PITT Community College

Analysis of the Economic Impact and Return on Investment of Education

THE ECONOMIC VALUE OF PITT COMMUNITY COLLEGE

January 2018

EXECUTIVE SUMMARY

Emsi

Executive summary

Pitt Community College (PCC) 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 fulfilling and prosperous careers. Further, it supplies an environment for students to meet new people, increase their self-confidence, and promote their overall health and well-being.

The value of PCC influences both the lives of students and the regional economy. The college serves a range of industries in the PCC Service Area, supports local businesses, and benefits society as a whole in North Carolina from an expanded economy and improved quality of life. The benefits created by PCC even extend to the state and local government through increased tax revenues and public sector savings.

This study investigates the economic impacts created by PCC on the business community and the benefits that the college generates in return for the investments made by its key stakeholder groups—students, taxpayers, and society. The region the college serves is referred to as the PCC Service Area and it consists of Pitt County. The following two analyses are presented:

- **Economic impact analysis**
- **Investment analysis**

All results reflect student and financial data for fiscal year (FY) 2015-16. Impacts on the regional business community are reported under the economic impact analysis. Results are measured in terms of added income. The returns on investment to students, taxpayers, and society are reported under the investment analysis. Both analyses are described more fully in the following sections.

Economic impact analysis

PCC promotes economic growth in the PCC Service Area in a variety of ways. The college is an employer and buyer of goods and services, and the living expenses of students benefit local businesses. In addition, PCC is a primary source of education to the PCC Service Area residents and a supplier of trained workers to regional industries.

OPERATIONS SPENDING IMPACT

PCC is an important employer in the PCC Service Area. In FY 2015-16, the college employed 1,316 full-time and part-time faculty and staff. Of these, 81% lived in the PCC Service Area. Total payroll at PCC was $40 million, much of which was spent in the region for groceries, rent, dining out, clothing, and other household expenses.

PCC is itself a large-scale buyer of goods and services. In FY 2015-16, the college spent $33.8 million to cover its expenses for facilities, professional services, and supplies.

PCC added $56.2 million in income to the region during the analysis year as a result of its day-to-day operations. 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 state and local sources. The $56.2 million in added income is equivalent to supporting 1,606 jobs.

CONSTRUCTION SPENDING IMPACT

PCC commissioned contractors to build or renovate a number of facilities during the analysis year. The quick infusion of income and jobs that occurred in the regional economy as a result of this construction spending is only considered short-term due to the one-time nature of construction projects. Nonetheless, the construction spending had a substantial impact on the regional economy in FY 2015-16, equal to $1.3 million in added income for the PCC Service Area, which is equivalent to supporting 22 jobs.

STUDENT SPENDING IMPACT

Around 45% of students attending PCC originated from outside the region in FY 2015-16, and some of these students relocated to the PCC Service Area to attend PCC. These students would not have come to the region if the college did not exist. In addition, a number of in-region students would have left the area for other

TABLE 1: Impacts created by PCC in FY 2015-16

ADDED INCOME	JOBS
$56.2 million	**1,606**
Operations spending impact	
$1.3 million	**22**
Construction spending impact	
$18.9 million	**455**
Student spending impact	
$200.8 million	**2,635**
Alumni impact	
$277.2 million	**4,718**
Total impact	

educational opportunities if not for the existence of PCC. While attending the college, these relocated and retained students spent $30.8 million to purchase groceries, rent accommodation, pay for transportation, and so on. A significant portion of these expenditures occurred in the region, generating $18.9 million in added income in the regional economy during the analysis year, which is equivalent to supporting 455 jobs.

ALUMNI IMPACT

The education and training PCC provides for regional residents results in the greatest impact. Since the college was established, students have studied at PCC and entered the regional workforce with new skills. Today, thousands of former students are employed in the PCC Service Area.

During the analysis year, past and present students of PCC generated $200.8 million in added income for the region. This figure represents the higher earnings 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. This $200.8 million in added income is equivalent to supporting 2,635 jobs.

TOTAL IMPACT

The overall impact of PCC on the local business community during the analysis year amounted to $277.2 million in added income, equal to the sum of the operations spending impact, the construction spending impact, the student spending impact, and the alumni impact. The $277.2 million in added income was equal to approximately 3.6% of the GRP of the PCC Service Area. By comparison, this contribution that the college provides on its own is larger than the entire Real Estate & Rental & Leasing industry in the County.

The total impact is also expressed in terms of the jobs supported by the added income; they are calculated by jobs-to-sales ratios specific to each industry. Overall, the $277.2 million impact supports 4,718 jobs.

