



# The Economic Value of Career and Technical Education at Southwestern College



**CAREER AND TECHNICAL EDUCATION<sup>1</sup>** (CTE) at Southwestern College (SWC) creates value in many ways. SWC plays a key role in helping CTE students increase their employability and achieve their individual potential. The college draws students to the region, generating new dollars and opportunities for the SWCCD Service Region.<sup>2</sup> SWC’s CTE provides students with the training and skills they need to have fulfilling and prosperous careers. Furthermore, SWC is a place for CTE students to meet new people, expand their networks, increase their self-confidence, and promote their overall health and well-being.

SWC’s CTE programs influence both the lives of students and the regional economy. SWC’s CTE programs support a variety of industries in the SWCCD Service Region, serves regional businesses, and benefits society as a whole in California from an expanded economy and improved quality of life. Additionally, the benefits created by SWC’s CTE extend to the state and local government through increased tax revenues and public sector savings.

This study measures the economic impacts created by SWC’s CTE on the business community and the benefits CTE 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 college, for fiscal year (FY) 2019-20. Impacts on the SWCCD Service Region economy are reported under the economic impact analysis and are measured in terms of added income. Impacts are also stated in terms of jobs, a measure of the number of full- and part-time jobs that would be required to support the change in income. The returns on investment to students, taxpayers, and society in California are reported under the investment analysis.

1 Career and Technical Education (CTE) is defined at the course level and includes courses coded A-C (Apprenticeship, Advanced Occupational, and Clearly Occupational).

2 For the purposes of this analysis, the SWCCD Service Region is comprised of the following 14 zip codes in San Diego County: 91902, 91910, 91911, 91913, 91914, 91915, 91932, 91950, 92118, 92135, 92136, 92154, 92155, and 92173.

SWC’s CTE influences both the **lives of its students** and the **regional economy**.



THE SWCCD SERVICE REGION, CA



SWC's CTE programs promote economic growth in the SWCCD Service Region through their direct expenditures and the resulting expenditures of students and regional businesses. CTE serves as an employer and buyer of goods and services for its day-to-day and construction operations. The college's CTE course offerings attract students from outside the SWCCD Service Region, whose expenditures benefit regional vendors. In addition, SWC CTE is an important source of higher education to the SWCCD Service Region residents and a supplier of trained workers to regional industries, enhancing overall productivity in the regional workforce.

## Operations spending impact



SWC's CTE adds economic value to the SWCCD Service Region as an employer of regional residents and a large-scale buyer of goods and services. In FY 2019-20, the college employed 733 full-time and part-time CTE-related faculty and staff, 56% of whom lived in the SWCCD Service Region.<sup>3</sup> Payroll amounted to \$37.1 million, much of which was spent in the region for groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the SWC's CTE spent \$28.7 million on day-to-day expenses related to facilities, supplies, and professional services.<sup>4</sup>

SWC's CTE day-to-day operations spending added \$39.5 million in income to the region during the analysis year. This figure represents the college's CTE payroll, the multiplier effects generated by the in-region spending of CTE and its employees, and a downward adjustment to account for funding received from regional sources. The \$39.5 million in added income is equivalent to supporting 741 jobs in the region.

## Construction spending impact



SWC invests in construction each year to maintain its facilities, create additional capacities, and meet its growing educational demands. While the amount varies from year to year, these quick infusions of income and jobs have a substantial impact on the regional economy. In FY 2019-20, SWC's CTE construction spending generated \$275,300 in added income, which is equivalent to supporting three jobs.

<sup>3</sup> Due to data limitations, the number of faculty and staff was estimated using a proportion based on CTE headcount.

<sup>4</sup> Due to data limitations, revenue and expenditure data were estimated using a proportion based on CTE headcount.

### IMPACTS CREATED BY SWC'S CTE IN FY 2019-20



Operations spending impact

**\$39.5 million**



Construction spending impact

**\$275.3 thousand**



Student spending impact

**\$5.9 million**



Alumni impact

**\$138.8 million**



TOTAL ECONOMIC IMPACT

**\$184.5 million**

OR

Jobs supported

**2,293**

## Student spending impact



Around 25% of students attending SWC originated from outside the region in FY 2019-20, and some of these students relocated to the SWCCD Service Region to attend the college. These students may not have come to the region if SWC's CTE programs did not exist. In addition, some in-region CTE students, referred to as retained students, would have left the SWCCD Service Region if not for the existence of SWC's CTE programs. While attending the college, these relocated and retained CTE students spent money on groceries, accommodation, transportation, and other household expenses. This spending generated \$5.9 million in added income for the regional economy in FY 2019-20, which supported 92 jobs in the SWCCD Service Region.

