



The Collective Economic Value of North Carolina Community Colleges



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

North Carolina Community Colleges influence both the lives of students and the state economy. The colleges support a variety of industries in North Carolina, serve state businesses, and benefit society as a whole in North Carolina from an expanded economy and improved quality of life. Additionally, the benefits created by North Carolina 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 North Carolina 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) 2019-20. Impacts on the North Carolina 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 North Carolina are reported under the investment analysis.



NORTH CAROLINA

North Carolina Community Colleges influence both the **lives of students** and the **state economy**.



North Carolina Community Colleges promote economic growth in North Carolina 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 North Carolina, whose expenditures benefit state vendors. In addition, the colleges are primary sources of higher education to North Carolina residents and suppliers of trained workers to state industries, enhancing overall productivity in the state workforce.

Operations spending impact



North Carolina Community Colleges add economic value to North Carolina as employers of state residents and large-scale buyers of goods and services. In FY 2019-20, the colleges employed 36,422 full-time and part-time faculty and staff, 98% of whom lived in North Carolina. Total payroll at North Carolina Community Colleges was \$1.4 billion, 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 \$802.9 million on day-to-day expenses related to facilities, supplies, and professional services.

The colleges' day-to-day operations spending added \$1.4 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 and local sources. The \$1.4 billion in added income is equivalent to supporting 37,067 jobs in the state.

Construction spending impact



North Carolina 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 2019-20, North Carolina Community Colleges' construction spending generated \$93.2 million in added income, which is equivalent to supporting 1,534 jobs.

IMPACTS CREATED BY NORTH CAROLINA COMMUNITY COLLEGES IN FY 2019-20



Operations spending impact

\$1.4 billion



Construction spending impact

\$93.2 million



Student spending impact

\$588 million



Alumni impact

\$17.1 billion



TOTAL ECONOMIC IMPACT

\$19.3 billion

OR

Jobs supported

319,763

Student spending impact



Around 3% of students attending North Carolina Community Colleges originated from outside the state in FY 2019-20, and some of these students relocated to North Carolina to attend the colleges. These students may not have come to the state if the colleges did not exist. In addition, some in-state students, referred to as retained students, would have left North Carolina if not for the existence of North Carolina Community Colleges. While attending the colleges, these relocated and retained students spent money on groceries, accommodation, transportation, and other household expenses. This spending generated \$588 million in added income for the state economy in FY 2019-20, which supported 13,936 jobs in North Carolina.

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 North Carolina Community Colleges and entered the state workforce with greater knowledge and new skills. Today, hundreds of thousands of former students are employed in North Carolina. As a result of their education from North Carolina Community Colleges, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2019-20, the alumni of North Carolina Community Colleges generated \$17.1 billion in added income for the state economy, which is equivalent to supporting 267,226 jobs.

Total impact

North Carolina Community Colleges added \$19.3 billion in income to the North Carolina 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 \$19.3 billion impact was equal to approximately 3.4% of the total gross state product (GSP) of North Carolina. This contribution that the colleges provided on their own was larger than the entire Transportation & Warehousing industry in the state.

The colleges' total impact can also be expressed in terms of jobs supported. The \$19.3 billion impact supported 319,763 state jobs, using the jobs-to-sales ratios specific to each industry in the state. This means that one out of every 19 jobs in North Carolina is supported by the activities of the colleges and their students. In addition, the \$19.3 billion, or 319,763 supported jobs, stemmed from different industry sectors. Among non-education industry sectors, North Carolina Community Colleges' spending and alumni in the Retail Trade industry sector supported 37,758 jobs in FY 2019-20. If the colleges did not exist, these impacts would not have been generated in North Carolina.

NORTH CAROLINA COMMUNITY COLLEGES IMPACT BY INDUSTRY (JOBS SUPPORTED)



One out of every 19 jobs in North Carolina is supported by the activities of the colleges and their 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 North Carolina Community Colleges as an investment from the perspectives of students, taxpayers, and society in North Carolina.

Student perspective



In FY 2019-20, North Carolina Community Colleges served 303,842 credit and 381,453 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 students of North Carolina Community Colleges in FY 2019-20 amounted to a present value of \$2.4 billion, equal to \$435 million in out-of-pocket expenses (including future principal and interest on student loans) and \$1.9 billion 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 North Carolina Community Colleges associate degree graduate from FY 2019-20 will see annual earnings \$6,900 higher than a person with a high school diploma or equivalent working in North Carolina. Over a working lifetime, the benefits of the associate degree over a high school diploma will amount to an undiscounted value of \$255.3 thousand in higher earnings per graduate. The present value of the cumulative higher future earnings that the colleges' FY 2019-20 students will receive over their working careers is \$10.8 billion.