A portion of the total $277.2 million is broken out into an industry-by-industry impact ordered by added income. Table 2 outlines the top industries impacted by PCC. Because industries have different jobs-to-sales ratios, the associated jobs supported by PCC differ by impact. Nonetheless, these are impacts that would not have been generated without the college's presence.

TABLE 2: Top industries impacted by PCC

TOTAL INCOME (MILLIONS)	JOBS
$45.9	**240**
Manufacturing	
$32.2	**384**
Government, Non-Education	
$24.7	**571**
Health Care & Social Assistance	
$15.5	**400**
Accommodation & Food Services	
$9.6	**164**
Professional & Technical Services	
$149.2	**2,960**
All other industries	
$277.2	**4,718**
Total impact	

* Numbers may not sum due to rounding.

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 PCC as an investment from the perspectives of students, taxpayers, and society. The backdrop for the analysis is the entire North Carolina economy.

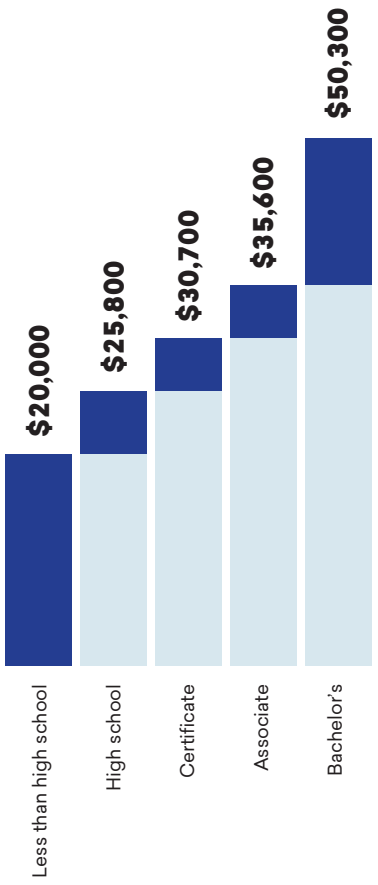
STUDENT PERSPECTIVE

In FY 2015-16, PCC served 11,197 credit students and 8,734 non-credit students. In order to attend college, 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 that they would have otherwise earned had they been working instead of attending college. The total investment made by PCC's students for FY 2015-16 amounted to a present value of $65.1 million, equal to $14.7 million in out-of-pocket expenses (including future principal and interest paid on student loans) plus $50.4 million in forgone time and money.

In return for their investment, PCC's students will receive a stream of higher future earnings that will continue to grow through their working lives. As shown in Figure 1, mean earnings levels at the midpoint of the average-aged worker's career increase as people achieve higher levels of education. For example, the average associate degree completer from PCC will see an increase in earnings of $9,800 each year compared to someone with a high school diploma or equivalent working in North Carolina. Over a working lifetime, this increase in earnings amounts to an undiscounted value of approximately $372,400 in higher earnings.

The present value of the higher future earnings that PCC's students will receive over their working careers is $288.5 million. Dividing this value by the $65.1 million in present value student costs yields a benefit-cost ratio of 4.4. In other words, for every $1 students invest in PCC in the form of out-of-pocket expenses and forgone time and money, they receive a cumulative of $4.40 in higher future earnings. The average annual rate of return for students is 20.1%. This is an impressive return, especially when compared to the 30-year average 10.1% return to the U.S. stock market (Figure 2).

FIGURE 1: Average earnings by education level at career midpoint in North Carolina



Source: Emsi complete employment data.

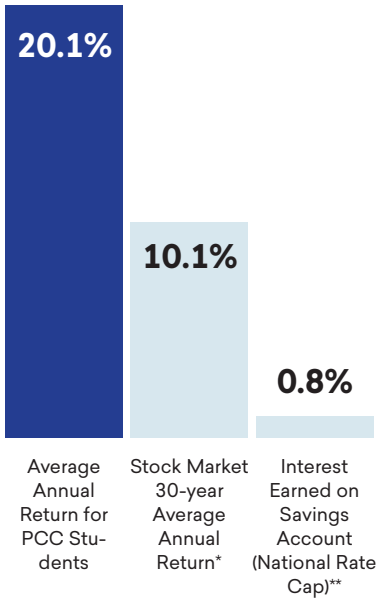
TAXPAYER PERSPECTIVE

PCC 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 PCC 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 FY 2015-16 students' working careers, the state and local government will have collected a present value of $147.3 million in added taxes.