## Alumni impact



The education and training SWC's CTE provides for regional residents has the greatest impact. Since its establishment, students have enrolled in SWC's CTE and entered the regional workforce with greater knowledge and new skills. Today, hundreds of former SWC CTE students are employed in the SWCCD Service Region. As a result of their education from SWC's CTE, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2019-20, SWC's CTE alumni generated \$138.8 million in added income for the regional economy, which is equivalent to supporting 1,457 jobs.

## Total impact

SWC's CTE added \$184.5 million in income to the SWCCD Service Region economy during the analysis year, equal to the sum of the operations and construction spending impacts, the student spending impact, and the alumni impact. For context, the \$184.5 million impact was equal to approximately 0.7% of the total gross regional product (GRP) of the SWCCD Service Region. This contribution that SWC's CTE provided on its own is larger than the entire Arts, Entertainment, & Recreation industry in the region.

SWC's CTE total impact can also be expressed in terms of jobs supported. The \$184.5 million impact supported 2,293 regional jobs, using the jobs-to-sales ratios specific to each industry in the region. This means that one out of every 94 jobs in the SWCCD Service Region is supported by the activities of SWC's CTE and its students. In addition, the \$184.5 million, or 2,293 supported jobs, stemmed from different industry sectors. Among non-education industry sectors, SWC's CTE spending and alumni in the Health Care & Social Assistance industry sector supported 233 jobs in FY 2019-20. If SWC's CTE did not exist, these impacts would not have been generated in the SWCCD Service Region.

### SWC'S CTE IMPACTS BY INDUSTRY (JOBS SUPPORTED)



**One out of every 94 jobs** in the SWCCD Service Region is supported by the activities of SWC's CTE and its students.



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 SWC's CTE as an investment from the perspectives of students, taxpayers, and society in California.

## Student perspective



In FY 2019-20, SWC's CTE served 9,638 credit and 160 non-credit students. CTE 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 SWC's CTE students in FY 2019-20 amounted to a present value of \$47.7 million, equal to \$12.6 million in out-of-pocket expenses (including future principal and interest on student loans) and \$35.2 million in forgone time and money.

In return for their investment, SWC's CTE students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average SWC CTE associate degree graduate from FY 2019-20 will see annual earnings that are \$12,900 higher than a person with a high school diploma or equivalent working in California. Over a working lifetime, the benefits of the associate degree over a high school diploma will amount to an undiscounted value of \$516,000 in higher earnings per graduate. The present value of the cumulative higher future earnings that SWC's FY 2019-20 CTE students will receive over their working careers is \$334.6 million.

The CTE students' benefit-cost ratio is 7.0. In other words, for every dollar CTE students invest in their education at SWC in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$7.00 in

### CTE STUDENTS SEE A HIGH RATE OF RETURN FOR THEIR INVESTMENT IN SWC



Average annual return for SWC CTE students  
**23.6%**



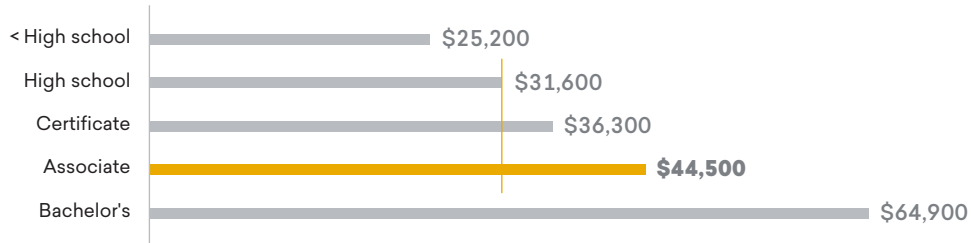
Stock market 30-year average annual return  
**10.6%**



Interest earned on savings account (National Rate Cap)  
**0.8%**

Source: Forbes' S&P 500, 1991-2020. FDIC.gov, 6-2021.

The average CTE associate degree graduate from SWC will see an increase in earnings of **\$12,900** each year compared to a person with a high school diploma or equivalent working in California.



Source: Emsi Burning Glass employment data.

higher future earnings. Annually, the CTE students' investment has an average annual internal rate of return of 23.6%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.6%.

## Taxpayer perspective



SWC's CTE 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 SWC's CTE 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 2019-20 CTE students' working lives, the state and local government will have collected a present value of \$108.9 million in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of SWC's CTE students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. The educations that SWC's CTE 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. SWC CTE students will be more employable, so their reduced demand for income assistance such as welfare and unemployment benefits will benefit taxpayers.<sup>5</sup> Altogether, the present value of the benefits associated with an education from SWC's CTE will generate \$15.3 million in savings to state and local taxpayers.

Total taxpayer benefits amount to \$124.2 million, the present value sum of the added taxes and public sector savings. Taxpayer costs are \$53.1 million, equal to the amount of state and local government funding SWC's CTE received in FY 2019-20. These benefits and costs yield a benefit-cost ratio of 2.3. This means that for every dollar of public money invested in SWC's CTE in FY 2019-20, taxpayers will receive a cumulative present value of \$2.30 over the course of the students' working lives. The average annual internal rate of return for taxpayers is 5.5%, which compares favorably to other long-term investments in the public and private sectors.

