



The Economic Value of Arizona's Community Colleges



A RIZONA'S COMMUNITY COLLEGES* create value in many ways. The colleges play a key role in helping students increase their employability and achieve their individual potential. They draw students to the state, generating new dollars and opportunities for Arizona. The colleges provide students with the education, training, and skills they need to have fulfilling and prosperous careers. Furthermore, Arizona's community colleges are places for students to meet new people, increase their self-confidence, and promote their overall health and well-being.

Arizona's community colleges influence both the lives of students and the state economy. The colleges support a variety of industries in Arizona, serve state businesses, and benefit society as a whole in Arizona from an expanded economy and improved quality of life. Additionally, the benefits created by Arizona's community colleges extend to the state and local government through increased tax revenues and public sector savings.

This study measures the economic impacts created by Arizona's community colleges on the business community and the benefits the colleges generate in return for the investments made by their key stakeholder groups—students, taxpayers, and society. The following two analyses are presented:

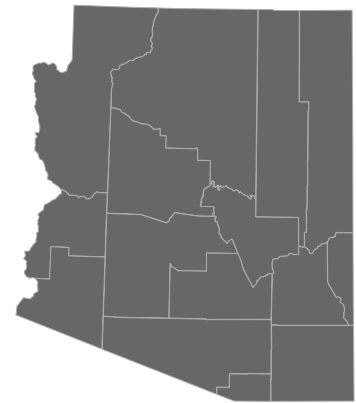


Economic impact analysis



Investment analysis

All results reflect employee, student, and financial data, provided by the colleges, for fiscal year (FY) 2021-22. Impacts on the economy of Arizona are reported under the economic impact analysis and are measured in terms of added income. The returns on investment to students, taxpayers, and society in Arizona are reported under the investment analysis.



Arizona

Arizona's community colleges influence both the **lives of students** and the **state economy**.

* Arizona's community colleges include Arizona Western College, Central Arizona College, Cochise College, Coconino Community College, Eastern Arizona College, Maricopa County Community College District, Mohave Community College, Northland Pioneer College, Pima Community College, and Yavapai College.



Economic impact analysis



Arizona's community colleges promote economic growth in Arizona through their direct expenditures and the resulting expenditures of students and state businesses. The colleges serve as employers and buyers of goods and services for their day-to-day and construction operations. The colleges' activities attract students from outside Arizona, whose expenditures benefit state vendors. In addition, the colleges are primary sources of higher education to Arizona residents and suppliers of trained workers to state industries, enhancing overall productivity in the state workforce.

Operations spending impact



Arizona's community colleges add economic value to Arizona as employers of state residents and large-scale buyers of goods and services. In FY 2021-22, the colleges employed 18,135 full-time and part-time faculty and staff, 96% of whom lived in Arizona. Total payroll at Arizona's community colleges was \$973.9 million, much of which was spent in the state for groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the colleges spent \$586.3 million on day-to-day expenses related to facilities, supplies, and professional services.

The day-to-day operations spending of the colleges added \$1.2 billion in income to the state during the analysis year. This figure represents the colleges' payroll, the multiplier effects generated by the in-state spending of the colleges and their employees, and a downward adjustment to account for funding that the colleges received from state sources. The \$1.2 billion in added income is equivalent to supporting 18,958 jobs in the state.

Construction spending impact



Arizona's community colleges invest in construction each year to maintain facilities, create additional capacities, and meet growing educational demands.

While the amount varies from year to year, these quick infusions of income and jobs have a substantial impact on the state economy. In FY 2021-22, the colleges' construction spending generated \$18.9 million in added income, which is equivalent to supporting 295 jobs.

Student spending impact



Around 11% of students attending Arizona's community colleges originated from outside the state in FY 2021-22, and some of these students relocated to Arizona to attend the colleges. These students may not have come to the state if

Impacts created by Arizona's community colleges in FY 2021-22



Operations spending impact

\$1.2 billion

+



Construction spending impact

\$18.9 million

+



Student spending impact

\$748.7 million

+



Alumni impact

\$11.1 billion



Total economic impact

\$13.0 billion

OR

Jobs supported

183,448



the colleges did not exist. In addition, some in-state students, referred to as retained students, would have left Arizona if not for the existence of Arizona's community colleges. While attending the colleges, these relocated and retained students spent money on groceries, accommodation, transportation, and other household expenses. This spending generated \$748.7 million in added income for the state economy in FY 2021-22, which supported 10,587 jobs in Arizona.

