Aid as a Share of Per Filer Federal Adjusted Gross Income
1983-84	\$ 850	\$21,152	4.0%	51.0%	\$416.50	\$842.62	2.0%
1993-94	1,844	32,719	5.6	62.5	691.50	964.27	2.1
2003-04	3,595	48,527	7.4	80.6	696.32	762.55	1.4
2004-05	4,062	53,062	8.4	77.5	912.03	940.98	1.9
2005-06	4,404	56,905	8.3	78.7	936.29	966.02	1.8
2006-07	4,687	59,238	7.9	78.7	998.33	998.33	1.7

Notes:

* Tuition and mandatory fees published by Arizona Board of Regents and from historical archive; CPI used for inflation adjustment.

** Share of nonloan scholarship aid assumed to be the same as 2005-06 amount in 2006-07. Estimates in 2003 and later include the impact of Hope/Lifetime tuition tax credits of \$200 for 2003 and \$250 for 2004-2006. Scholarship data for 2003-06 obtained from ASU financial aid office. Data in 1993 and 1983 estimated from various ASU data book reports.

*** Income per filer taken from abstract of resident individual income tax payers, various years. Amounts estimated for 2005-2006 based on observed flow of revenue.

Tuition and Housing Prices

Another consideration in assessing the relative cost of tuition payments over time is to consider that many tuition payments are made out of accumulated wealth, not annual income. Table 5 contains a simple comparison of gross tuition and fee charges with the median price of a home annually since 1989. The housing price data are taken from the National Association of Realtors and are based on the Phoenix metro region.

In 1989, gross tuition represented 1.8 percent of the value of the median priced house. Conceivably a family without other resources might have borrowed 1.8 percent of the value of their home to finance a tuition payment. Interestingly, borrowing about 1.8 percent of the median priced home in 2006 would finance resident undergraduate tuition today. Of course, a lower percentage would need to be borrowed today if scholarship aid is taken into account.

Housing has been a great investment in Arizona over time. Investing in education is even better with college degree holders earning up to 80 percent more than high school students in their highest earning years.

**TABLE 5
COMPARISON OF TUITION AND HOME PRICES**

	Resident Undergraduate Tuition	Median Price of a Home, Phoenix Metro Area	Share of Tuition to Home Price
1989-90	\$1,424	\$78,800	1.81%
1990-91	1,540	84,000	1.83
1991-92	1,590	85,500	1.86
1992-93	1,590	86,800	1.80
1993-94	1,844	89,100	2.07
1994-95	1,894	91,400	2.07
1995-96	1,950	96,800	2.01
1996-97	2,009	105,300	1.91
1997-98	2,058	113,700	1.81
1998-99	2,158	120,200	1.80
1999-00	2,259	126,400	1.79
2000-01	2,344	134,400	1.74
2001-02	2,486	139,400	1.78
2002-03	2,583	143,800	1.80
2003-04	3,593	152,500	2.36
2004-05	4,062	169,400	2.40
2005-06	4,404	247,400	1.78
2006-07	4,687	267,000	1.76

Notes:

Median housing prices from National Association of Realtors.

Tuition and mandatory fees published by Arizona Board of Regents.

Tuition and State Appropriations

One of the arguments offered to explain the trajectory of nominal tuition and fee charges in recent years is that state support for higher education has not kept pace with the large influx of students seeking college education. Table 6 compares the cost of resident undergraduate tuition with state support per full-time-equivalent student (FTE) received each of the last 15 years. The numbers represent the amount of money, per resident undergraduate, that ASU has received in state appropriations to support the instruction costs of each resident undergraduate. To account for inflation, the Higher Education Price Index (HEPI) is used for the comparison since the issue is how much funding ASU has received to educate resident undergraduates relative to the costs the institution has faced over time.

The data reveal an increase in the share of the sum of state support and tuition that is paid by tuition, from 22 percent in 1991-92 to 40 percent in 2006-07. The share from tuition has increased not only due to increases in tuition, but due to substantial decreases in inflation-adjusted state appropriations per FTE. Despite the large rises in tuition, overall support from the combined sources has declined in HEPI-adjusted terms.

In this context, tuition increases were low until 2003-04, when the implicit pressure from lack of legislative support became too great. Despite the large tuition increases in 2003-04 and 2004-05, total funding from tuitions and state appropriations rose only modestly from the very low figure of 2002-03 and remained considerably below the inflation-adjusted level of the 1990s.

