

# EXECUTIVE SUMMARY

*Demonstrating the Economic Value of Central Arizona College*



FEBRUARY 2015

ANALYSIS OF THE ECONOMIC IMPACT & RETURN ON INVESTMENT OF EDUCATION

*Central Arizona College (CAC) creates value in many ways. The college plays a key role in helping students increase their employability and achieve their individual potential. It provides students with the skills they need to have a fulfilling and prosperous career. Further, it supplies an environment for students to meet new people, increase their self-confidence, and promote their overall health and well-being.*

The contribution of CAC influences both the lives of students and also the regional economy. The college serves a range of industries in Pinal County and supports local businesses, and society as a whole in Arizona benefits from an expanded economy and improved quality of life. The benefits created by CAC even extend to the state and local government through increased tax revenues and public sector savings.

The purpose of this study is to investigate the economic impacts created by CAC on the business community and the benefits that the college generates in return for the investments made by its key stakeholder groups—students, society, and taxpayers. The following two analyses are presented:

- **REGIONAL ECONOMIC IMPACT ANALYSIS**
- **INVESTMENT ANALYSIS**

All results reflect student and financial data for Fiscal Year (FY) 2013-14. Impacts on the business community are reported under the economic impact analysis, and the return on investment to students, society, and taxpayers are reported under the investment analysis. Both analyses are described more fully in the following sections.

# ECONOMIC IMPACT ANALYSIS

*CAC promotes economic growth in Pinal County in a variety of ways. The college is an employer and buyer of goods and services, and the living expenses of students from outside of Pinal County benefit local businesses. In addition, CAC is a primary source of education to Pinal County residents and a supplier of trained workers to Pinal County industry.*



The regional economic impact analysis examines the impact of CAC on the local business community through increased consumer spending and enhanced business productivity. Results are measured in terms of added income and are organized according to the following three impacts:

1. Impact of college operations;
2. Impact of the spending of students who relocated to the region, and;
3. Impact of the increased productivity of alumni that were employed in the regional workforce during the analysis year.

## **OPERATIONS SPENDING IMPACT**

CAC is an important employer in Pinal County. In FY 2013-14, the college employed 923 full-time and part-time faculty and staff. Of these, 70% lived in Pinal County. Total payroll at CAC was \$34.9 million, much of which was spent in the region for groceries, rent, eating out, clothing, and other household expenses.

CAC is itself a large-scale buyer of goods and services. In FY 2013-14 the college spent \$34.9 million to cover its expenses for facilities, professional services, and supplies.

The total income that CAC created during the analysis year as a result of its day-to-day operations was \$33.5 million. This figure represents the college's payroll, the multiplier effects generated by the spending of the college and its employees, and a downward adjustment to account for funding that the college received from local sources.

## JOB EQUIVALENTS BASED ON INCOME

Job equivalents are a measure of the average-wage jobs that a given amount of income can potentially support. They are calculated by dividing income by the average income per worker in the county. Based on the added income created by CAC, the job equivalents are as follows:

Operations spending impact = **823** job equivalents

Impact of student spending = **2** job equivalents

Alumni impact = **4,401** job equivalents

Overall, the added income created by CAC and its students supported **5,226** job equivalents.

## INCOME CREATED BY CAC IN FY 2013-14 (ADDED INCOME)

**\$33.5 MILLION**

Operations spending impact

**\$67.9 THOUSAND**

Impact of student spending

**\$179.2 MILLION**

Alumni impact

**\$212.7 MILLION**

Total impact

## IMPACT OF STUDENT SPENDING

Around 21% of students attending CAC originated from outside the county in FY 2013-14. Some of these students relocated to Pinal County. These students likely would not have come to the region if the college did not exist. While attending, out-of-region students spent \$541,160 to purchase groceries, rent accommodation, pay for transportation, and so on. A significant portion of these expenditures occurred in the region, generating \$67.9 thousand in new income in the economy during the analysis year.

## ALUMNI IMPACT

CAC's biggest impact results from the education and training it provides for local residents. Since the college was established, students have studied at CAC and entered the workforce with new skills. Today, thousands of former students are employed in Pinal County.

During the analysis year, former students of CAC generated \$179.2 million in added income in the region. This figure represents the higher wages that students earned during the year, the increased output of the businesses that employed the students, and the multiplier effects that occurred as students and their employers spent money at other businesses.

## TOTAL IMPACT

The overall impact of CAC on the local business community during the analysis year amounted to \$212.7 million, equal to the sum of the operations spending impact, the student spending impact, and the alumni impact. This added income was equal to approximately 4.0% of the region's Gross Regional Product.

