



University of Ontario
Institute of Technology
(UOIT)

**Economic Impact of UOIT on
Durham Region and
Northumberland County**

December 2015

FINAL REPORT

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Executive summary

Background and overview of UOIT

The University of Ontario Institute of Technology (UOIT) was founded in 2002 and is located in Oshawa, Ontario. UOIT is a public, career-focused university, which offers a range of undergraduate, graduate and post-graduate programs, as well as research opportunities. UOIT's short history has been marked by significant infrastructure growth, which is expected to continue over the next several years. Enrolment at UOIT is expected to double and the university, accordingly, is currently in the planning stages of developing two additional buildings. As UOIT expands, it will become an increasingly important economic driver for Ontario and specifically for Durham Region and Northumberland County.

Study objectives

Given the increasingly important role universities play in driving regional economic development and UOIT's planned infrastructure growth, UOIT engaged HDR Corporation (HDR) to assess and estimate the economic impact of its operations to Durham Region, Northumberland County and Ontario on an objective, transparent and credible basis over the five year period beginning in 2014-15 and ending in 2019-20.

Key findings

- UOIT has a significant economic impact across Ontario and especially in Durham Region and Northumberland County:
 - In 2014-15, spending undertaken by UOIT is estimated to contribute \$204.7 million to Ontario's economy in terms of GDP and generate and support 1,949 jobs across the province.
 - A high proportion of these jobs – nearly 1,335 – are expected to occur in Durham Region and Northumberland County.
- UOIT has grown tremendously since it was established and this growth is expected to continue over the next 5 years.
 - From 2014-15 to 2019-20, enrolment at UOIT is expected to grow by 12% to nearly 10,000 students (FTE).
 - In 2019-20, UOIT is projected to contribute \$247 million to Ontario's GDP, which is a 20% increase from 2014-15 levels, and generate and support nearly 2,300 jobs across the province.
 - Over the next 5 years, UOIT is expected to contribute \$1.2 billion to Ontario's GDP on a cumulative basis. Much of this economic activity occurs in Durham Region.
- The results indicate that UOIT is able to generate a significant return on investment for Ontario. Every dollar of base funding received by UOIT generates an additional \$2.60 dollars of spending across Ontario for a total leverage ratio of \$3.60 to one.
 - This is very much a conservative estimate since this study only focused on quantifying the economic impact of UOIT based on spending undertaken by UOIT and by its

students. UOIT’s impact on improving productivity in the region has not been quantified (i.e., innovation ecosystem impacts), which evidence suggests can be quite significant.

- Since it was founded, UOIT has helped diversify Durham Region’s economy and played an important role in helping address some of the declines in the manufacturing sector that have disproportionately impacted the region.
- UOIT has had and is projected to continue to have an economic impact that is widely distributed across the constituent municipalities and townships of Durham Region and Northumberland County.
- UOIT is an important economic driver for Durham Region and Northumberland County. In addition to its contribution to the regional economy from spending undertaken by the university, UOIT also plays an important role in increasing the competitiveness of Durham Region and Northumberland County by working with private and public sector to promote and enhance the region’s innovative capacity.
- UOIT has established formal partnership agreements with Ontario Power Generation, IBM, Hydro One and numerous other private and public sector organizations and many of these partnerships can also generate social impacts that are important to note.
 - For instance, UOIT is working with IBM and The Hospital for Sick Children in Toronto on technology that can reduce infant mortality in premature babies, which is being used in other parts of Canada, the US and China.
- UOIT works closely with Durham Region and Northumberland County to promote the region from an investment attractiveness perspective and, for example, as part of the region’s broader sports tourism strategy.

Recommendations

Recommendations, which may help enhance UOIT’s economic impact to the region and the province, are listed below.