Benefits to taxpayers consist of the savings generated by the improved lifestyles of students and the proportionally reduced government expenditures. Education is statistically correlated with a variety of lifestyle changes that generate taxpayer savings across three main categories: 1) health, 2) crime, and 3) unemployment. 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 and criminal justice services is reduced (study references are available in the main report). Students are also more employable, so the demand for welfare and unemployment benefits, such as earnings assistance and welfare benefits, is reduced. For a list of study references to these statistical benefits, please contact the college for a copy of the main report. All of these benefits will generate a present value of $8.6 million in savings to state and local taxpayers.

Total benefits to taxpayers equal $155.9 million, equal to the sum of the added taxes and public sector savings. Comparing this to the taxpayer costs of $41.5 million—equal to the funding that PCC received from the state and local government during the analysis year—yields a benefit-cost ratio of 3.8. This means that for every $1 of public money invested in PCC, taxpayers receive a cumulative value of $3.80 over the course of the students' working lives. The average annual rate of return is 11.9%, a solid investment that compares favorably with other long-term investments in both the private and public sectors.

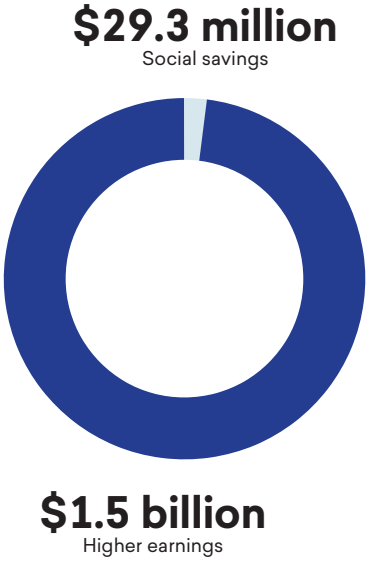
FIGURE 2: Student rate of return



* Forbes' S&P 500, 1987-2016.

** FDIC.gov, 7-2017.

FIGURE 3: Present value of higher earnings and social savings in North Carolina



SOCIAL PERSPECTIVE

Society as a whole within North Carolina benefits from the presence of PCC in two major ways. The first and largest benefit that society receives is an increased state economic base. As discussed in the previous section, the higher student earnings and increased business output occurs across the state. This raises prosperity in North Carolina and expands the economic base for society as a whole.

Benefits to society also consist of the savings generated by the improved lifestyles of students. Similar to the taxpayer section above, education is statistically correlated with a variety of lifestyle changes that generate social savings. Note that these costs are avoided by the consumers, and are distinct from the costs avoided by taxpayers outlined above. Health savings include avoided medical costs associated with smoking, alcoholism, obesity, drug abuse, and mental disorders. Crime savings include reduced security expenditures and insurance administration, lower victim

costs, and reduced criminal justice system expenditures. Unemployment savings include the reduced employer contributions towards unemployment claims. For a list of study references to these statistical benefits, please contact the college for a copy of the main report.

Figure 3 shows the present value of the higher earnings and social savings that will occur in North Carolina over the working lifetime of the FY 2015-16 student population at PCC. Higher earnings amount to a present value of $1.5 billion due to the increased lifetime earnings of students and associated increases in business output. Social savings amount to $29.3 million, the sum of health, crime, and unemployment savings in North Carolina. Altogether, total benefits to society equal $1.5 billion (in present value terms).

Society invested a present value of $138.8 million for FY 2015-16 PCC educations. This includes all expenditures by PCC, all student expenditures, and all student opportunity costs. For every dollar of this investment, society as a whole in North Carolina will receive a cumulative value of $10.90 in benefits, equal to the $1.5 billion in benefits divided by the $138.8 million in costs. These benefits will occur for as long as PCC's FY 2015-16 students remain employed in the state workforce.

SUMMARY OF INVESTMENT ANALYSIS RESULTS

Table 3 presents the results of the investment analysis for all three of PCC's major stakeholder groups—students, taxpayers, and society. As shown, students receive great value for their educational investment. At the same time, the investment made by state and local taxpayers to the college creates a wide range of benefits to society and returns more to government budgets than it costs.

TABLE 3: Summary of investment analysis results

	STUDENT PERSPECTIVE	TAXPAYER PERSPECTIVE	SOCIAL PERSPECTIVE
Present value benefits (thousands)	**$288,488**	**$155,911**	**$1,514,152**
Costs (thousands)	**$65,146**	**$41,485**	**$138,791**
Net present value (thousands)	**$223,342**	**$114,425**	**$1,375,361**
Benefit-cost ratio	**4.4**	**3.8**	**10.9**
Rate of return	**20.1%**	**11.9%**	**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 PCC 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 earnings and helping them achieve their individual potential. It benefits state and local taxpayers through increased tax receipts across the state and a reduced demand for government-supported social services. Finally, it benefits 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 2015-16 academic and financial reports from PCC, 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 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 main report.

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