# INVESTMENT ANALYSIS

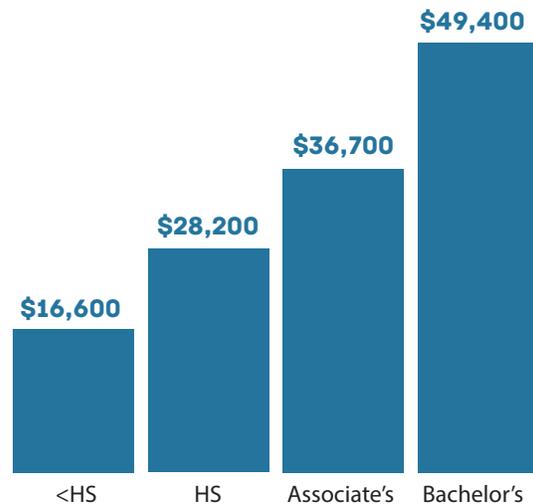
*Investment analysis is the process of evaluating total costs and measuring these against total benefits to determine whether or not a proposed venture will be profitable. If benefits outweigh costs, then the investment is worthwhile. If costs outweigh benefits, then the investment will lose money and is considered unprofitable. This study considers CAC as an investment from the perspectives of students, society, and taxpayers. The backdrop for the analysis is the entire Arizona economy.*

## STUDENT PERSPECTIVE

In 2013-14, CAC served 11,746 credit students and 135 non-credit students. In order to attend college, students paid for tuition, fees, books, and supplies. They also gave up money that they would have otherwise earned had they been working instead of attending college. The total investment made by CAC's students in FY 2013-14 amounted to \$55.7 million, equal to \$10.9 million in out-of-pocket expenses plus \$44.7 million in forgone time and money.

In return for their investment, CAC's students will receive a stream of higher future wages that will continue to grow through their working lives. As shown in Figure 1, mean income levels at the midpoint of the average-aged worker's career increase as people achieve higher levels of education. For example, the average associate's degree completer from CAC will see an increase in earnings of \$8,500 each year compared to someone with a high school diploma or equivalent. Over a working lifetime, this increase in earnings amounts to an undiscounted value of approximately \$340,000 in higher income.

**FIGURE 1. ANNUAL INCOME BY EDUCATION LEVEL AT CAREER MIDPOINT IN PINAL COUNTY**



Source: EMSI complete employment data.



The present value of the higher future wages that CAC’s students will receive over their working careers is \$336.4 million. Dividing this value by the \$55.7 million in student costs yields a benefit-cost ratio of 6.0. In other words, for every \$1 students invest in CAC in the form of out-of-pocket expenses and forgone time and money, they receive a cumulative of \$6.00 in higher future wages. The average annual rate of return for students is 23.5%. This is an impressive return compared, for example, to the less than 1% return per annum that is generally expected from saving money in today’s standard bank savings accounts.

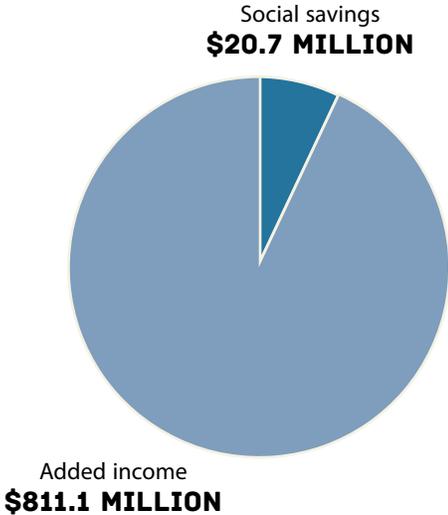
### SOCIAL PERSPECTIVE

Society as a whole within Arizona benefits from the presence of CAC in two major ways. The first and largest benefit that society receives is the added income created in the state. As discussed in the previous section, students earn more because of the skills they acquire while attending CAC. Businesses also earn more because the enhanced skills of students make them more productive. Together, higher student wages and increased business output stimulate increases in income across the state, thereby raising prosperity in Arizona and expanding the economic base for society as a whole.

Benefits to society also consist of the savings generated by the improved lifestyles of students. Education is statistically correlated with a variety of lifestyle changes that generate social savings across three main categories: 1) health, 2) crime, and 3) unemployment. Health savings include avoided medical costs associated with smoking, alcoholism, obesity, drug abuse, and mental disorders. Crime savings include reduced security expenditure and insurance administration, lower victim costs, and reduced criminal justice system expenditures. Unemployment savings include the reduced demand for income assistance and welfare benefits. For a list of study references to these statistical benefits, please contact the college for a copy of the main report.

