

**THE CONTRIBUTION OF
ARIZONA STATE UNIVERSITY
TO THE ARIZONA ECONOMY
FY 2002**

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Executive Summary

One approach to measuring the contribution of a university to a local economy is to trace the effects on local jobs and incomes of the full range of spending events triggered by the university, e.g., its payroll and non-payroll expenses and the spending of students. In FY 2002, ASU employed 16,150 faculty, staff and students and had a total payroll of \$504 million. The University indirectly generated another 1,800 Arizona jobs and earnings of \$65 million when it spent \$249 million on construction projects, equipment, and other goods and services necessary for University operations. Yet another round of economic impacts arises from the consumer spending of faculty, staff and students. A total of 10,050 in-state jobs with earnings of \$219 million were required to produce the goods and services purchased by ASU faculty, staff and students.

The above-mentioned spending events create ripple or multiplier effects within the local economy when the firms that supply goods and services to the University community place upstream demands on other producers, when the employees of these firms make additional purchases themselves, and when state and local governments in Arizona spend additional tax revenues. The multiplier effects themselves amount to 9,020 jobs and earnings of \$265 million. When all economic interdependencies are accounted for, the spending of the ASU community was responsible for more than 37,000 Arizona jobs and earnings of \$1.1 billion in FY 2002.

An alternative approach to measuring the economic value of a university is to focus on the higher productivity and earnings of its graduates. The connection between education and earnings is unmistakable. Nationwide data for 2000-2001, for example, show that male workers between ages 35 and 44 earn 94 percent more if they have completed college than if they have only a high school degree. For women in the same age group, the college earnings premium is 81 percent. The return to education has been rising steadily over the past two decades. In the early 1980s, the college earnings premium was only 40 percent for both men and women.

The costs of attending college include tuition and fees paid by the student, state funds used to support higher education and, most significant in size, lost earnings during the time the student is in school. The benefits of a college education greatly outweigh the costs, however. The present value of the additional lifetime earnings made possible by an undergraduate education exceeds the total costs by a margin of \$283,000 for a male student and \$153,000 for a female student. In the language of finance, the inflation-adjusted internal rate of return to a college education is 14 percent for men and 12 percent for women.

Because higher education has such a dramatic effect on an individual's lifetime earnings, total income in the state of Arizona is now \$1 billion higher because of the undergraduate education services provided by ASU over the past three decades. This is true despite the fact that almost one-half of ASU alumni end up leaving the state.

Despite the high return to education, imperfections in the financial system make it likely that investment in human capital, unlike physical capital, will be under-funded.

This is the principal economic argument in favor of public support for higher education. In FY 2000, Arizona spent an average of \$3,134 per student to help cover the operating expenses of its colleges and universities. This represents 63 percent of the national average and places Arizona 48th lowest among the fifty states. In-state tuition at Arizona's four-year public universities averaged \$2,346 per student per year in FY 2000. This is 67 percent of the national average and places Arizona 47th lowest among the fifty states. The combination of low state appropriations and low tuition rates forces Arizona's colleges to implement low-cost methods of educating students.

The Contribution of Arizona State University to the Arizona Economy, FY 2002

This report provides an assessment for FY 2002 of the contribution of Arizona State University to the Arizona economy. The economic effects of the University are measured using two different approaches. The traditional approach is to view a university like a business. ASU is a force in the local economy because it is a major employer of Arizona workers and because the University community at large, including students, spends hundreds of millions of dollars each year on local goods and services. Following this approach, we estimate the direct and indirect effects of ASU on jobs, earnings and spending in the Arizona economy.

An alternative approach to assessing the economic value of a university is to focus on the higher productivity and earnings that are made possible because of the knowledge and skills students acquire in school. This report demonstrates that higher education is a high-yield investment. The benefits of education, as reflected in the higher earnings students receive after they graduate, greatly outweigh the costs. An important issue in public policy is to what extent taxpayers should be asked to help support higher education. In the report we provide a comparative analysis of what Arizona and other states spend to help defray the costs of higher education.

ASU as a Business

The University directly contributes to the state's economy by employing more than 16,000 faculty, staff, and students and by spending almost \$250 million annually on equipment, supplies, and other goods and services. Less obvious but no less significant are the indirect economic impacts that arise from the consumer spending of faculty, staff, and students. These primary impacts then induce secondary or multiplier effects when the firms that supply goods and services to the University community place upstream demands on other producers, when the employees of these firms make additional purchases themselves, and when state and local governments in Arizona spend additional tax revenues.

An analysis of the full range of economic impacts associated with the spending of the University was conducted using an Arizona-specific version of IMPLAN, an input-output model used widely by researchers throughout the United States. Effects referred to as "primary" are IMPLAN estimates of the direct economic impact of University purchases of goods and services and consumer expenditures made by ASU faculty, staff and students. Effects referred to as "secondary" are IMPLAN estimates of the indirect and induced economic impact of spending events.

Exhibit 1 provides a summary of results and an overview of the economic impact methodology. Exhibits 2 and 3 detail the effects ASU has on employment and earnings in the state. Unless otherwise indicated, statistics refer to FY 2002 and are totals for all three campuses—ASU Main, ASU West, and ASU East.

University Expenditures

ASU directly affects the economy of Arizona by employing more than 16,000 people on either a full-time or part-time basis. During the 2001-02 academic year, the University employed 3,480 faculty, 5,590 administrative and classified staff, and 7,080 graduate and undergraduate students. University payroll for FY 2002 was \$504 million, with wages and salaries accounting for \$428 million and the remainder representing employee-related expenses.

Another way in which ASU directly affects the economy is by purchasing goods and services that are necessary for University operations. Nonpayroll expenditures in FY 2002 totaled \$249 million (see Exhibit 4). These purchases directly accounted for 1,800 jobs and \$65 million in earnings in Arizona businesses that supply goods and services to the University.

University purchases induce secondary or so-called multiplier effects in an economy. These effects occur when immediate suppliers of ASU products purchase intermediate goods and services from upstream suppliers and when all affected suppliers hire additional employees who, in turn, make consumer purchases and pay taxes that support local government spending programs. The secondary effects of ASU non-payroll expenditures were estimated to be 1,980 jobs and \$58 million in earnings.

The total impact of University purchases was 3,780 jobs and earnings of \$123 million in FY 2002. A little more than one-third of the total job gains was in service industries; one-fifth was in the construction industry; and one-tenth was in retail and wholesale trade.

Employee Spending

ASU faculty and staff contribute to the Arizona economy not only by helping to provide education and other University services, but also by consuming products supplied by local businesses. Estimates of spending by faculty and staff were made by combining ASU payroll data with figures from the Bureau of Labor Statistics on the share of income spent on individual commodity items by U.S. households. This approach attributes to the University only that household spending financed by wage income earned at ASU. Consumer expenditures associated with the payroll of ASU faculty and staff were estimated to be \$291 million in FY 2002. Of this total, \$186 million was spent on goods and services produced by Arizona businesses. This spending was directly responsible for 2,480 jobs and \$63 million in earnings in the state.

