

Economic Contribution of BC Colleges

*Analysis of Investment Effectiveness
and Economic Growth*

Executive Summary

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HIGHLIGHTS

- BC College students enjoy an attractive **14%** annual return on their investment of time and money.
- For every \$1 the students invest in BC Colleges, they receive a cumulative of **\$3.80** in higher future earnings over the course of their working careers (after discounting).
- Taxpayers see a real money return of **14%** on their annual investments in BC Colleges.
- The Province of British Columbia benefits from improved health and reduced welfare, unemployment, and crime, saving the public some **\$19.6 million** per year each year that students are in the workforce.
- The British Columbia economy receives roughly **\$7.7 billion** in income each year due to the annual activities of BC Colleges and the cumulative effects of their past students. This figure amounts to **4.3%** of total income in the provincial economy.

INTRODUCTION

How does the British Columbia economy benefit from the presence of BC Colleges?

An obvious question often asked, but rarely answered with more than anecdotes. In this study, CCbenefits applies a comprehensive economic model designed to quantify the economic benefits of community colleges and technical institutes and translate these into common sense benefit/cost and investment terms. The study tracks four types of benefits:

1. **Regional Economic Benefits** – Creation of provincial income;
2. **Student Perspective** – Higher earnings captured by students;

3. **Taxpayer Perspective** – Social benefits and avoided costs;
4. **Investment Analysis** – Return to taxpayers for their college support.

The economic impact model has been subjected to peer review and field-tested to generate more than 700 studies for community and technical colleges in the U.S. and Canada. Model results are based on solid economic theory, carefully drawn functional relationships, and a wealth of national and local education-related data.

RESULTS

For a more in-depth discussion of the results, the reader is encouraged to consult the Main Report, “Economic Contribution of BC Colleges,” containing detailed assumptions, context, and computation procedures.

➤ **Regional Economic Benefits**

BC Colleges affect the provincial economy in three ways: 1) through their local purchases, including wages paid to faculty and staff, 2) through the spending of students who come from outside the province, and 3) through a human capital effect stemming from an increase in the skill base of the provincial workforce. These effects break down as follows:

- *College Operations Spending*

BC Colleges create regional income through the earnings of faculty and staff, as well as through their own operating and capital expenditures. Adjusting for taxes and other monies withdrawn from the economy in support of BC Colleges, it is estimated that

the present-day British Columbia economy receives roughly \$288.6 million in labour and non-labour income each year due to the operations and capital spending of BC Colleges.

- *Student Spending Effect*

About 3% of BC College students come from outside the province (net of long distance students who are not physically present in the province while attending). While in the province, these students spend money to buy books and supplies, rent apartments, purchase food, pay for transportation, attend sports events, go to movies, and so on. These expenditures create revenues, jobs, and incomes for local businesses. It is estimated that the spending of BC Colleges' out-of-province students generates approximately \$23.9 million each year in income in the British Columbia economy.

- *Past Student Productivity*

Since their establishment BC Colleges have been providing students with the training they need to obtain highly-skilled, high-paying jobs in the province. Over time the skills of BC Colleges' past and present students have built up and accumulated in the workforce, translating into higher income for students and a more robust British Columbia economy overall. Based on current enrolment, turnover, and the growth of instruction over time, it is estimated that the provincial workforce embodies a cumulative of 41.2 million credit hour equivalents (CHEs) of BC College instruction. The accumulated contribution of college skills adds some \$7.4

billion in income to the current economy of British Columbia.

Summing the effect of college operations, student spending, and past student productivity together, the total impact of BC Colleges comes to \$7.7 billion in added income in the British Columbia economy.

➤ **Student Perspective**

Benefits of higher education are most obvious from the student perspective: learners sacrifice current earnings (as well as money to pay for tuition) in return for a lifetime of higher earnings. For every credit hour equivalent (CHE) completed, BC College students earn, on average, \$111 more per year each year they are in the workforce. Alternatively, for every full-time year they attend they earn an additional \$3,335 per year. Aggregate higher earnings for all exiting students amount to some \$219.3 million per year for each year they remain in the workforce.

From an investment standpoint, BC College students enjoy a 14% rate of return on their investments of time and money. This compares favorably with returns on other investments, e.g., long-term return on stocks and bonds. The corresponding benefit/cost ratio is 3.8, i.e., for every \$1 students invest in BC Colleges, they receive a cumulative of \$3.80 in higher future earnings over their working careers. This is a real return that accounts for any discounting that occurs during the entire time horizon. The payback period is 10 years.

➤ Taxpayer Perspective

Provincial and local government spent \$468.6 million in support of BC Colleges during the analysis year. Is this a good use of taxpayer money? Our analysis indicates that the answer is a resounding yes: Returns far outweigh costs, and the attractiveness of the taxpayer investment is even stronger when a collection of incidental social savings is included in the assessment.

For example, persons with higher education are less likely to smoke or abuse alcohol, draw social assistance or unemployment benefits, or commit crimes. This translates into associated dollar savings (avoided costs) amounting to some \$10 per credit hour equivalent per year, counted as an indirect benefit of BC College education.

