

THE CONTRIBUTION OF ARIZONA STATE UNIVERSITY TO THE CITY OF PHOENIX ECONOMY, FISCAL YEAR 2013

A Report from the Office of the University Economist

June 2014

Timothy Hogan, Ph.D.

Professor Emeritus, Department of Economics;
and Senior Research Associate, L. William Seidman Research Institute

Center for Competitiveness and Prosperity Research
L. William Seidman Research Institute
W. P. Carey School of Business
Arizona State University
Box 874011
Tempe, Arizona 85287-4011

(480) 965-5362

FAX: (480) 965-5458

EMAIL: Dennis.Hoffman@asu.edu

wpcarey.asu.edu/research/competitiveness-prosperity-research
economist.asu.edu



ARIZONA STATE UNIVERSITY

SUMMARY

This report provides an assessment for fiscal year (FY) 2013 of the economic contribution of Arizona State University (ASU) to the city of Phoenix. Estimates are presented for the jobs and incomes that are supported in the Phoenix economy by the spending of the university and its employees and students. This economic impact analysis estimates the contribution of the entire university, not just the Downtown Phoenix campus, to the city's economy and gives an indication of how much larger the city of Phoenix economy is because of ASU.

In fiscal year 2013, the total unduplicated headcount enrollment at all four ASU campuses was more than 80,000 students, and the university employed almost 22,000 faculty, staff, and students with a total payroll of \$910 million. Expenditures associated with the operations of the university during FY 2013 were \$561 million, with construction expenditures during the fiscal year totaling an additional \$166 million. Based on this analysis, when all economic interdependencies are accounted for, the overall economic contribution to the city of Phoenix of the combined impacts of spending by the university, its employees, and its students in FY 2013 totaled more than 24,000 jobs, \$1.1 billion in labor income, and nearly \$1.8 billion in gross product.

ECONOMIC IMPACT

The purpose of an economic impact analysis of a university is to measure the contribution the university makes to local area jobs and incomes through its own spending and the spending of students, faculty, and staff. What are referred to as “direct” impacts are the jobs and incomes provided by the university itself and by businesses who supply goods and services purchased by the university, its students, and employees. In economic impact analysis, estimates are also made of so-called “multiplier effects” that arise through backward linkages between industries and from additional rounds of consumer spending generated throughout the economic impact process.

Estimates of the economic impact of ASU were made using a city of Phoenix-specific version of IMPLAN, an input-output model used widely by researchers throughout the United States. Impacts refer to jobs and incomes generated somewhere in the city. Impacts are reported for three economic variables: gross product, labor income, and employment. Gross product is a broad measure of income consisting of employee compensation, proprietors' income (self-employed income), property income, and indirect business taxes. Labor income is the sum of employee compensation and proprietor income. Employment is a count of full- and part-time jobs. Table 1 provides a summary of results of the analysis.

University Expenditures: Operations

ASU directly affects the Phoenix economy by employing 1,900 at its Downtown Phoenix campus on either a full-time or part-time basis, with a payroll of \$122 million for FY 2013. Another way in which ASU directly affects the city's economy is by purchasing goods and services that are necessary for university operations. Nonpayroll expenditures in FY 2013 created a demand for \$275 million worth of goods and services supplied by city of Phoenix businesses. These purchases directly accounted for 2,100 jobs, \$101 million in labor income, and \$168 million in gross product.

TABLE 1
THE CONTRIBUTION OF ARIZONA STATE UNIVERSITY
TO THE CITY OF PHOENIX ECONOMY, FISCAL YEAR 2013

	Gross Product*	Labor Income*	Employment
University Payroll and Employment	\$130	\$122	1,900
University Nonpayroll Operating Expenditures	374	237	4,800
University Construction	115	91	1,600
Spending by Faculty and Staff	274	166	3,400
Student Spending	851	510	12,000
Visitor Spending	28	19	500
Total Economic Impact	1,772	1,145	24,200

* In millions

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

University purchases induce secondary or multiplier effects in an economy. These effects occur when immediate suppliers of products to the university 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 government spending programs. The secondary effects impacting the city of Phoenix economy of ASU nonpayroll operating expenditures were estimated to be 2,700 jobs, \$135 million in labor income, and \$206 in gross product. The total impact of university purchases on the city's economy was 4,800 jobs, \$237 million of labor income, and \$374 million in gross product.