As with institutional spending, consumer spending generates secondary or multiplier effects throughout an economy. Spending by ASU faculty and staff had a secondary impact on the Arizona economy of 2,510 jobs and \$77 million in earnings.

In total, expenditures by ASU faculty and staff accounted for 4,990 jobs and earnings of \$140 million in FY 2002. One-third of the job gains was in retail and wholesale trade; one-third was in services; and one-fifth of the jobs created was in government.

Student Spending

An average of 51,370 students were enrolled at ASU during the Fall and Spring semesters of the 2001-2002 academic year. Because of their sheer number, ASU students exert an enormous influence on the local economy. Estimates of student spending were

made by combining current enrollment figures with estimates of per capita spending obtained in a student survey conducted in the Fall of 1991 by the Walter Cronkite School of Journalism. The survey numbers were escalated to allow for inflation and a moderate amount of growth in real student spending. Average monthly expenditures per student in 2002 were estimated to be \$1,650.

The ASU student population was directly responsible for \$831 million worth of spending, excluding tuition. Categories with the largest expenditures were groceries (\$196 million) and housing (\$179 million). \$536 million worth of student spending fell on goods and services produced in Arizona. The direct impact on Arizona was 7,570 jobs and earnings of \$156 million.

The secondary effect of student expenditures was an additional 4,530 jobs and earnings of \$130 million. The total economic impact of spending by the ASU student population was 12,100 jobs and \$286 million in earnings. One-half of the job gains was in retail and wholesale trade; another quarter was in service industries.

Total Economic Impact

The total impact of Arizona State University on spending in the state is estimated to have been \$2.1 billion in FY 2002. The total employment impact of ASU, including University employees and all other jobs indirectly induced, was 37,020 jobs. The total earnings associated with these jobs were estimated to be \$1,053 million. Of the total job gains, 50% were in government (including all ASU employees), 21% were in retail or wholesale trade, and 17% were in service industries.

ASU as a Provider of Higher Education

Arizona State University sponsors and supports a diverse set of activities that directly benefit the community, including pure and applied research, cultural events, and other public service activities. But the primary mission of the University is to provide quality education for its students. The economic value of a college education is reflected in the earnings premium realized by workers with college degrees.

Degrees Awarded

ASU is a major provider of collegiate education services. The University awarded a total of 8,894 degrees during the 2000-2001 academic year. This is up from 5,067 degrees awarded in 1970-71, 6,527 degrees in 1980-81, and 7,939 degrees in 1990-91.

Growth in undergraduate degrees has been relatively steady over the past three decades (see Exhibit 5). Interest in graduate-level education has been more cyclical. Over the period from 1970 through 1978, graduate and undergraduate degrees grew at comparable rates, with graduate degrees accounting for between 28 and 30 percent of total degrees in each of those years. Graduate degrees awarded then declined almost continuously from 1978 through 1987, reaching a low of 1,413 degrees in 1986-87 and accounting for only 21 percent of total degrees awarded in that year. Since then, interest in graduate education has surged. The percent of total ASU degrees that are graduate is once again up to 29 percent.

Earnings Premium for College Graduates

A college education provides important non-pecuniary benefits to a student—enhanced social skills, greater awareness of human achievement, and an appreciation for cultural diversity. But college is increasingly viewed by students as an investment—an opportunity to acquire skills that are valued by employers and a means of increasing future earnings.

One can gain a sense of magnitude of the economic value of higher education by examining information from the U.S. Bureau of the Census on earnings of individuals by level of educational attainment. The most recent information is from the 2000 and 2001 Current Population Surveys and is available by age and sex, as well as education. The data are national in coverage and include people who have been educated at schools throughout the country and are employed across all fifty states. More specific information on earnings by education for the state of Arizona is too limited to be reliable.

Exhibits 6 and 7 demonstrate with recent earnings information for male and female workers of different ages the unmistakable connection between education and earnings. People who have completed high school earn more than those who have not; people with some college earn more than those with no college; those who have earned a college degree earn more than those with a partial college education; and those with a graduate education earn more than those with only an undergraduate degree.

The earnings premium to a college education is substantial. Male workers between ages 30 and 34 earn on average \$26,600 or 78 percent more if they have completed college than if they have only a high school degree. Men between ages 40 and 44 earn \$37,200 or 92 percent more if they have a college degree. A college education also enhances the earnings power of women. Female workers between ages 30 and 34 earn \$19,300 or 77 percent more with a college degree. Women between ages 40 and 44 earn \$21,300 or 78 percent more with a college education.

The earnings premium to education has been increasing since the early 1980s (see Exhibit 8). This trend seems to reflect a broad-based increase in the demand for skilled workers that is occurring throughout the industrialized world. A rising skill premium is evident not only in the earnings of educated workers but also in the earnings of those with work experience and skills acquired on the job. Labor market economists attribute the rise in the education/skills premium to several factors: skill-using technological advances (especially involving the computer), increased trade with less-developed countries, and a decline in the importance of unions and wage-setting institutions in some countries. Although the high return to schooling should eventually lead to a greater supply of educated workers, the consensus opinion of experts is that the demand for skilled workers will continue to grow and the return to education will remain high into the foreseeable future.

College as an Investment

A formal cost-benefit analysis of the investment value of a four-year college education is provided in Exhibits 9 and 10. The costs of going to college include tuition and fees paid by the student, state funds used to support higher education and, most importantly, lost earnings during the time the student is attending college. Tuition and fees at ASU are approximately \$4,000 per student per year. State funds received by ASU to help defray the costs of education are about \$6,000 per student per year. The foregone

earnings of ASU male students are estimated to be approximately \$16,700 per year, and the foregone earnings of female students are estimated at \$13,000 per year. These figures reflect an assumption that while attending college, students work only during the summer. To the extent that students are able to work part-time during the semester, and remain effective in their studies, our analysis will overstate costs and understate the net benefits of a college education. For the entire four-year period, the total costs of attending college amount to \$107,000 for men and \$92,000 for women.

In the absence of specific information on the earnings performance of ASU graduates, the benefits of having an ASU undergraduate degree are estimated by calculating the difference between the mean earnings of a U.S. worker of a given age and sex who holds a bachelor's degree (and no more) and the mean earnings of a worker with the same demographic characteristics who has only completed high school. The estimated earnings differential is then reduced by 6 percent to reflect the general earnings experience of workers in Arizona. Using this approach and assuming that a college graduate works continuously from age 22 to 65, the additional earnings provided by a college education are \$1,287,000 for men and \$784,000 for women.

