



PARADISE VALLEY
COMMUNITY COLLEGE

A MARICOPA COMMUNITY COLLEGE

The Economic Value of Paradise Valley Community College

EXECUTIVE SUMMARY



PARADISE Valley Community College (PVCC) creates value in many ways. The college plays a key role in helping students increase their employability and achieve their individual potential. The college draws students to the county, generating new dollars and opportunities for Maricopa County. PVCC provides students with the education, training, and skills they need to have fulfilling and prosperous careers. Furthermore, PVCC is a place for students to meet new people, increase their self-confidence, and promote their overall health and well-being.

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

This study measures the economic impacts created by PVCC on the business community and the benefits the college generates in return for the investments made by its 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 Maricopa County Community College District (MCCCD), for fiscal year (FY) 2016-17. Impacts on the Maricopa County economy 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.

PVCC influences both the lives of its students and the county economy.



Economic impact analysis

PVCC promotes economic growth in Maricopa County through its direct expenditures and the resulting expenditures of students and county businesses. The college serves as an employer and buyer of goods and services for its day-to-day operations. The college's activities attract students from outside Maricopa County, whose expenditures benefit county vendors. In addition, PVCC is a primary source of higher education to Maricopa County residents and a supplier of trained workers to county industries, enhancing overall productivity in the county workforce.

Operations Spending Impact



PVCC adds economic value to Maricopa County as an employer of county residents and a large-scale buyer of goods and services. In FY 2016-17, the college employed 760 full-time and part-time faculty and staff, 95% of whom lived in Maricopa County. Total payroll at PVCC was \$31.2 million, much of which was spent in the county for groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the college spent \$9.3 million on day-to-day expenses related to facilities, supplies, and professional services.

PVCC's day-to-day operations spending added \$34.2 million in income to the county during the analysis year. This figure represents the college's payroll, the multiplier effects generated by the in-county spending of the college and its employees, and a downward adjustment to account for funding that the college received from county sources. The \$34.2 million in added income is equivalent to supporting 823 jobs in the county.

Student Spending Impact



The majority of PVCC's students are from Maricopa County. Some of these students would have left the county if not for the college. Additionally, some students relocated to Maricopa County to attend PVCC in FY 2016-17. These students may not have come to the county if the college did not exist. While attending the college, these students, referred to as retained and relocated students, spent money on groceries, accommodation, transportation, and other household expenses. This spending generated \$21 million in added income for the county economy in FY 2016-17, which supported 265 jobs in Maricopa County.

IMPACTS CREATED BY PVCC
IN FY 2016-17



\$34.2 million
Operations Spending Impact



\$21 million
Student Spending Impact



\$376.4 million
Alumni Impact



\$431.6 million
TOTAL IMPACT

- OR -

6,873
JOBS SUPPORTED

Alumni Impact



The education and training PVCC provides for county residents has the greatest impact. Since its establishment, students have studied at PVCC and entered the county workforce with greater knowledge and new skills. Once finishing their time at the college, 96% of students remain in Maricopa County. Today, thousands of former PVCC students are employed in Maricopa County. As a result of their PVCC educations, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2016-17, PVCC alumni generated \$376.4 million in added income for the county economy, which is equivalent to supporting 5,785 jobs.

Total Impact

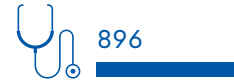
PVCC added \$431.6 million in income to the Maricopa County economy during the analysis year, equal to the sum of the operations spending impact, the student spending impact, and the alumni impact.

PVCC's total impact can also be expressed in terms of jobs supported. The \$431.6 million impact supported 6,873 county jobs, using the jobs-to-sales ratios specific to each industry in the county. In addition, the \$431.6 million, or 6,873 supported jobs, impacted county industries in different ways. Among non-education industry sectors, PVCC supported the most jobs in the Professional & Technical Services industry sector – supporting 2,001 jobs in FY 2016-17. These are impacts that would not have been generated without the college's presence in Maricopa County.

TOP INDUSTRIES IMPACTED BY PVCC (JOBS SUPPORTED)



Professional & Technical Services



Health Care & Social Assistance



Retail Trade



Arts, Entertainment, & Recreation



Government, Non-Education





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 considers PVCC as an investment from the perspectives of students, taxpayers, and society in Arizona.