Figure 2 shows the present value of the added income and social savings that will occur in Arizona over the working lifetime of the 2013-14 student population at CAC. Added income amounts to a present value of \$811.1 million due to the increased lifetime incomes of students and associated increases in business output. Social savings amount to \$20.7 million, the sum of health, crime, and unemployment savings in Arizona. Altogether, total benefits to society equal \$831.7 million (in present value terms).

**FIGURE 2. PRESENT VALUE OF ADDED INCOME AND SOCIAL SAVINGS IN ARIZONA**





Society invested \$120.2 million in CAC educations during the analysis year. This includes all expenditures by CAC, all student expenditures, and all student opportunity costs. For every dollar of this investment, society as a whole in Arizona will receive a cumulative value of \$6.90 in benefits, equal to the \$831.7 million in benefits divided by the \$120.2 million in costs. These benefits will occur for as long as CAC's 2012-13 students remains employed in the state workforce.

## TAXPAYER PERSPECTIVE

From the taxpayer perspective, benefits consist primarily of the taxes that state and local government will collect from the added income created in the state. As CAC students earn more, they will make higher tax payments. Employers will also make higher tax payments as they increase their output and purchase more supplies and services. By the end of the students' working careers, state and local government will have collected a present value of \$59.4 million in added taxes.

A portion of the savings enjoyed by society also accrues to state and local taxpayers. Students are more employable, so the demand for welfare and unemployment benefits reduces. Improved health habits lower the students' demand for national health care services. Students are also less likely to commit crimes, so the demand for law enforcement services reduces (study references are available in the main report). All of these benefits will generate a present value of \$6.8 million in savings to state and local taxpayers.

Total benefits to taxpayers equal \$66.2 million, equal to the sum of the added taxes and public sector savings. Comparing this to the taxpayer costs of \$51.3 million—equal to the funding that CAC received from state and local government during the analysis year—yields a benefit-cost ratio of 1.3. This means that for every \$1 of public money invested in CAC, taxpayers receive a cumulative value of \$1.30 over the course of the students' working lives. The average annual rate of return is 2.5%, a solid investment that compares favorably with other long-term investments in both the private and public sectors.

**TABLE 2. SUMMARY OF INVESTMENT ANALYSIS RESULTS**

<b>STUDENT PERSPECTIVE</b>	
<b>\$336,411</b>	Benefits (thousands)
<b>\$55,685</b>	Costs (thousands)
<b>\$280,725</b>	Net present value (thousands)
<b>6.0</b>	Benefit-cost ratio
<b>23.5%</b>	Rate of return

<b>SOCIAL PERSPECTIVE</b>	
<b>\$831,711</b>	Benefits (thousands)
<b>\$120,210</b>	Costs (thousands)
<b>\$711,501</b>	Net present value (thousands)
<b>6.9</b>	Benefit-cost ratio
<b>NA</b>	Rate of return*

<b>TAXPAYER PERSPECTIVE</b>	
<b>\$66,193</b>	Benefits (thousands)
<b>\$51,286</b>	Costs (thousands)
<b>\$14,907</b>	Net present value (thousands)
<b>1.3</b>	Benefit-cost ratio
<b>2.5%</b>	Rate of return

\* The rate of return is not reported for the social perspective because the beneficiaries of the investment are not necessarily the same as the original investors.

## SUMMARY OF INVESTMENT ANALYSIS RESULTS

Table 2 presents the results of the investment analysis for all three of CAC’s major stakeholder groups—students, society, and taxpayers. As shown, students receive great value for their educational investment. At the same time, the investment made by state and local taxpayers in the college creates a wide range of benefits to society and returns more to government budgets than it costs.



# CONCLUSION



The results of this study demonstrate that CAC creates value from multiple perspectives. The college benefits local businesses by increasing consumer spending in the region and supplying a steady flow of qualified, trained workers into the workforce. It enriches the lives of students by raising their lifetime incomes and helping them achieve their individual potential. It benefits society as a whole in Arizona by creating a more prosperous economy and generating a variety of savings through the improved lifestyles of students. Finally, it benefits state and local taxpayers through increased tax receipts across the state and a reduced demand for government-supported social services.

## ABOUT THE STUDY

Data and assumptions used in the study are based on several sources, including the 2013-14 academic and financial reports from the college, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of EMSI's Social Accounting Matrix (SAM) model, and a variety of studies and surveys relating education to social behavior. The study applies a conservative methodology and follows standard practice using only the most recognized indicators of investment effectiveness and economic impact. For a full description of the data and approach used in the study, please contact the college for a copy of the technical report.

## ABOUT EMSI

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