- As noted above, economic impacts estimated as part of this study do not quantify the important role UOIT plays in enhancing productivity in the region – what we refer to as innovation ecosystem impacts. We encourage UOIT to better assess the size and scale of these impacts on a periodic basis to determine how UOIT is performing in this respect.
- We understand that UOIT is currently in the process of seeking funding for its expansion. UOIT’s ability to enhance its economic impact to the region partially depends on being able to grow and develop so it can house and educate an increasing number of students. According to the Campus Master Plan, UOIT enrolment is projected to be nearly 18,500 full-time equivalent students by 2030. This is roughly double existing levels. UOIT should continue working to address funding gaps, and we think this report can be used to facilitate discussions with key stakeholders.
- Universities that can attract a higher proportion of funding from the private sector or other government departments and ministries will generate higher leverage ratios. UOIT currently attracts a relatively small share of its funding outside core sources. Increasing funding from other governmental sources and from the private sector can help enhance UOIT’s leverage ratio and also further enhance linkage across the innovation ecosystem.

1. Introduction

Background and overview of UOIT

The University of Ontario Institute of Technology (UOIT) was founded in 2002 and is located in Oshawa, Ontario. UOIT is a public, career-focused university, which offers a range of undergraduate, graduate and post-graduate programs, as well as research opportunities. The university has expanded rapidly in recent years and currently has nearly 9,000 full-time equivalent (FTE) students. By providing practical experience through its experiential learning program and strong linkages to industry and the community, UOIT is structured to facilitate the transition of graduates into the labour market.

UOIT's short history has been marked by significant infrastructure growth, which is expected to continue over the next several years. Enrolment at UOIT is expected to double and the university, accordingly, is currently in the planning stages of developing two additional buildings. As UOIT expands, it will become an increasingly important economic driver for Ontario and specifically for Durham Region and Northumberland County.

Changing role of universities

The role of universities in many developed countries has changed. Governments – local/regional, provincial and federal – are calling on universities to play a more proactive role in providing opportunities for local businesses and sustaining and enhancing a region's ability to compete in the global marketplace through increased innovation and hence productivity. Regional and municipal governments need to work more closely with their local universities, colleges and other post-secondary institutions to drive regional economic growth. Accordingly, a university's performance with respect to generating tangible economic benefits should be tracked, measured and assessed to ensure that governments and the local community obtain an adequate Return on Investment (ROI). Economic impact assessments and specifically the methodology used in this study to characterize a university's economic impact is one approach that can be used. We strongly believe that all universities, colleges and other post-secondary institutions should assess and compare their economic impact on a periodic basis to determine whether reforms and other changes can be made to improve the university's ability to generate positive economic benefits for their local communities. The following section lays out the specific objectives of this study.

Governments are calling on universities to play a more proactive role in providing opportunities for local businesses and sustaining and enhancing a region's ability to compete in the global marketplace through increased innovation and hence productivity.

Study objectives

Given the increasingly important role universities play in driving regional economic development and UOIT's planned infrastructure growth, UOIT engaged HDR Corporation (HDR) to assess and estimate the

economic impact of its operations to Durham Region, Northumberland County and Ontario on an objective, transparent and credible basis. More specifically, objectives for this study are the following:

- Assess direct, indirect and induced economic impacts on a provincial, regional and municipal basis using standard measures of economic activity (e.g., gross output, GDP, jobs, wages and salaries and government revenues) for 2014-15 to 2019-20.
- Assess the importance of UOIT to the labour market in the local community and region.
- Estimate the overall ROI for the City of Oshawa, Durham Region and the Province of investing in UOIT.
- Compare economic impact and ROI of investing in UOIT to other similar-sized universities/regions.
- Develop high level recommendations based on comparisons to other universities.

Approach

This section of the report provides a detailed description of the approach employed to complete the study. The table below outlines the steps we took as part of the study.

Table 1 – Overview of the study approach

Phase	Description
Project Initiation	<ul style="list-style-type: none"> • Develop the project plan and agree on a reporting framework for the final report. • Outline and list data requirements for economic impact assessment.
Data Collection	<ul style="list-style-type: none"> • Obtain UOIT operating and capital expenditure, funding, student spending and student counts and other relevant operational data. • Collect local and regional employment and business counts data from Statistics Canada. • Work with UOIT to develop assumptions regarding future growth and capital expenditures over the next five years to enable estimation of future economic impacts.
Economic Impact Modelling	<ul style="list-style-type: none"> • Develop an economic impact model using the expenditure profile of future students and the Statistics Canada Input-Output Tables. • Assess economic impacts for specific types of spending and categories of funding and validate estimates based on our understanding of Durham Region’s and Northumberland County’s economies. • Assess the overall ROI of investing in UOIT based on the aggregate economic impact of UOIT and funding sources. • Determine the importance of UOIT to the local community and Durham Region including its constituent parts and Northumberland County.

