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The Socioeconomic Benefits Generated by 24 Colleges of Applied Arts and Technology in Ontario

Executive Summary

English



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Province of Ontario

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Executive Summary

HIGHLIGHTS

- The 24 Colleges of Applied Arts and Technology in Ontario pay \$1.2 billion in direct faculty and staff wages, salaries, and benefits and explain an additional \$10.2 billion in earnings off campus.
- Taxpayers see a real money “book” return of 12.1% on their annual investments in the colleges and recover all investments in 10.7 years.
- Students enjoy an attractive 9% annual return on their investment of time and money – for every \$1 the student invests in a college education, he or she will receive a cumulative \$2.16 in higher discounted future earnings over the next 37 years.
- The Province of Ontario benefits from improved health and reduced welfare, unemployment, and crime, saving the public some \$159.6 million per year.

INTRODUCTION

How does the economy of Ontario benefit from the presence of the 24 Colleges of Applied Arts and Technology in the province? An obvious question often asked, but rarely answered with more than anecdotes. Ontario’s 24 colleges contracted with CCBenefits, Inc. to apply a comprehensive economic model they have developed to capture and quantify the economic and social benefits of colleges of applied arts and technology. The model, which took over a year to develop with funding from the Association for Community College Trustees (ACCT), relies on data collected from individual colleges, and translates

these into common sense benefit-cost and investment terms. It has been subjected to peer review, field tested on over 350 different colleges throughout the United States and Canada, and now applied to the colleges in Ontario. Model results are based on solid economic theory, carefully drawn functional relationships, and a wealth of national and local education-related data. The model provides an analytical alternative from the all-too-common “advocacy analyses” that inflate benefits, understate costs, and thus discredit the process of higher education impact assessment.

Four types of benefits are tracked: (1) regional economic benefits (contributions to local job and income formation); (2) higher earnings captured by exiting students; (3) a broad collection of social benefits (improved health, reduced crime, lower welfare, and unemployment); and (4) the return to taxpayers for their support of Ontario’s 24 colleges.

THE RESULTS

For a more in-depth exploration of the study, the reader is encouraged to consult the Main Report containing the detailed assumptions, their context, and the computation procedures.

➤ Province-wide Perspective

The 24 Colleges of Applied Arts and Technology in Ontario explain \$11.4 billion of all annual earnings in the provincial economy (see map). The earnings explained by the colleges are equal to that of roughly 281,600 jobs. The

earnings and job effects break down as follows:

- *Operations and Capital Spending*

Ontario's 24 colleges pay wages, salaries, and benefits (i.e., earnings), which generate additional incomes as they are spent. Likewise, the aggregate college operating and capital expenditures generate still further earnings.

Altogether, these earnings account for \$1.5 billion in the Ontario economy (equal to that of roughly 46,800 jobs).

- *Higher Earnings due to Past Instruction*

Each year students leave the 24 colleges and join or rejoin the local workforce. Their added skills translate to higher earnings and a more robust economy. Based on current enrollment, turnover, and the growth of instruction over time, the workforce embodies an estimated 234.5 million contact hours of past instruction (funded and unfunded). The accumulated contribution of past instruction adds some \$9.9 billion in annual earnings to the economy of the Province of Ontario (equal to that of about 234,800 jobs).

➤ **Student Perspective**

The student's perspective on the benefits of higher education is the most obvious: he or she pays tuition and foregoes current earnings for a lifetime of higher earnings. For every instructional contact hour completed, students will, on average, earn \$70 more per year each year they are in the workforce. Alternatively, for every full-time year they attend they will earn an additional \$2,169 per year. In the aggregate (all exiting students), the higher earnings

amount to some \$806.9 million per year for each year they remain in the workforce.

From an investment standpoint, the students will, on average, enjoy a 9% rate of return on their investments of time and money, which compares favorably with the returns on other investments of similar risk. The corresponding benefit/cost ratio (the sum of the discounted future benefits divided by the sum of the discounted costs) is 2.2, i.e., for every \$1 the student invests in college education, he or she will receive a cumulative of \$2.16 in discounted higher future earnings over the next 37 years. The payback period (the time needed to recover all costs) is 14.4 years.

➤ **Taxpayer Perspectives**

Provincial and local government spent \$979.7 million in support of the Ontario 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 the costs, particularly when a collection of social savings is included in the assessment. For example, persons with higher education are less likely to smoke or abuse alcohol, draw welfare or employment insurance benefits, or commit crimes. This translates into associated dollar savings (avoided costs) amounting to some \$14 per instructional contact hour per year, counted as an indirect benefit of college education. When aggregated across all exiting students, the Province of Ontario will benefit from \$159.6 million worth of avoided costs per year, broken down as follows:

- *Improved Health*

Area employers in the Province of Ontario see health-related absenteeism reduced by approximately 260,800 days per year, with a corresponding annual dollar savings of \$40.8 million. The province will benefit from the health-related savings of 10,000 fewer smokers and 2,600 fewer alcohol abusers. The corresponding dollar savings are \$25.6 million and \$33.8 million per year, now and into the future (these savings include application to Ontario health care).