Student Perspective



In FY 2016-17, PVCC served 12,586 credit and 409 non-credit students. In order to attend the college, the students paid for tuition, fees, books, and supplies. They also took out loans and will incur interest on those loans. Additionally, students invested their time, giving up money they would have otherwise earned had they been working instead of attending college. The total investment made by PVCC's students in FY 2016-17 amounted to a present value of \$58.6 million, equal to \$16.4 million in out-of-pocket expenses (including future principal and interest on student loans) and \$42.2 million in forgone time and money.

In return for their investment, PVCC's students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average PVCC associate degree graduate from FY 2016-17 will see an increase in earnings of \$9,800 each year compared to 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 \$401.8 thousand in higher earnings per graduate. Altogether, PVCC's FY 2016-17 students will receive \$219 million in higher future earnings over their working lives, as a result of their education and training at PVCC.

STUDENTS SEE A HIGH RATE OF RETURN FOR THEIR INVESTMENT IN PVCC



14.9%

Average annual return for PVCC students



10.1%

Stock market 30-year average annual return

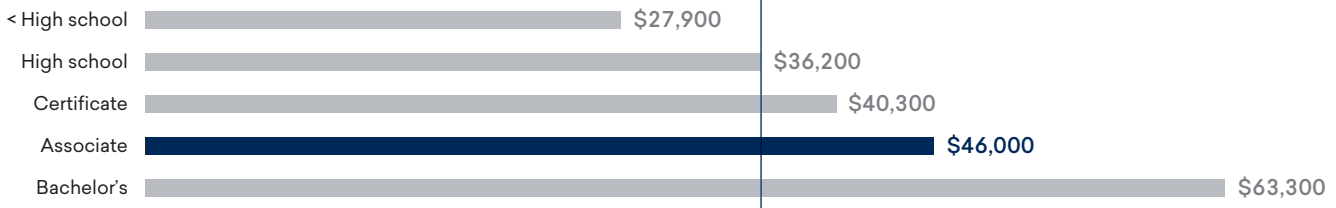


0.8%

Interest earned on savings account (National Rate Cap)

Source: Forbes' S&P 500, 1987-2016. FDIC.gov, 7-2016.

The average associate degree graduate from PVCC will see an increase in earnings of **\$9,800** each year compared to a person with a high school diploma or equivalent working in Arizona.



Source: Emsi complete employment data.

The students' benefit-cost ratio is 3.7. In other words, for every dollar students invest in PVCC, in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$3.70 in higher future earnings. Annually, the students' investment in PVCC has an average annual internal rate of return of 14.9%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.1%.

Taxpayer Perspective



PVCC generates more in tax revenue than it takes. 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 PVCC 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 2016-17 students' working lives, the state and local government will have collected a present value of \$147 million in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of PVCC students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. Students' PVCC educations will generate savings in three main categories: 1) healthcare, 2) crime, and 3) income assistance. Improved health will lower students' demand for health care services. In addition, students will be less likely to interact with the criminal justice system, resulting in a reduced demand for law enforcement and victim costs. PVCC students 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 MCCCDC for a copy of the district's main report. Altogether, the present value of the benefits associated with a PVCC education will generate \$4.5 million in savings to state and local taxpayers.

Total taxpayer benefits amount to \$151.4 million, the present value sum of the added taxes and public sector savings. Taxpayer costs are \$28.4 million, equal to the amount of state and local government funding PVCC received in FY 2016-17. These benefits and costs yield a benefit-cost ratio of 5.3. This means that for every dollar of public money invested in

*For every dollar of public money invested in PVCC, taxpayers will receive a cumulative value of **\$5.30** over the course of the students' working lives.*



STUDENT PERSPECTIVE

\$219 million
Present value benefits

\$58.6 million
Present value costs

\$160.4 million
Net present value

Benefit-cost Ratio	Rate of Return
3.7	14.9%



TAXPAYER PERSPECTIVE

\$151.4 million
Present value benefits

\$28.4 million
Present value costs

\$123.1 million
Net present value

Benefit-cost Ratio	Rate of Return
5.3	15.4%



SOCIAL PERSPECTIVE

\$2 billion
Present value benefits

\$94.5 million
Present value costs

\$1.9 billion
Net present value

Benefit-cost Ratio	Rate of Return
20.8	n/a*

* 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.