When aggregated across all exiting students, the Province of British Columbia benefits from \$19.6 million worth of avoided costs per year, each year that students are in the workforce. Social savings, commonly known as externalities, break down as follows:

- *Improved Health*

Employers in the Province of British Columbia see health-related absenteeism decline by 40,900 days per year, with a corresponding annual dollar savings of approximately \$5.8 million. The province benefits from health-related savings of roughly 1,810 fewer smokers and 540 fewer alcohol abusers. Corresponding dollar savings are \$7.6 million and \$5.4 million per year, now and into the future (these savings include insurance premiums, co-payments

and deductibles, and withholding for health care).

- *Reduced Crime*

Crime rates drop with each year of higher education. In the Province of British Columbia, about 1,330 fewer criminal offences will be committed, resulting in annual savings of \$208,200 (combined savings from reduced arrest, prosecution, jail, and reform costs). Reductions in victim costs (e.g., property damage, legal expenses, lost workdays, etc.) result in savings of \$199,600 per year.

- *Reduced Welfare/Unemployment*

There will be around 670 fewer claims for social assistance, and 630 fewer drawing unemployment benefits, saving taxpayers some \$194,000 and \$176,800 per year, respectively.

➤ Investment Analysis

The return on a year's worth of provincial and local government investment in BC Colleges is obtained by projecting associated educational benefits into the future, discounting them back to the present, and weighing these against the \$468.6 million provincial and local taxpayers spent during the analysis year to support the colleges. The analysis is based on the portion of BC College operations that is wholly dependent on provincial and local government support. Two investment perspectives are possible, one broad and one narrow.

- *Broad Perspective*

Taxpayers expect their annual investment in BC Colleges to result in higher lifetime earnings for students and social savings from lifestyle changes (reduced crime, welfare and unemployment, and improvements in health). From a broad investment perspective, the value of all future income and associated social savings is compared to the year's worth of provincial and local taxpayer support that made the benefits possible. Following this procedure, it is estimated that BC Colleges provide a benefit/cost ratio of 19, i.e., every dollar of provincial and local tax money invested in BC Colleges today returns to the public at large a cumulative of \$19 over the course of the students' working career. As above, this is a real return, accounting for any discounting that may occur during the established time horizon. The nominal return would be significantly higher.

- *Narrow Perspective*

The narrow perspective limits the benefit stream to provincial and local government budgets, namely, increased revenue and reduced expenditures. For example, in place of total increased income, the narrow perspective includes only increased provincial and local government receipts from those higher incomes. Similarly, in place of overall crime, welfare, unemployment, and health savings, the narrow perspective includes only those portions that translate to actual reductions in provincial and local government expenditures.

Note here that it is normal for the government to undertake activities wanted by the public, but which are unprofitable in the marketplace. This means that positive economic returns are generally not expected from government investments. From the narrow taxpayer perspective, therefore, even a small positive return (a benefit/cost ratio equal to or just greater than 1, or a rate of return equal to or just greater than the 4% discount rate used in this analysis) would be a favorable outcome, certainly one that justifies continued taxpayer support of the colleges. For BC Colleges, narrow perspective results greatly exceed minimum expectations.

Results indicate strong and positive returns: a rate of return of 14%, and a benefit/cost ratio of 3.8 (every dollar of provincial and local tax money invested in BC Colleges today returns \$3.80 to the provincial and local government).

CONCLUSION

The results of this study demonstrate that BC Colleges are a sound investment from multiple perspectives. The colleges enrich the lives of students and increase their lifetime incomes. They benefit taxpayers by generating increased tax revenues from an

enlarged economy and reducing the demand for taxpayer-supported social services. Finally, they contribute to the vitality of both the local and provincial economies.

Benefits at a Glance

Economic Growth Analysis			
Added Provincial Income			
College operations effect			\$288,557,100
Student spending effect			\$23,915,300
Past student productivity effect			\$7,365,524,700
TOTAL INCOME			\$7,677,997,100
Annual Benefits			
<i>Higher earnings</i>			
Aggregate (all students)			\$219,283,400
Per credit hour equivalent (CHE)			\$111
Per full time equivalent (FTE)			\$3,335
<i>Social savings</i>			
Aggregate (all students)			\$19,589,800
Per credit hour equivalent (CHE)			\$10
Per full time equivalent (FTE)			\$292
Investment Analysis	Rate of Return	Benefit/Cost	Payback (Years)
Students	14.0%	3.8	10.0
Taxpayers: Broad Perspective	NA	19.1	NA
Taxpayers: Narrow Perspective	14.4%	3.8	9.6

Source: See Volume 1: Main Report and Volume 2: Detailed Results.

This short summary report is one of six products generated for the impact study. In addition, one long report intended for economists and college institutional researchers lays out detailed assumptions and analysis. Another report provides detailed tabular results by gender and entry level of education, and a fact sheet contains highlights of study results at a glance. The study also includes a write-up in layman's terms about differences between broad and narrow taxpayer perspectives. Lastly, a PowerPoint presentation shows main results for college presidents to adapt and use in speeches before provincial legislators and other education stakeholders.