When comparing streams of expenses and incomes that accrue over time, it is necessary to "discount" figures to a common base year. The present value of receiving \$10,000 ten years from now is significantly less than \$10,000—not just because of inflation, but because of the time value of money. If the annual rate of interest is 5 percent, then \$10,000 to be received in ten years has a present value of \$6,139 in the sense that a present period investment of \$6,139 at 5 percent interest would be worth precisely \$10,000 in ten year's time.

If future expenses are discounted to the present using an inflation-adjusted interest rate of 5 percent, the costs of attending college amount to \$99,000 for men and \$85,000 for women. Discounting has a more dramatic effect on the present value of future earnings. The present value of the incremental earnings afforded by a college education is \$383,000 for a male graduate and \$239,000 for a female graduate.

The benefits of a college education decidedly outweigh the costs. The net present value of a college education is \$284,000 for men and \$154,000 for women. From an alternative perspective, the inflation-adjusted internal rate of return to a college education is 14 percent for men and 12 percent for women.

Contribution of ASU Undergraduate Education to Arizona Income

Because higher education has such a dramatic effect on an individual's lifetime earnings, it is likely that total income in the state of Arizona is now significantly higher because of the education received by ASU students over the past several decades. This conclusion does not necessarily follow from our earlier demonstration that college is a sound investment for an individual. Many ASU graduates end up leaving the state. Also, because of steady growth in the University's student population, there are currently more students incurring costs, such as foregone personal income and taxpayer support, than there are former graduates in any four-year cohort. Nevertheless, simple calculations demonstrate that Arizona's annual net income is now at least \$1 billion higher because of the education services provided by the University. Exhibit 11 provides a summary of these calculations.

In the absence of more specific information, assume that ASU graduates working in the state receive a college earnings premium equal to the nationwide average premium for workers of the same age and sex (less 6 percent in recognition of the fact that Arizona workers generally earn less than U.S. workers). Those who graduated in the 1970s and are now in their late forties and early fifties are earning \$18,000 (women) to \$35,000 (men) more than they would have had they only completed high school. Those graduating in the 1990s, who are in their twenties and early thirties, earn between \$15,000 and \$20,000 more because of their undergraduate education. Recent alumni records indicate that approximately 53 percent of ASU graduates now reside in the state of Arizona. Combining this figure with the total number of undergraduate degrees awarded to men and women from 1970-2001, we can estimate the gross impact of ASU undergraduate education on current Arizona income. The estimates indicate that income in the state is now \$1.8 billion higher because of the education services provided by the University over the past thirty years.

To estimate the net effect of ASU education on current state income, some allowance must be made for the costs incurred by students now attending ASU. There are approximately 40,000 undergraduates enrolled at the University, and roughly three-quarters of these are considered state residents. Combining these figures with the average costs per student—costs associated with foregone income, tuition and fees, and state appropriations—we arrive at an estimate of \$0.8 billion for the total cost to Arizona of ASU's present undergraduate population. The net effect of ASU undergraduate education on current income in the state of Arizona is then approximately \$1 billion.

Paying for Higher Education: Comparing the States

Education is different from other investments in that students may have a difficult time obtaining enough external financing to cover the full cost of education. Unlike physical capital investments, such as a building or a piece of equipment, human beings cannot be offered as collateral. Because of financing impediments, college expenses are often funded within families, through gifts or informal loans. This raises the risk that some students, especially those from households that are cash constrained, may pass up what would prove to be an outstanding long-term investment because they lack financing. This is an important economic argument in favor of public support for higher education: imperfections in the financial system make it likely that investment in human capital, unlike physical capital, will be under-funded.

Arizona, and all of the fifty states, provides public support for higher education. Exhibit 12 shows how much Arizona and the other states spent in FY 2000 to support higher education. The figures are expressed in dollars per student and include only state tax funds appropriated to help cover operating expenses at the states' colleges and universities. Arizona spent an average of \$3,134 per student in FY 2000. This represents 63 percent of the national average and places Arizona 48th lowest among the fifty states.

Exhibit 12 also shows for each state average in-state tuition and fees paid by full-time students at all four-year public institutions. Resident tuition at Arizona's universities averaged \$2,346 per student per year in FY 2000. This is 67 percent of the national average and places Arizona 47th lowest among the fifty states.

Compared to other states, Arizona provides little public support for higher education. The only states that provide less support are Vermont and New Hampshire. These states shift the financing burden to students, charging the highest tuition rates in the country. Arizona, on the other hand, also has one of the lowest tuition rates in the country. How is this possible? On a per student basis, the total cost of educating students is very low at Arizona's colleges and universities. The concern with public higher education in the state is not that tuition rates place a heavy burden on resident students, but that a combination of low tuition rates and low state appropriations force Arizona's public colleges and universities to implement very low-cost methods of educating students (large class sizes, for example). If some sacrifice in quality is inevitable, then Arizona students who wish to remain in state may be unable to derive the full benefits of an investment in higher education.

Concluding Remarks

This analysis of the contribution of Arizona State University to the state's economy has focused on the impact of the University community as an employer and purchaser of goods and services and as a provider of higher education. These are not the only benefits that ASU generates for the local economy. Technology created through cooperative programs with industry raises the competitiveness of local firms. And the presence of a faculty respected for its research accomplishments serves as a catalyst for economic development activities. These broader economic contributions are not easily measured but they are no less valuable to the state of Arizona.

Exhibit 1

**Summary of Economic Impact of
Arizona State University, FY 2002**

| PRIMARY ECONOMIC IMPACTS | | | |
|-------------------------------------|-------------|--|------------|
| <i>DIRECT IMPACTS</i> | | <i>INDIRECT IMPACTS</i> | |
| University jobs | 16,150 | In-state jobs | 11,850 |
| University payroll | \$ 504 mill | In-state earnings | \$284 mill |
| University non-payroll expenditures | \$ 249 mill | Spending by ASU faculty, staff, & students | \$722 mill |



| SECONDARY ECONOMIC IMPACTS | |
|-----------------------------------|------------|
| Jobs | 9,020 |
| Earnings | \$265 mill |
| Spending | \$658 mill |