- *Reduced Crime*

Studies show that incarceration drops with each year of higher education. In the Province of Ontario, about 60 fewer individuals will be incarcerated per year, resulting in annual savings of \$566,000 (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 \$677,600 per year. Finally, that people are employed rather than incarcerated adds \$375,000 of earnings per year to the economy.

- *Reduced Welfare/Unemployment*

There will be around 4,800 fewer people on welfare, and 5,500 fewer drawing employment insurance benefits per year, saving some \$18.9 million and \$38.8 million per year, respectively.

➤ **Taxpayer Return on Investment**

The return on a year's worth of provincial and local government investment in the Ontario's 24 colleges is obtained by projecting the associated educational benefits into the future, discounting them back to the present, and weighing these

against the \$979.7 million provincial and local taxpayers spent during the analysis year to support the 24 colleges in the system. The analysis is based on the portion of 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 the Ontario 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 earnings 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, the benefit/cost ratio generated for the whole system is 13.1, i.e., every dollar of provincial or local tax money invested in Ontario's colleges today returns a cumulative of \$13 over the next 37 years.

- *Narrow Perspective*

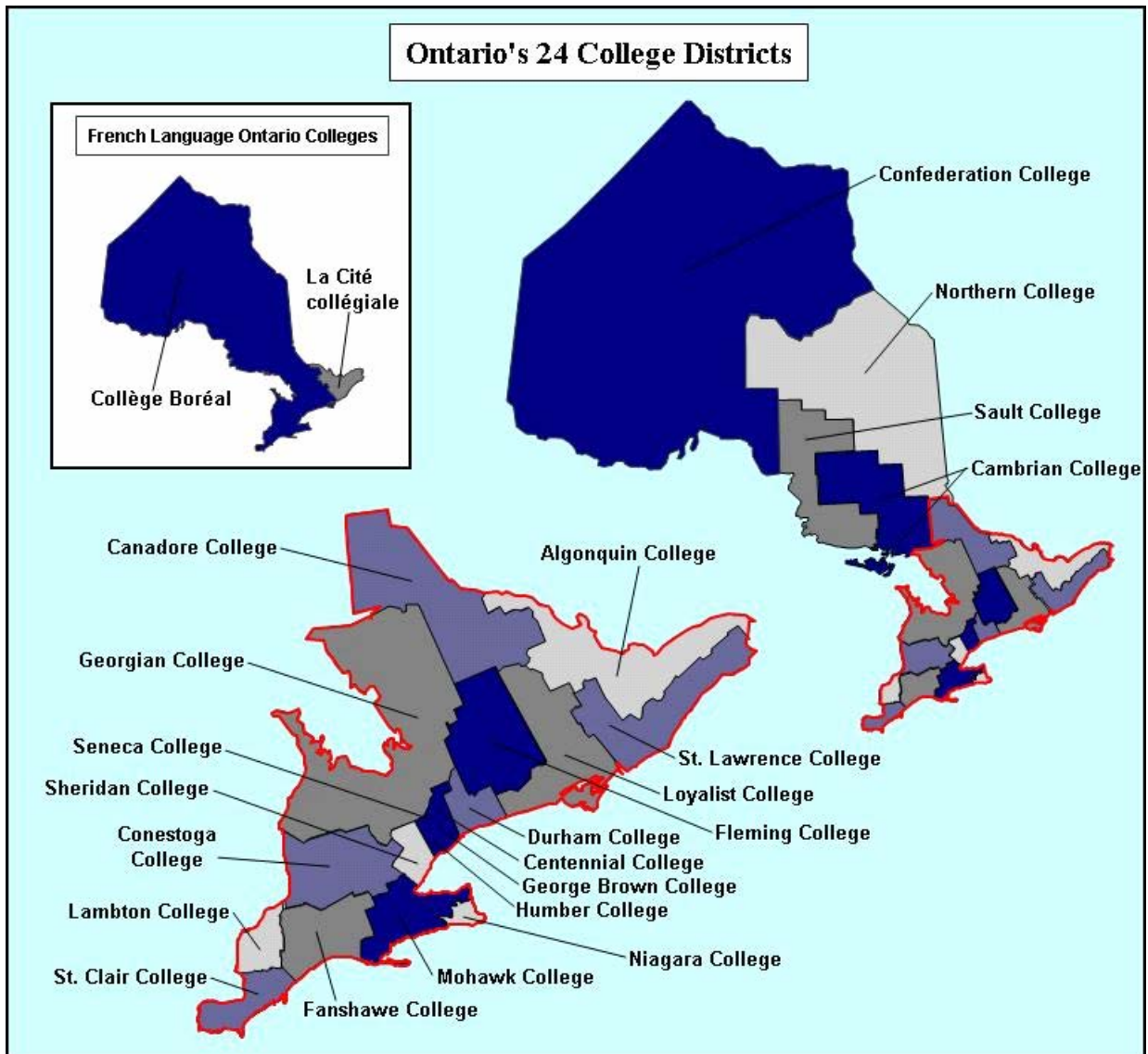
The narrow perspective limits the benefit stream to provincial and local government budgets, namely increased tax collections and expenditure savings. For example, in place of total increased student earnings, the narrow perspective includes only the increased provincial and local tax receipts from those higher earnings. 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 provincial 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, and/or a rate of return equal to or just greater than the 4.0% discount rate used in this analysis) would be a most favorable outcome, certainly one that justifies continued taxpayer support of the colleges. For Ontario, the narrow perspective results greatly exceed the minimum expectations. The results indicate strong and positive returns: a rate of return of 12.1%, a benefit/cost ratio of 2.3 (every dollar of provincial or local tax money