**TABLE 6
COMPARISON OF TUITION AND STATE APPROPRIATIONS
PER FULL-TIME-EQUIVALENT STUDENT WITH HIGHER EDUCATION PRICE INDEXES:
FULL-TIME, ARIZONA RESIDENT UNDERGRADUATES, ARIZONA STATE UNIVERSITY**

	Tuition	Tuition in HEPI- Adjusted Dollars	Percent Change	Per FTE State Support	Per FTE State Support in HEPI-Adjusted Dollars	Percent Change	HEPI in 2006 Base Year	Sum of Tuition and FTE State Support	Sum of Tuition and FTE State Support (2006 dollars using HEPI)	Percent Change in HEPI- Adjusted Total	Share of Total Paid by Tuition
1991-92	\$1,590	\$2,744		\$5,722	\$9,875		57.9	\$7,312	\$12,620		21.7%
1992-93	1,590	2,668	-2.8%	5,644	9,471	-4.1%	59.6	7,234	12,139	-3.8%	22.0
1993-94	1,844	2,992	12.1	5,632	9,137	-3.5	61.6	7,476	12,129	-0.1	24.7
1994-95	1,894	2,985	-0.2	5,943	9,367	2.5	63.4	7,837	12,352	1.8	24.2
1995-96	1,950	2,986	0.0	6,201	9,497	1.4	65.3	8,151	12,483	1.1	23.9
1996-97	2,009	2,984	-0.1	6,259	9,296	-2.1	67.3	8,268	12,279	-1.6	24.3
1997-98	2,058	2,952	-1.1	6,476	9,289	-0.1	69.7	8,534	12,241	-0.3	24.1
1998-99	2,158	3,024	2.4	7,110	9,962	7.2	71.4	9,268	12,985	6.1	23.3
1999-00	2,259	3,040	0.5	7,175	9,654	-3.1	74.3	9,434	12,694	-2.2	23.9
2000-01	2,344	3,007	-1.1	7,268	9,325	-3.4	77.9	9,612	12,332	-2.9	24.4
2001-02	2,486	3,044	1.2	6,779	8,299	-11.0	81.7	9,265	11,343	-8.0	26.8
2002-03	2,583	3,084	1.3	6,239	7,449	-10.2	83.8	8,822	10,533	-7.1	29.3
2003-04	3,593	4,135	34.1	5,966	6,866	-7.8	86.9	9,559	11,001	4.4	37.6
2004-05	4,062	4,494	8.7	6,039	6,681	-2.7	90.4	10,101	11,174	1.6	40.2
2005-06	4,404	4,632	3.1	6,334	6,662	-0.3	95.1	10,738	11,294	1.1	41.0
2006-07	4,687	4,687	1.2	7,154	7,154	7.4	100.0	11,841	11,841	4.8	39.6

Notes:

HEPI estimated for 2006.

Tuition and mandatory fees published by Arizona Board of Regents.

COST OF ATTENDING COLLEGE

RELATIVE TO THE LARGE PRIVATE RETURN FROM A COLLEGE DEGREE

The analysis in this report reveals that the net tuition costs have not risen nearly as fast as the gross tuition rates would suggest because of the large amount of scholarship support that is paid to resident undergraduates. At the same time, the private returns to education are high, as illustrated in the October 2005 report, *Value of a College Education, Individual and Societal Benefits*, accessible at <http://economist.asu.edu/p3/education>. The report reveals that the rate of return to dollars invested in earning a college degree is about 12 percent due to the large wage differential that exists between college degree holders and high school graduates.

To understand this high rate of return consider that the data suggest that the

- costs of college (tuition plus opportunity cost) are approximately \$130,000, assumed to be paid up front, while
- benefits of college (lifetime earnings premium over high school, starting at college graduation) are approximately \$1,360,000, which is undiscounted and which accrues over the working life of the individual.

The benefits of college are so great that if a student borrowed the \$130,000 and agreed to pay an annual interest rate of 12% (over and above inflation), he/she would still have just enough additional income from college earnings premiums to be able to pay off the loan with interest.

Another way of expressing this discounted present value is to consider the following example. Select two young men who just graduated from high school.

- Give one \$338,465 and tell him to go find a job in anything he wants. He can do anything he wants over his career, but he cannot attend college.
- Give the other nothing and tell him to spend as much as \$15,000 per year on direct education expenses for four years and forego income during his college years, earn a college degree, and then go get a job.

Using the average data from the census, after accounting for the time value of money and calculating expected lifetime incomes for the two students, the statistical expectation of lifetime earnings for these two people would be exactly the same even though the high school graduate had a \$338,000 head start!

When comparing estimates of tuition with average incomes, per capita incomes, and housing prices, the massive returns to pursuing a college degree appear to swamp the costs. In this context, college tuition is far cheaper than “nearly free” — tuition payers reap huge net financial benefits over their lifetimes.