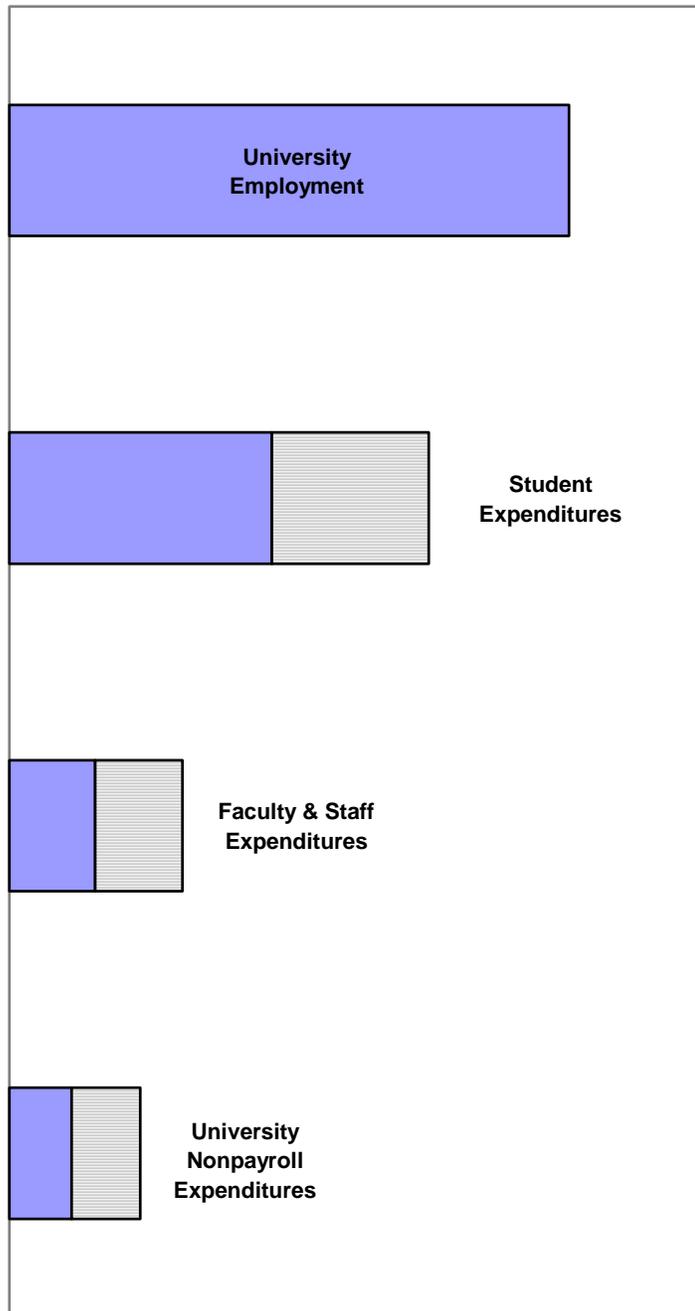
| TOTAL ECONOMIC IMPACT | |
|------------------------------|--------------|
| Jobs | 37,020 |
| Earnings | \$1,053 mill |
| Spending | \$2,133 mill |

Source: Center for Business Research, L. William Seidman Research Institute,
W. P. Carey School of Business, Arizona State University

Exhibit 2
Impact of ASU on State Employment, FY 2002
(number of full or part-time jobs)

ASU employed 16,150 full or part-time workers. Of these, 22% were faculty, 35% were staff, and 43% were students.

16,150



Student spending was directly responsible for 7,570 jobs in the state of Arizona. An additional 4,530 jobs were generated through multiplier effects. One-half of the jobs were in retail and wholesale trade; another quarter were in service industries.

12,100

Faculty and staff expenditures accounted for 2,480 jobs directly and 2,510 jobs through secondary effects. One-third of the jobs were in retail and wholesale trade; another third were in service industries; and one-fifth of the jobs created were in government.

4,990

University purchases of goods and services created 1,800 jobs directly and another 1,980 jobs once multiplier effects were considered. A little more than one-third of the jobs were in services; one-fifth were in the construction industry; and one-tenth were in retail and wholesale trade.

3,780

TOTAL 37,020

■ Primary ■ Secondary

Source: Center for Business Research, L. William Seidman Research Institute,
W. P. Carey School of Business, Arizona State University

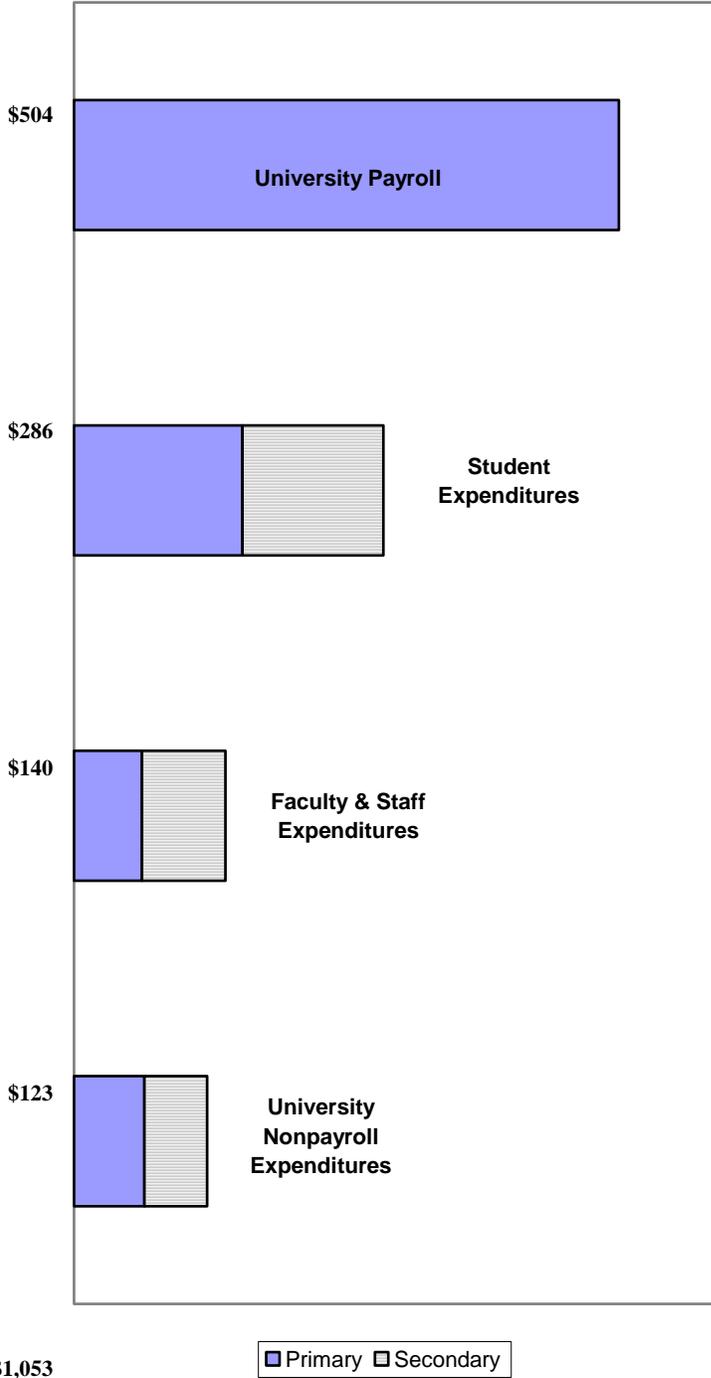
Exhibit 3
Impact of ASU on State Earnings, FY 2002
(millions of dollars)

University payroll in FY 02 was \$504 million. Of this, \$429 million was paid out in salaries and wages. \$199 million went to faculty, \$174 million went to staff, and \$56 million went to students.