Alumni impact



The education and training the colleges provide for state residents has the greatest impact. Since the colleges were established, students have studied at Arizona's community colleges and entered the state workforce with greater knowledge and new skills. Today, hundreds of thousands of the colleges' former students are employed in Arizona. As a result of their education from Arizona's community colleges, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2021-22, the colleges' alumni generated \$11.1 billion in added income for the state economy, which is equivalent to supporting 153,608 jobs.

Total impact

Arizona's community colleges added \$13.0 billion in income to the Arizona economy during the analysis year, equal to the sum of operations and construction spending impacts; the student spending impact; and the alumni impact. For context, the \$13.0 billion impact was equal to approximately 2.9% of the total gross state product (GSP) of Arizona. This contribution that the colleges provided on their own is nearly as large as the entire Transportation & Warehousing industry in the state.

The total impact of Arizona's community colleges can also be expressed in terms of jobs supported. The \$13.0 billion impact supported 183,448 state jobs, using the jobs-to-sales ratios specific to each industry in the state. This means that one out of every 23 jobs in Arizona is supported by the activities of the colleges and their students. In addition, the \$13.0 billion, or 183,448 supported jobs, stemmed from different industry sectors. For instance, among non-education industry sectors, the spending of Arizona's community colleges and their students and the activities of their alumni in the Health Care & Social Assistance industry sector supported 20,767 jobs in FY 2021-22. If the colleges did not exist, these impacts would not have been generated in Arizona.

Arizona's community colleges impact by industry (jobs supported)



One out of every 23 jobs in Arizona is supported by the activities of the colleges and their students.

Investment analysis



An investment analysis evaluates the costs associated with a proposed venture against its expected benefits. If the benefits outweigh the costs, then the investment is financially worthwhile. The analysis presented here evaluates Arizona's community colleges as an investment from the perspectives of students, taxpayers, and society in Arizona.

Student perspective



In FY 2021-22, Arizona's community colleges served 247,525 credit and 21,955 non-credit students. In order to attend the colleges, the students paid for tuition, fees, books, and supplies. They also took out loans and will incur interest on those loans. Additionally, students gave up money they would have otherwise earned had they been working instead of attending college. The total investment made by the colleges' students in FY 2021-22 amounted to a present value of \$813.2 million, equal to \$298.9 million in out-of-pocket expenses (including future principal and interest on student loans) and \$514.3 million in forgone time and money.

In return for their investment, the colleges' students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average associate degree graduate from an Arizona community college in FY 2021-22 will see annual earnings \$8,700 higher than a person with a high school diploma or equivalent working in Arizona. Over a working lifetime, the benefits of the associate degree over a high school diploma will amount to an undiscounted value of \$356.7 thousand in higher earnings per graduate. The present value of the cumulative higher future earnings that the colleges' FY 2021-22 students will receive over their working careers is \$3.7 billion.

The students' benefit-cost ratio is 4.6. In other words, for every dollar students invest in an education at Arizona's community colleges in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$4.60 in higher future earnings. Annually, the students' investment in Arizona's community colleges

Students see a high rate of return for their investment in Arizona's community colleges



Average annual return for Arizona's community colleges students
17.3%



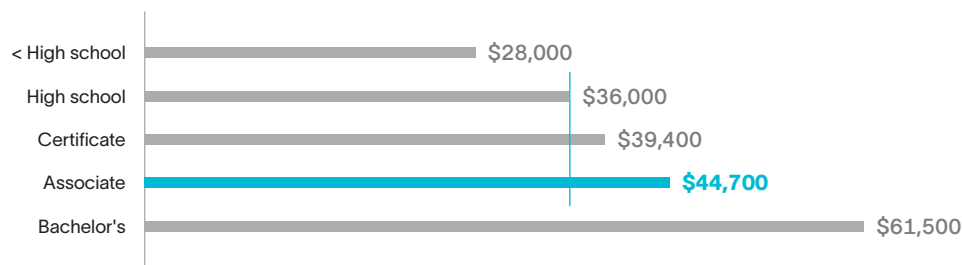
Stock market 30-year average annual return
9.6%



Interest earned on savings account (national deposit rate)
0.4%

Source: Forbes' S&P 500, 1992-2021. FDIC.gov, 2-2022.