University Expenditures: Construction

University construction outlays in FY 2013 were \$166 million with \$31 million allocated to the Downtown Phoenix campus. Expenditures associated with these projects directly generated 800 jobs, \$50 million in labor income, and \$53 million in gross product for the Phoenix economy. When multiplier effects are included, the total impact of ASU construction spending for the city in FY 2013 was 1,600 jobs, \$91 million in labor income, and \$115 million in gross product.

Employee Spending

The university indirectly contributes to the city of Phoenix's economy not only through employing city residents, but also through the purchases of goods and services from Phoenix businesses paid for from the payroll earned by employees. Consumer expenditures associated with ASU faculty and staff payrolls were estimated to be \$616 million in FY 2013. This spending was directly responsible for 1,500 jobs, \$67 million in labor income, and \$121 million in gross product for the city of Phoenix.

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 Phoenix economy of 1,900 jobs, \$99 million in labor income, and \$153 million in gross product. In total, expenditures by ASU faculty and staff accounted for 3,400 Arizona jobs, \$166 million worth of labor income, and \$274 million in gross product for the city of Phoenix in FY 2013.

Student Spending

More than 80,000 students were enrolled at ASU during the 2012-13 academic year. Because of their sheer number, ASU students exert an enormous influence on the local economy. The ASU student population was directly responsible for \$1.3 billion worth of spending, excluding tuition. The direct impact of this spending on the city of Phoenix economy was 5,900 jobs, \$203 million in labor income, and \$378 million in gross product.

The secondary effect of ASU student expenditures on the city's economy was an additional 6,100 jobs, \$307 million in labor income, and \$473 million of gross product. The total economic contribution to the Phoenix economy of spending by the ASU student population was 12,000 jobs, \$510 million worth of labor income, and \$851 million in gross product.

Visitor Spending

Athletic events, cultural activities, conferences, and other programs draw large numbers of visitors to Arizona State University campuses each year. In addition, parents and friends visit students, and prospective students and their families make evaluation visits to the Phoenix area. Many of those who attend ASU activities are local residents. But it is estimated that out-of-town visitors spent an estimated \$103 million on lodging, food, entertainment, and other goods and services during FY 2013. The total economic impact for the city of Phoenix of this spending was 500 jobs, \$19 million in labor income, and \$28 million in gross product.

Total Economic Impact

The total impact of Arizona State University on Arizona's gross product is estimated to have been \$3.2 billion in FY 2013. For the city of Phoenix, the total employment impact of ASU, including university employees and all other jobs indirectly induced, was 24,200 jobs. The total labor income for the Phoenix economy associated with these jobs was estimated to be \$1.1 billion, and ASU's overall contribution to the city's FY 2013 gross product was nearly \$1.8 billion.

APPENDIX: METHODOLOGY

The estimates of the contribution of ASU to the city of Phoenix economy for FY 2013 were based directly on the results of the latest annual update (*Update to ASU Economic Impact*, December 2013) to the report *The Contribution of Arizona State University to the Arizona Economy, Fiscal Year 2009* that was prepared in November 2009. This report and the update are available at <http://economist.asu.edu/arizona-universities>. Unless otherwise indicated, all primary employment and expenditure data refer to FY 2013 and are totals across all four campuses—Tempe, West, Polytechnic, and Downtown Phoenix.

Data on ASU employment and expenditures were derived from university administrative records. For descriptions of how faculty and staff, student, and visitor expenditures were estimated, see the FY 2009 analysis. The faculty, staff, and student expenditures were allocated to the city of Phoenix based upon zip code analyses of employee and student databases. Operating expenditures were allocated to the city based on industry/commodity-specific data from the IMPLAN models specific to the city of Phoenix and to Arizona.

Estimates of the economic impact of ASU were made using a city of Phoenix-specific version of IMPLAN, an input-output model used widely by researchers throughout the United States. The specific model used was based on IMPLAN's 2011 database, with the study area constructed of all zip codes in the city of Phoenix. In building the model, trade flows were calculated using IMPLAN's "regional purchase coefficients," which are econometrically derived estimates of the percentage of demand for a commodity that is satisfied by local producers. Full SAM (Social Accounting Matrix) multipliers were used. These multipliers allow for a recycling of income through the consumer spending of households, the spending of governments out of tax revenues, and the capital spending of firms out of profits.

A nonstandard feature of this analysis was the estimation of impacts on the Phoenix economy from ASU-associated expenditures that occurred outside of the city's boundaries. For each expenditure category, a portion of the multiplier effects of non-Phoenix spending was allocated to the city of Phoenix based on industry/commodity-specific estimates of the city of Phoenix's share of statewide economic activity from the IMPLAN model.