invested today returns a cumulative \$2.31 over the next 30 years), and a short payback period of only 10.7 years.

CONCLUSION

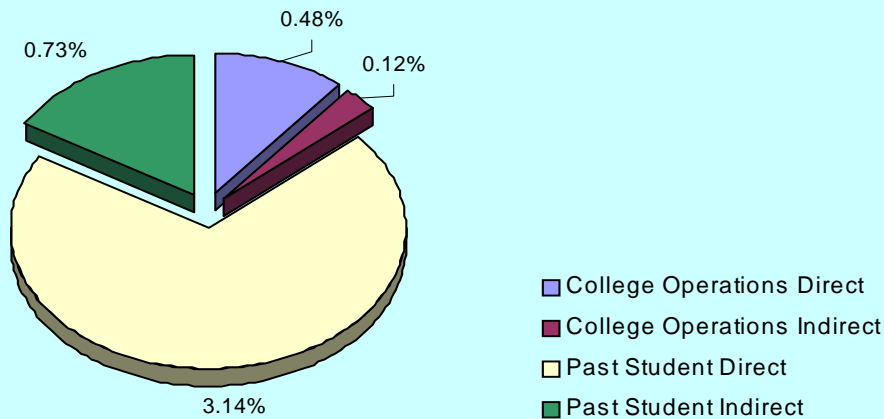
The results of this study demonstrate that the investment in Ontario's 24 Colleges of Applied Arts and Technology is sound from multiple perspectives. It increases the lifetime incomes of students and enriches their lives. It benefits taxpayers by generating increased tax revenues from an enlarged economy and reducing the demand for taxpayer-supported social services. Finally, it contributes to the vitality of both the local and provincial economies.



Benefits at a Glance

| Regional Analysis | | Regional Impact | |
|--|-------|-------------------------|-----------------|
| Regional Economic Development | | | |
| Increment from college operations | | \$1,543,059,000 | |
| Increment from past student productivity | | \$9,856,727,000 | |
| Total | | \$11,399,786,000 | |
| Job equivalent | | 281,629 | |
| Annual Benefits | | | |
| <i>Higher earnings</i> | | | |
| Aggregate (all student) | | \$806,912,739 | |
| Per Credit | | \$70 | |
| Per year full time equivalent student | | \$2,169 | |
| <i>Social savings</i> | | | |
| Aggregate (all students) | | \$159,603,143 | |
| Per Credit | | \$14 | |
| Per year full time equivalent student | | \$439 | |
| Investment Analysis | RR | B/C Ratio | Payback (Years) |
| Students | 9.0% | 2.2 | 14.4 |
| Taxpayers: Broad Perspective | NA | 13.1 | NA |
| Taxpayers: Narrow Perspective | 12.1% | 2.3 | 10.7 |

College Role in Provincial Economy, % of All Earnings Explained by College Operations



In sum, the graph shows that the colleges account for a total of 4.5% of all earnings (\$254.7 billion) generated from all sources in the economic region.

This short summary report is one of six products generated for this impact study. In addition, one long report intended for economists and college institutional researchers (92 pp) lays out the detailed assumptions and analysis. Another report (9 pp) provides detailed tabular results by gender and entry levels of education, and a one-page fact sheet contains highlights of the study results at a glance. The study also includes a one-page write-up in layman's terms about the differences between the broad and narrow taxpayer perspectives. Lastly, a PowerPoint presentation is developed showing the main results for college presidents to adapt and use in speeches before provincial legislators and other education stakeholders.