PVCC in FY 2016-17, taxpayers will receive a cumulative value of \$5.30 over the course of the students' working lives. The average annual internal rate of return for taxpayers is 15.4%, which compares favorably to other long-term investments in the public and private sectors.

Social Perspective



Society as a whole in Arizona benefits from the presence of PVCC in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to higher student earnings and increased business output, which raise economic prosperity in Arizona.

Benefits to society also consist of the savings generated by the improved lifestyles of PVCC 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. Savings related to crime include reduced security expenditures and insurance administration, lower victim costs, and reduced expenditures by the criminal justice system. Income assistance savings include reduced welfare and unemployment claims. For a list of study references, contact MCCCDC for a copy of the district's main report.

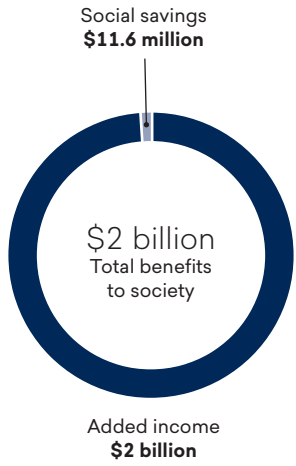
Altogether, the social benefits of PVCC equal a present value of \$2 billion. These benefits include \$2 billion in added income through students' increased lifetime earnings and increased business output, as well as \$11.6 million in social savings related to health, crime, and income assistance in Arizona. People in Arizona invested a present value total of \$94.5 million in PVCC in FY 2016-17. The cost includes all the college and student costs.

The benefit-cost ratio for society is 20.8, equal to the \$2 billion in benefits divided by the \$94.5 million in costs. In other words, for every dollar invested in PVCC, people in Arizona will receive a cumulative value of \$20.80 in benefits. The benefits of this investment will occur for as long as PVCC's FY 2016-17 students remain employed in the state workforce.

Summary of Investment Analysis Results

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

SOCIAL BENEFITS IN ARIZONA FROM PVCC



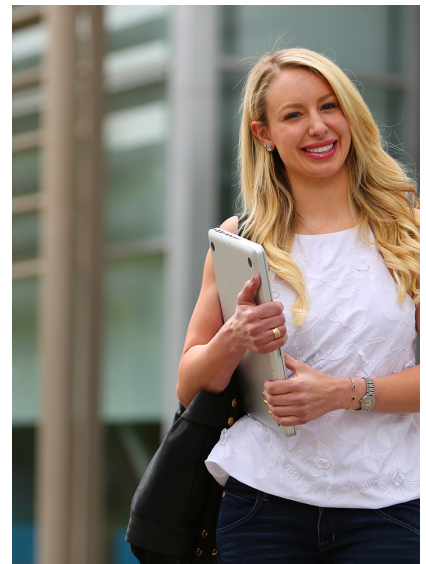
Conclusion

The results of this study demonstrate that PVCC creates value from multiple perspectives. The college benefits county businesses by increasing consumer spending in the county and supplying a steady flow of qualified, trained workers to the workforce. PVCC enriches the lives of students by raising their lifetime earnings and helping them achieve their individual potential. The college benefits state and local taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, PVCC 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.

About the Study

Data and assumptions used in the study are based on several sources, including the FY 2016-17 academic and financial reports provided by MCCCDC, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Emsi'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 MCCCDC for a copy of the district's main report.

The results of this study demonstrate that PVCC creates value from
multiple perspectives.



Emsi is a labor market analytics firm that integrates data from a wide variety of sources to serve professionals in higher education, economic development, workforce development, talent acquisition, and site selection. Emsi is a leading provider of economic impact studies and labor market data to educational institutions in the U.S. and internationally. Since 2000, Emsi has completed over 1,800 economic impact studies for institutions across four countries. For more information about Emsi's products and services, visit www.economicmodeling.com.