Student spending was directly responsible for \$156 million in earnings in the state of Arizona. An additional \$130 million in earnings was generated through multiplier effects.

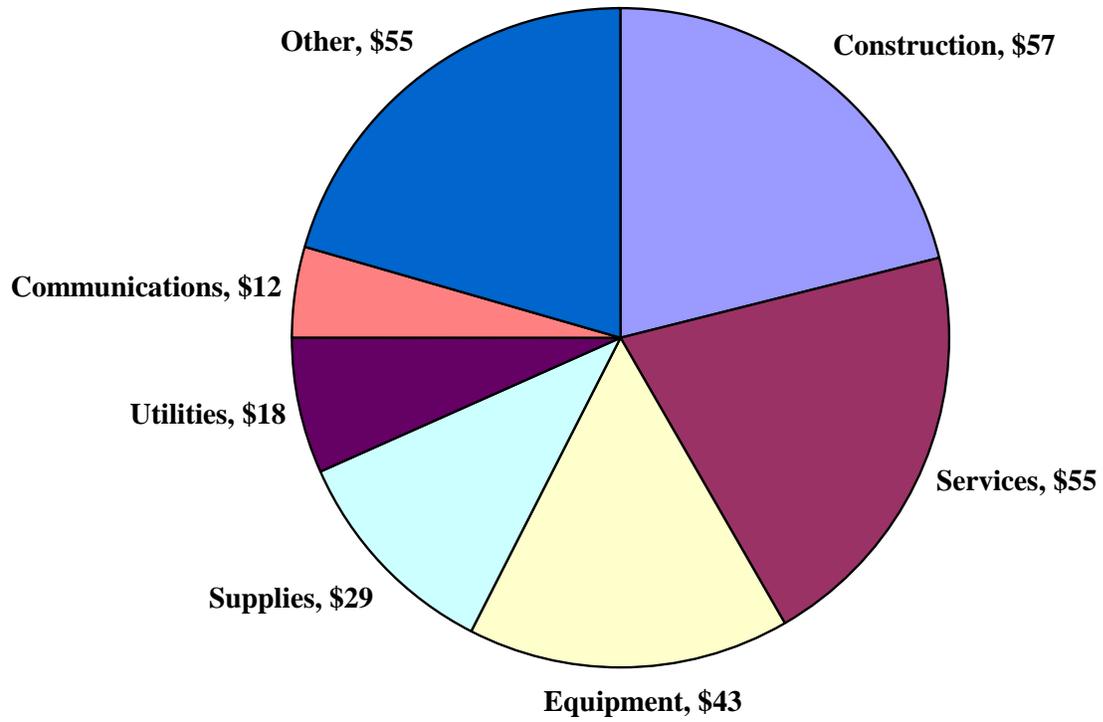
Faculty and staff expenditures accounted for \$63 million in earnings directly and \$77 million in earnings through secondary effects.

University purchases of goods and services generated \$65 million in earnings directly and another \$58 million in earnings once multiplier effects were considered.



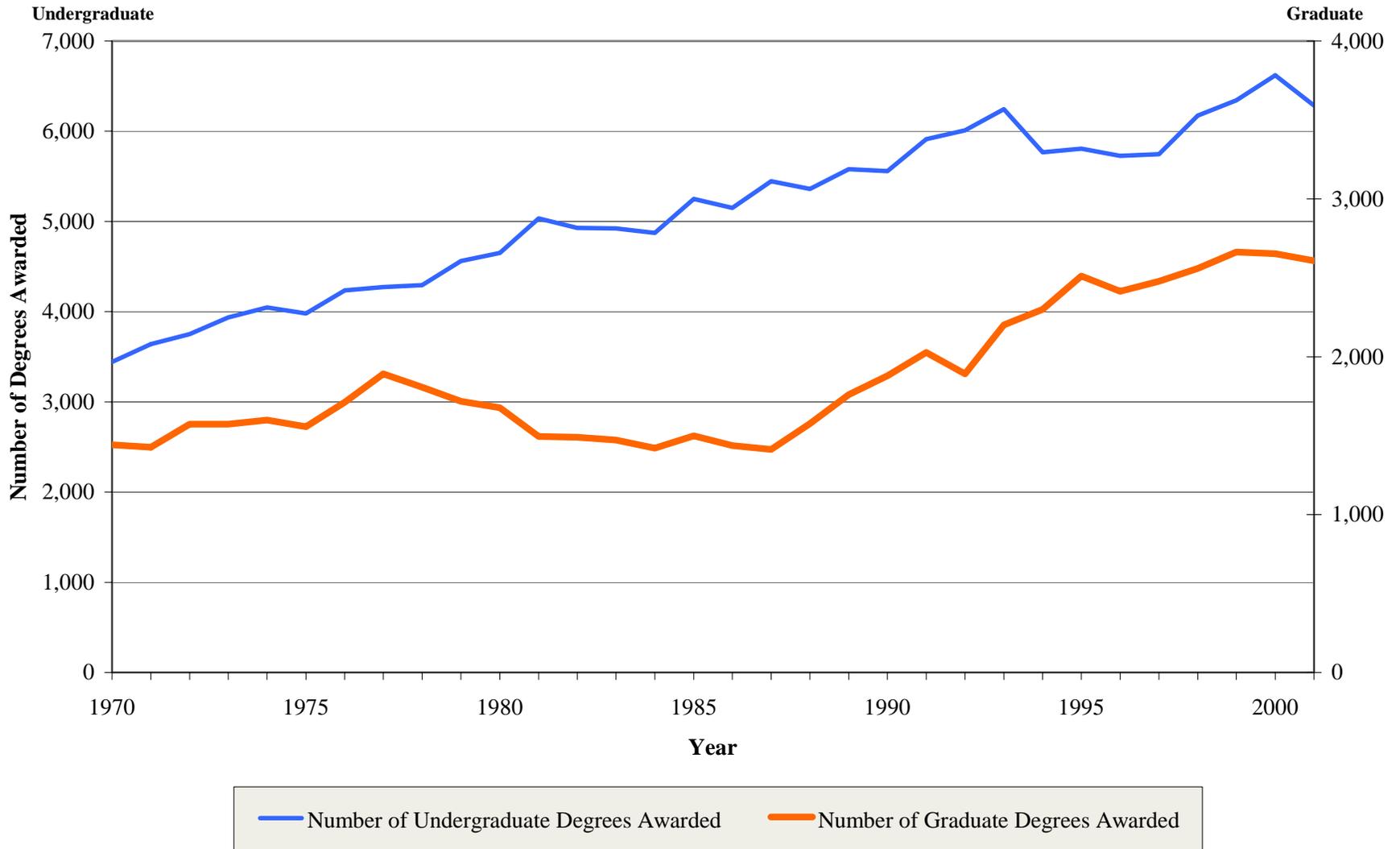
Source: Center for Business Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University