The average associate degree graduate from an Arizona's community college will see an increase in earnings of **\$8,700** each year compared to a person with a high school diploma or equivalent working in Arizona.



Source: Lightcast employment data.

has an average annual internal rate of return of 17.3%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 9.6%.

Taxpayer perspective



Arizona's community colleges generate more in tax revenue than they receive.

These benefits to taxpayers consist primarily of taxes that the state and local government will collect from the added revenue created in the state. As the colleges' students will earn more, they will make higher tax payments throughout their working lives. Students' employers will also make higher tax payments as they increase their output and purchases of goods and services. By the end of the FY 2021-22 students' working lives, the state and local government will have collected a present value of \$1.2 billion in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of the colleges' students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. The education that the colleges' students receive will generate savings in three main categories: 1) healthcare, 2) justice system, and 3) income assistance. Improved health will lower students' demand for national health care services. In addition, costs related to the justice system will decrease. Students of Arizona's community colleges will be more employable, so their reduced demand for income assistance such as welfare and unemployment benefits will benefit taxpayers. For a list of study references, contact the Arizona Community College Coordinating Council for a copy of the main report. Altogether, the present value of the benefits associated with an education through Arizona's community colleges will generate \$121.0 million in savings to state and local taxpayers.

Total taxpayer benefits amount to \$1.3 billion, the present value sum of the added taxes and public sector savings. Taxpayer costs are \$1.2 billion, equal to the amount of state and local government funding Arizona's community colleges received in FY 2021-22. These benefits and costs yield a benefit-cost ratio of 1.1. This means that for every dollar of public money invested in Arizona's community colleges in FY 2021-22, taxpayers will receive a cumulative present value of \$1.10 over the course of the students' working lives. The average annual internal rate of return for taxpayers is 0.8%, which compares favorably to other long-term investments in the public sector.

For every dollar of public money invested in Arizona's community colleges, taxpayers will receive a cumulative value of **\$1.10** over the course of the students' working lives.

Social perspective



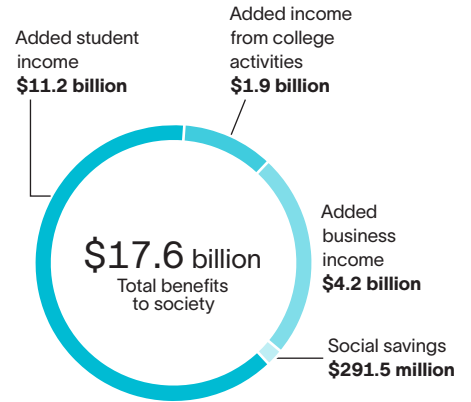
Society as a whole in Arizona benefits from the presence of Arizona's community colleges in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to the added income from students' increased lifetime earnings (added student income) and increased business output (added business income), which raise economic prosperity in Arizona.

Benefits to society also consist of the savings generated by the improved lifestyles of the colleges' students. As discussed in the previous section, education is statistically correlated with a variety of lifestyle changes that generate social savings. Note that these costs are avoided by the consumers but are distinct from the costs avoided by the taxpayers outlined above. Healthcare savings include avoided medical costs associated with smoking, alcohol dependence, obesity, drug abuse, and depression. Justice system savings include avoided costs to the government and society due to less judicial activity. Income assistance savings include reduced welfare and unemployment claims. For a list of study references, contact the Arizona Community College Coordinating Council for a copy of the main report.

Altogether, the social benefits of Arizona's community colleges equal a present value of \$17.6 billion. These benefits include \$11.2 billion in added student income, \$4.2 billion in added business income, \$1.9 billion in added income from college activities, as well as \$291.5 million in social savings related to health, the justice system, and income assistance in Arizona. People in Arizona invested a present value total of \$2.3 billion in Arizona's community colleges in FY 2021-22. The cost includes all the colleges' expenditures and student costs.