The students' benefit-cost ratio is 4.5. In other words, for every dollar students invest in an education at North Carolina Community Colleges in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative

STUDENTS SEE A HIGH RATE OF RETURN FOR THEIR INVESTMENT IN NORTH CAROLINA COMMUNITY COLLEGES



Average annual return for North Carolina Community Colleges' students
22.3%



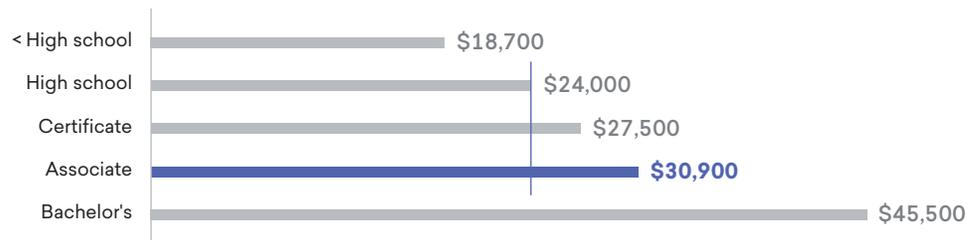
Stock market 30-year average annual return
10.6%



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

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

The average associate degree graduate from North Carolina Community Colleges will see an increase in earnings of **\$6,900** each year compared to a person with a high school diploma or equivalent working in North Carolina.



Source: Emsi Burning Glass employment data.

value of \$4.50 in higher future earnings. Annually, the students' investment in North Carolina Community Colleges has an average annual internal rate of return of 22.3%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.6%.

Taxpayer perspective



North Carolina Community Colleges generate more in tax revenue than they take. 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 2019-20 students' working lives, the state and local government will have collected a present value of \$3.1 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 educations 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. The colleges' 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 the North Carolina Community College System for a copy of the main report. Altogether, the present value of the benefits associated with a North Carolina Community College education will generate \$219.2 million in savings to state and local taxpayers.

Total taxpayer benefits amount to \$3.3 billion, the present value sum of the added taxes and public sector savings. Taxpayer costs are \$1.7 billion, equal to the amount of state and local government funding North Carolina Community Colleges received in FY 2019-20. These benefits and costs yield a benefit-cost ratio of 1.9. This means that for every dollar of public money invested in North Carolina Community Colleges in FY 2019-20, taxpayers will receive a cumulative present value of \$1.90 over the course of the students' working lives. The average annual internal rate of return for taxpayers is 5.3%, which compares favorably to other long-term investments in the public and private sectors.

Social perspective



Society as a whole in North Carolina benefits from the presence of North Carolina 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 North Carolina.

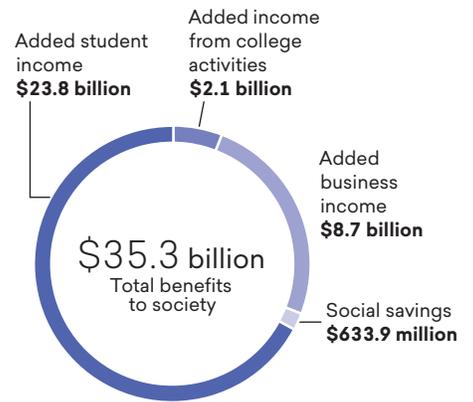
For every dollar of public money invested in North Carolina Community Colleges, taxpayers will receive a cumulative value of **\$1.90** over the course of the students' working lives.

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 North Carolina Community College System for a copy of the main report.

Altogether, the social benefits of North Carolina Community Colleges equal a present value of \$35.3 billion. These benefits include \$23.8 billion in added student income, \$8.7 billion in added business income, \$2.1 billion in added income from the colleges' activities, as well as \$633.9 million in social savings related to health, crime, and income assistance in North Carolina. People in North Carolina invested a present value total of \$4.7 billion in North Carolina Community Colleges in FY 2019-20. The cost includes all the colleges' expenditures and student costs.

The benefit-cost ratio for society is 7.5, equal to the \$35.3 billion in benefits divided by the \$4.7 billion in costs. In other words, for every dollar invested in North Carolina Community Colleges, people in North Carolina will receive a cumulative value of \$7.50 in benefits. The benefits of this investment will occur for as long as the colleges' FY 2019-20 students remain employed in the state workforce.

SOCIAL BENEFITS IN NORTH CAROLINA FROM NORTH CAROLINA COMMUNITY COLLEGES



Source: Emsi Burning Glass impact model.

Summary of investment analysis results

The results of the analysis demonstrate that North Carolina 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 a North Carolina Community College education. At the same time, taxpayers' investment in North Carolina Community Colleges returns more to government budgets than it costs and creates a wide range of social benefits throughout North Carolina.

STUDENT PERSPECTIVE		TAXPAYER PERSPECTIVE		SOCIAL PERSPECTIVE	
Present value benefits	\$10.8 billion	Present value benefits	\$3.3 billion	Present value benefits	\$35.3 billion
Present value costs	\$2.4 billion	Present value costs	\$1.7 billion	Present value costs	\$4.7 billion
Net present value	\$8.4 billion	Net present value	\$1.6 billion	Net present value	\$30.8 billion
Benefit-cost ratio	4.5	Benefit-cost ratio	1.9	Benefit-cost ratio	7.5
Rate of return	22.3%	Rate of return	5.3%	Rate of return	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 North Carolina 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. North Carolina 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, North Carolina Community Colleges benefit society as a whole in North Carolina 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 the North Carolina Community Colleges, 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 system for a copy of the main report.

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Emsi Burning Glass provides colleges and universities with labor market data that helps 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 to learn more or connect with us.