Exhibit 4
ASU Non-Payroll Expenditures in FY 2002
(millions of dollars)



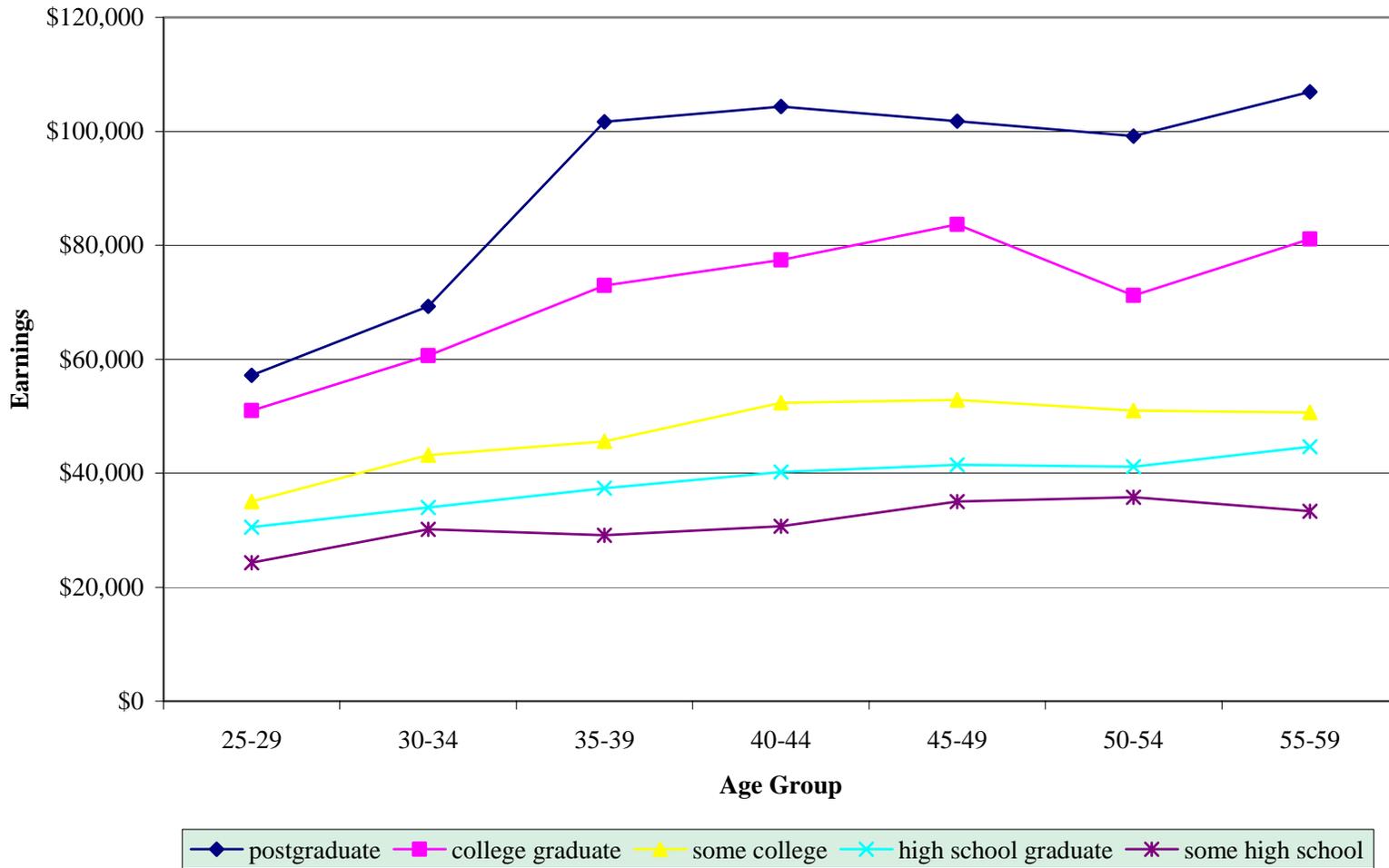
Source: Center for Business Research using detailed information provided by the Office of the Comptroller

Exhibit 5 Degrees Awarded at Arizona State University, 1970-2001



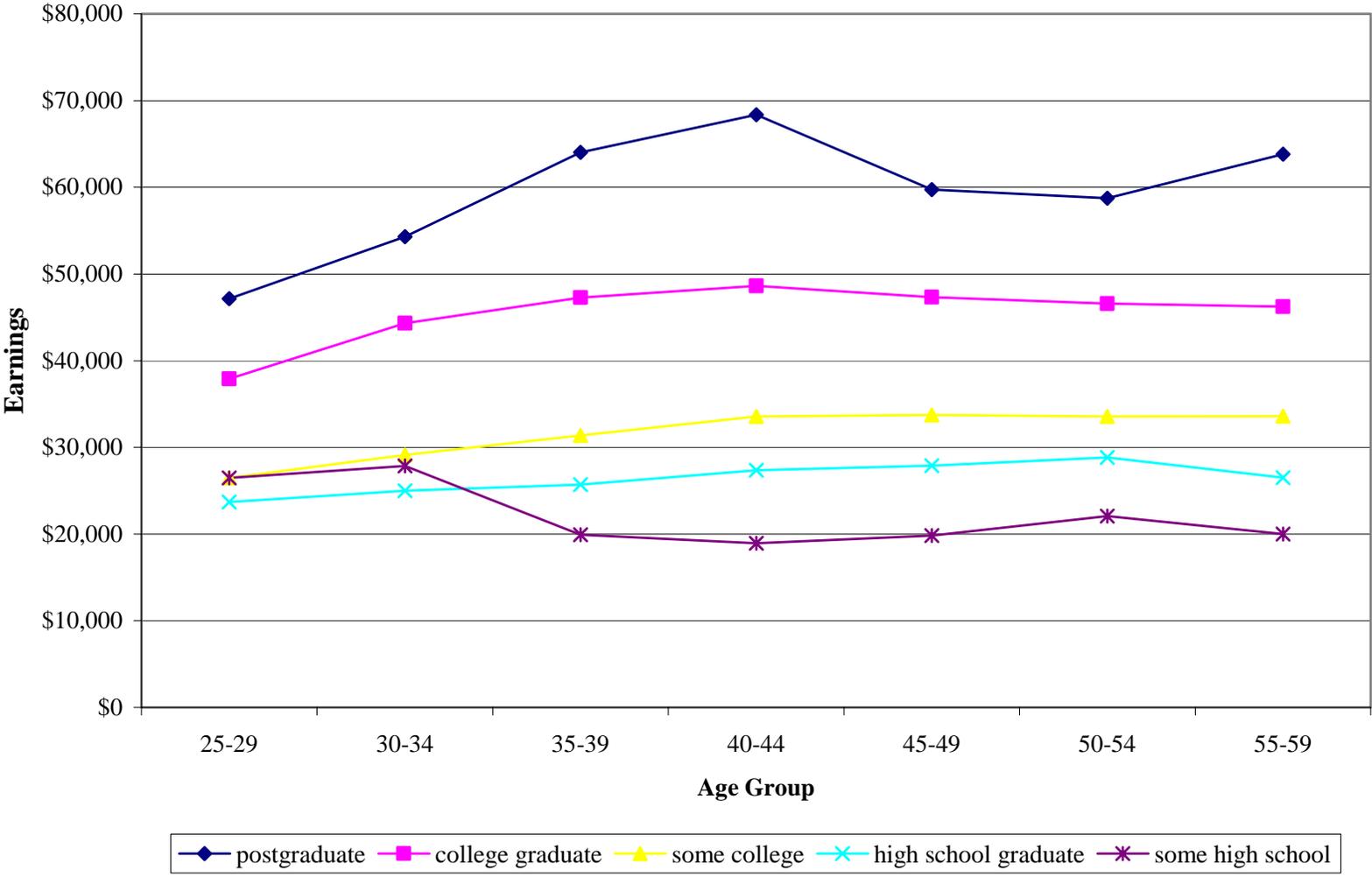
Source: Office of Institutional Analysis, Arizona State University