The benefit-cost ratio for society is 7.8, equal to the \$17.6 billion in benefits divided by the \$2.3 billion in costs. In other words, for every dollar invested in Arizona's community colleges, people in Arizona will receive a cumulative value of \$7.80 in benefits. The benefits of this investment will occur for as long as the colleges' FY 2021-22 students remain employed in the state workforce.

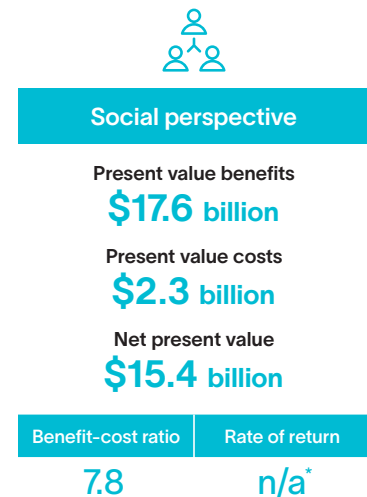
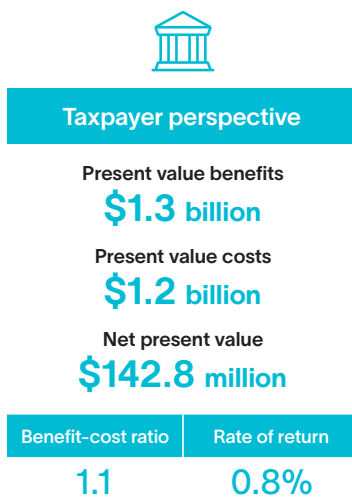
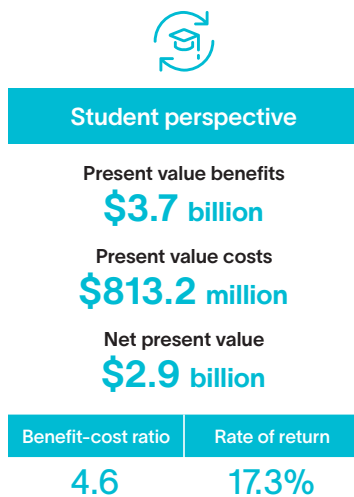
Social benefits in Arizona from Arizona's community colleges



Source: Lightcast impact model.

Summary of investment analysis results

The results of the analysis demonstrate that Arizona's community colleges are a strong investment for all three major stakeholder groups—students, taxpayers, and society. As shown, students receive a great return for their investments in an education at the colleges. At the same time, taxpayers' investment in the colleges returns more to government budgets than it costs and creates a wide range of social benefits throughout Arizona.



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

Conclusion

The results of this study demonstrate that Arizona's community colleges create value from multiple perspectives. The colleges benefit state businesses by increasing consumer spending in the state and supplying a steady flow of qualified, trained workers to the workforce. Arizona's community colleges enrich the lives of students by raising their lifetime earnings and helping them achieve their individual potential. The colleges benefit state and local taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, Arizona's community colleges benefit society as a whole in Arizona by creating a more prosperous economy and generating a variety of savings through the improved lifestyles of students.



About the study

Data and assumptions used in the study are based on several sources, including the FY 2021-22 academic and financial reports from Arizona's community colleges, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Lightcast's Multi-Regional Social Accounting Matrix 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 economic impact and investment effectiveness. For a full description of the data and approach used in the study, please contact the Arizona Community College Coordinating Council for a copy of the main report.

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Lightcast provides colleges and universities with labor market data that help create better outcomes for students, businesses, and communities. Our data, which cover more than 99% of the U.S. workforce, are compiled from a wide variety of government sources, job postings, and online profiles and résumés. Hundreds of institutions use Lightcast to align programs with regional needs, drive enrollment, connect students with in-demand careers, track their alumni's employment outcomes, and demonstrate their institution's economic impact on their region. Visit lightcast.io/solutions/education to learn more or connect with us.