For every dollar of public money invested in SWC's CTE, taxpayers will receive a cumulative value of **\$2.30** over the course of the students' working lives.

## Social perspective



Society as a whole in California benefits from the presence of SWC's CTE in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to the added income

from CTE students' increased lifetime earnings (added student income) and increased business output (added business income), which raise economic prosperity in California.

<sup>5</sup> For a list of study references, contact the San Diego/Imperial County Community College Association (SDICCCA) for a copy of the main report completed for SDICCCA.

Benefits to society also consist of the savings generated by the improved lifestyles of SWC's CTE 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.

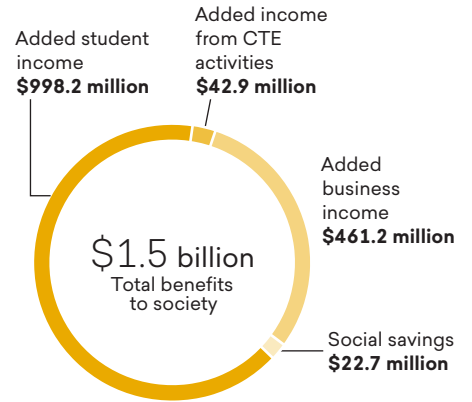
Altogether, the social benefits of SWC's CTE equal a present value of \$1.5 billion. These benefits include \$998.2 million in added student income, \$461.2 million in added business income, \$42.9 million in added income from CTE activities, as well as \$22.7 million in social savings related to health, crime, and income assistance in California. People in California invested a present value total of \$113.1 million in SWC's CTE in FY 2019-20. The cost includes all the CTE and student costs.

The benefit-cost ratio for society is 13.5, equal to the \$1.5 billion in benefits divided by the \$113.1 million in costs. In other words, for every dollar invested in SWC's CTE, people in California will receive a cumulative value of \$13.50 in benefits. The benefits of this investment will occur for as long as SWC's FY 2019-20 CTE students remain employed in the state workforce.

### Summary of investment analysis results

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

SOCIAL BENEFITS IN CALIFORNIA FROM SWC'S CTE



Source: Emsi Burning Glass impact model.



#### STUDENT PERSPECTIVE

Present value benefits  
**\$334.6 million**

Present value costs  
**\$47.7 million**

Net present value  
**\$286.9 million**



#### TAXPAYER PERSPECTIVE

Present value benefits  
**\$124.2 million**

Present value costs  
**\$53.1 million**

Net present value  
**\$71.1 million**



#### SOCIAL PERSPECTIVE

Present value benefits  
**\$1.5 billion**

Present value costs  
**\$113.1 million**

Net present value  
**\$1.4 billion**

STUDENT PERSPECTIVE		TAXPAYER PERSPECTIVE		SOCIAL PERSPECTIVE	
Benefit-cost ratio	Rate of return	Benefit-cost ratio	Rate of return	Benefit-cost ratio	Rate of return
7.0	23.6%	2.3	5.5%	13.5	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.

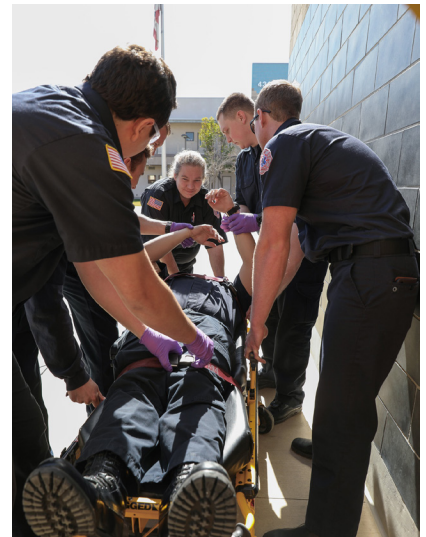
# CONCLUSION

The results of this study demonstrate that SWC's CTE creates value from multiple perspectives. SWC's CTE benefits regional businesses by increasing consumer spending in the region and supplying a steady flow of qualified, trained workers to the workforce. SWC's CTE enriches the lives of students by raising their lifetime earnings and helping them achieve their individual potential. It benefits state and local taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, SWC's CTE benefits society as a whole in California 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 2019-20 academic and financial reports from SWC, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Emsi Burning Glass'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 San Diego/Imperial County Community College Association (SDICCCA) for a copy of the SDICCCA main report.

The results of this study demonstrate that SWC's CTE creates value from **multiple perspectives.**



Emsi Burning Glass 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 Emsi Burning Glass 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 [economicmodeling.com/higher-education](http://economicmodeling.com/higher-education) to learn more or connect with us.