Exhibit 6
Mean Earnings for Full-Time, Year-Round Male Workers, 2000-2001



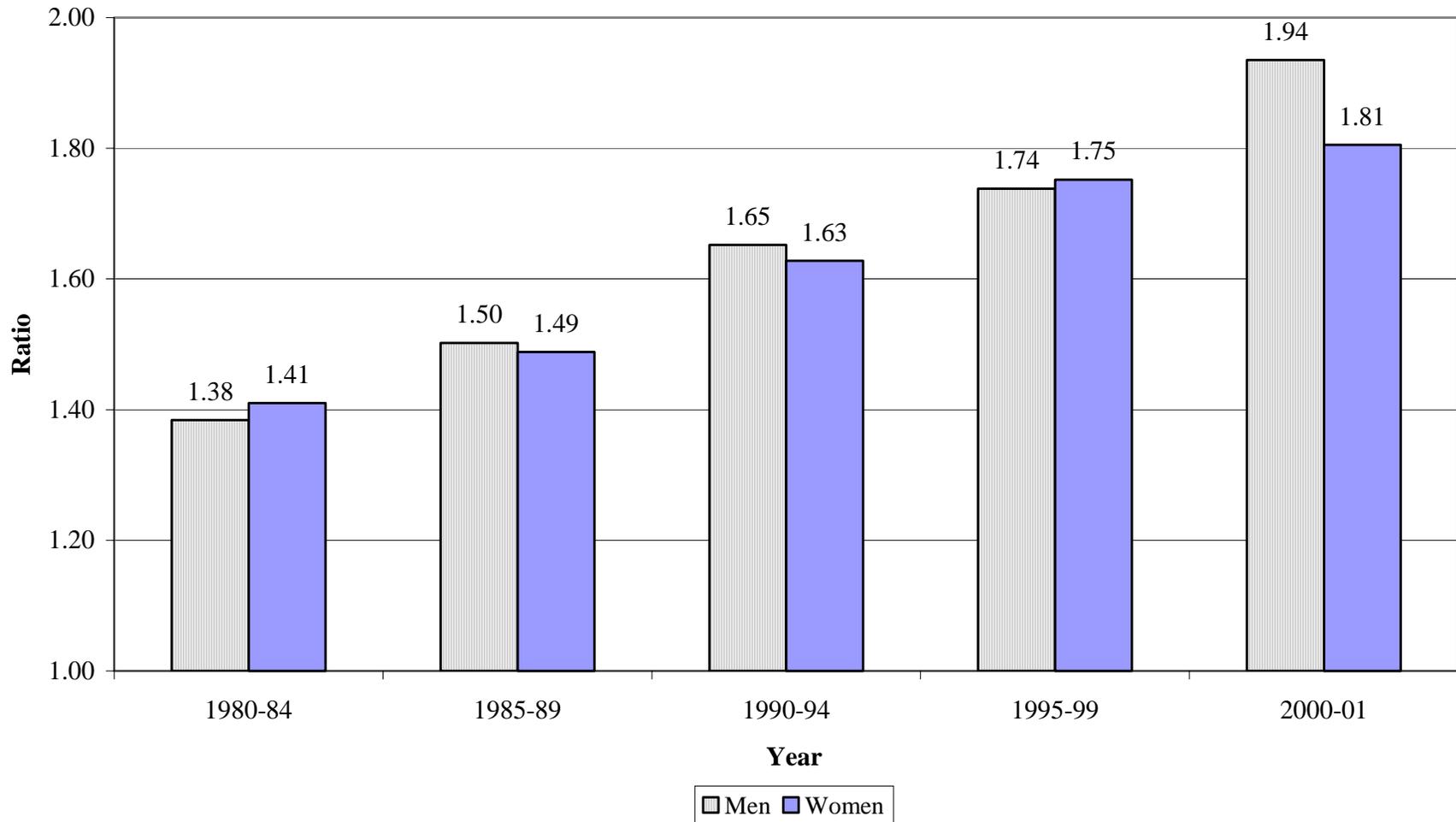
Source: U.S. Census Bureau, Current Population Survey

Exhibit 7
Mean Earnings for Full-Time, Year-Round Female Workers, 2000-2001



Source: U. S. Census Bureau, Current Population Survey

Exhibit 8
Ratio of Mean Earnings of College to High-School Graduates,
Ages 35-44 (Full-time, Year-round Workers)



Source: U. S. Census Bureau, Current Population Survey

Exhibit 9
Value of a College Degree: Men
(in 2001 dollars)

Costs (over four years):

| Ages | Tuition | State Appropriations | Foregone Earnings | Total Costs |
|-------|----------|----------------------|--|-----------------|
| 18-21 | \$16,000 | \$24,000 | \$67,000 | \$107,000 |
| | | | Discounted Total Costs (@ 5% interest) | \$99,000 |

Benefits (over forty four years):

| Ages | Earnings w/ High School Degree | Earnings w/ College Degree | Earnings Differential | Discounted Total Earnings Differential |
|-------|--------------------------------|----------------------------|--|--|
| 22-65 | \$1,600,000 | \$2,887,000 | \$1,287,000 | |
| | | | Discounted Total Earnings Differential (@ 5% interest) | \$383,000 |

Net Present Value of College Degree = \$284,000
or an Internal Rate of Return = 14.0%

Source: Center for Business Research, using data from the U. S. Census Bureau

Exhibit 10
Value of a College Degree: Women
(in 2001 dollars)

Costs (over four years):

| | | | | |
|-------|----------|-------------------------|---|-----------------|
| Ages | Tuition | State Appropriations | Foregone Earnings | Total Costs |
| 18-21 | \$16,000 | \$24,000 | \$52,000 | \$92,000 |
| | | | Discounted Total Costs (@ 5% interest) | \$85,000 |

Benefits (over forty four years):

| | | | | |
|-------|--------------------------------------|----------------------------------|---|------------------|
| Ages | Earnings w/ High School Degree | Earnings w/ College Degree | Earnings Differential | |
| 22-65 | \$1,063,000 | \$1,847,000 | \$784,000 | |
| | | | Discounted Total Earnings Differential (@ 5% interest) | \$239,000 |

Net Present Value of College Degree = \$154,000
or an Internal Rate of Return = 11.8%

Source: Center for Business Research, using data from the U. S. Census Bureau

Exhibit 11
**Contribution of ASU Undergraduate
Education to Arizona Income, FY 2002**
(in millions of dollars)

| | |
|---|----------------|
| Current Incremental Earnings of former ASU Undergraduates, (cohorts from 1970-2001, assuming 53% remain in Arizona) | \$1,855 |
| Current Costs: | |
| Lost income (30,000 students @ \$15,000)* | (\$450) |
| Tuition and fees (30,000 students @ \$4,000)* | (\$120) |
| State appropriations (40,000 students @ \$6,000) | (\$240) |
| Net Effect on Arizona Income | \$1,045 |

* Only Arizona resident student population are included in the calculations.

Source: Center for Business Research, L. William Seidman Research Institute,
W. P. Carey School of Business, Arizona State University

Exhibit 12
State Appropriations for and Tuition and Fees at
Public Post-Secondary Institutions, FY 2000

| State Appropriations for Higher Education | | | Tuition/Fees at Public 4 yr Institutions | | |
|--|---------------------------|-------------|---|-----------------------|-------------|
| State | \$ per student | Rank | State | \$ per student | Rank |
| Mississippi | \$7,556 | 1 | Vermont | \$7,134 | 1 |
| Hawaii | \$7,363 | 2 | New Hampshire | \$6,455 | 2 |
| Connecticut | \$7,222 | 3 | Pennsylvania | \$5,918 | 3 |
| North Carolina | \$7,137 | 4 | New Jersey | \$5,607 | 4 |
| Alaska | \$6,871 | 5 | Delaware | \$4,797 | 5 |
| Georgia | \$6,572 | 6 | Maryland | \$4,778 | 6 |
| Kentucky | \$6,305 | 7 | Ohio | \$4,740 | 7 |
| Iowa | \$6,180 | 8 | South Carolina | \$4,684 | 8 |
| Minnesota | \$6,172 | 9 | Michigan | \$4,626 | 9 |
| Arkansas | \$5,860 | 10 | Connecticut | \$4,543 | 10 |
| Massachusetts | \$5,767 | 11 | Rhode Island | \$4,512 | 11 |
| New Jersey | \$5,761 | 12 | Maine | \$4,259 | 12 |
| Pennsylvania | \$5,579 | 13 | Illinois | \$4,177 | 13 |
| Alabama | \$5,553 | 14 | New York | \$4,062 | 14 |
| New York | \$5,521 | 15 | Minnesota | \$4,024 | 15 |
| Nebraska | \$5,362 | 16 | Massachusetts | \$4,003 | 16 |
| Indiana | \$5,316 | 17 | Missouri | \$3,878 | 17 |
| Idaho | \$5,308 | 18 | Indiana | \$3,785 | 18 |
| South Carolina | \$5,295 | 19 | Virginia | \$3,723 | 19 |
| Maine | \$5,290 | 20 | Oregon | \$3,650 | 20 |
| New Mexico | \$5,276 | 21 | Washington | \$3,604 | 21 |
| North Dakota | \$5,216 | 22 | South Dakota | \$3,486 | 22 |
| Florida | \$5,149 | 23 | Wisconsin | \$3,414 | 23 |
| Tennessee | \$5,086 | 24 | Iowa | \$3,158 | 24 |
| Ohio | \$5,007 | 25 | Nebraska | \$3,097 | 25 |
| Wyoming | \$5,000 | 26 | Montana | \$3,076 | 26 |
| Missouri | \$4,905 | 27 | Arkansas | \$3,006 | 27 |
| West Virginia | \$4,852 | 28 | Alabama | \$2,987 | 28 |
| Illinois | \$4,788 | 29 | Colorado | \$2,980 | 29 |
| Delaware | \$4,760 | 30 | Hawaii | \$2,974 | 30 |
| Oklahoma | \$4,760 | 31 | Mississippi | \$2,967 | 31 |
| Virginia | \$4,751 | 32 | Tennessee | \$2,950 | 32 |
| Texas | \$4,747 | 33 | North Dakota | \$2,938 | 33 |
| Maryland | \$4,722 | 34 | Alaska | \$2,936 | 34 |
| Washington | \$4,700 | 35 | Kentucky | \$2,898 | 35 |
| Louisiana | \$4,693 | 36 | Texas | \$2,803 | 36 |
| California | \$4,540 | 37 | Louisiana | \$2,773 | 37 |
| Utah | \$4,535 | 38 | Georgia | \$2,698 | 38 |
| Michigan | \$4,490 | 39 | Kansas | \$2,637 | 39 |
| Oregon | \$4,388 | 40 | Idaho | \$2,627 | 40 |

Exhibit 12 continued

| State Appropriations for Higher Education | | | Tuition/Fees at Public 4 yr Institutions | | |
|--|-------------------|------|--|----------------|------|
| State | \$ per student | Rank | State | \$ per student | Rank |
| Wisconsin | \$4,308 | 41 | New Mexico | \$2,626 | 41 |
| Kansas | \$3,961 | 42 | Wyoming | \$2,575 | 42 |
| Rhode Island | \$3,901 | 43 | California | \$2,561 | 43 |
| South Dakota | \$3,812 | 44 | West Virginia | \$2,548 | 44 |
| Montana | \$3,612 | 45 | Florida | \$2,365 | 45 |
| Nevada | \$3,588 | 46 | Nevada | \$2,349 | 46 |
| Colorado | \$3,278 | 47 | ARIZONA | \$2,346 | 47 |
| ARIZONA | \$3,134 | 48 | North Carolina | \$2,299 | 48 |
| Vermont | \$3,118 | 49 | Oklahoma | \$2,257 | 49 |
| New Hampshire | \$2,761 | 50 | Utah | \$2,244 | 50 |
| United States | \$5,012 | | United States | \$3,506 | |

Sources: National Center for Education Statistics, U. S. Dept. of Education Center for the Study of Education Policy, Illinois State University