Phase	Description
	<ul style="list-style-type: none"> Compare findings to other similar studies and develop a high level list of recommendations that can help UOIT maximize its impact to the local community/region.
Reporting	<ul style="list-style-type: none"> We consolidated key findings into a draft final report that was reviewed with UOIT. This report was finalized based on comments received from UOIT.

Data

We worked closely with the university to obtain the best available data to enable estimation of economic impacts on a credible and defensible basis. The following data was provided by UOIT:

- Current UOIT operating and capital expenditures by category (as of March 31, 2015) – this information was originally obtained by HDR from the Council of Ontario Universities (COU) and UOIT validated this information to ensure it was correct;
- Forecasted growth rates of UOIT operating and capital expenditures by expenditure category from 2015-2016 to 2019-2020 (as of March 31, 2015);
- Current number of UOIT employees by employee type (as of October 2014) on a full-time equivalent (FTE) basis;
- Forecasted number of UOIT employees by employee type from 2015-16 to 2019-20 (as of March 2015) on a FTE basis;
- Employees' and students' first three digits of postal codes of where they reside (as of October 2014 and November 2014 respectively);
- Current student FTE by level of study (as of February 2015);
- Projected student enrolment by level of study (as of March 2015);
- Current share of expenditures by expenditure type that occur at the downtown Oshawa campus location (as of March 31, 2015);
- Forecasted share of expenditures by expenditure type that occur at the downtown Oshawa campus location (as of March 31, 2015);
- Information about experiential learning programs (as of October 2014);
- Information about UOIT programs of study and industry- and government-academic partnerships (as of April 2015);
- Information about municipal and regional economic development programs and/or strategies that include UOIT (as of April 30, 2015); and
- Other related data and information obtained from UOIT's website and various materials provided to us by UOIT.

In addition to the data provided by UOIT, we also collected data from Statistics Canada including the 2001, 2006 and 2011 Census and National Household Survey and the Input-Output Tables. This information was used to estimate UOIT's economic impact and also to provide a high-level socio-economic profile of Durham Region and Northumberland County. Lastly, the methodology used for this study borrows heavily from a recent economic impact study completed by the University of Waterloo (see <https://uwaterloo.ca/about/what-we-do/university-waterloo-economic-impact-study-2013> for more information).

Limitations

HDR relied upon the completeness, accuracy and fair presentation of all the information, data and representations obtained from various sources which were not audited or otherwise verified. These sources (collectively, the Information), include:

- University of Ontario Institute of Technology (UOIT);
- Statistics Canada;
- Council of Ontario Universities (COU); and
- Other relevant studies obtained from desk-based research.

The findings in this report are conditional upon such completeness, accuracy and fair presentation of the Information, which has not been verified independently by HDR.

HDR reserves the right at its discretion to withdraw or make revisions to this report should we be made aware of facts existing at the date of the report that were not known to us when we prepared this report. The findings are as of the date hereof and HDR is under no obligation to advise any person of any change or matter brought to its attention after such date, which would affect the findings and HDR reserves the right to change or withdraw this report.

This information has been prepared solely for the use and benefit of, and pursuant to a client relationship exclusively with UOIT. HDR disclaims any contractual or other responsibility to others based on its use and, accordingly, this information may not be relied upon by anyone other than UOIT.

Any use that a third party makes of this report or reliance thereon, or any decision made based on it, is the responsibility of such third party. HDR accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken, based on this report.

Report structure

This report is structured as follows:

- **Section 2** provides a high-level socio-economic profile of Durham Region and Northumberland County and discusses the overall importance of UOIT to the region.
- **Section 3** shows the economic impact results and includes a discussion regarding terminology and how to interpret the results. It also outlines a high-level description of the methodology employed to estimate UOIT's economic impact.
- Recommendations and next steps for UOIT to consider based on this study are listed in **Section 4**.

- **Appendix A** provides detailed results of UOIT’s economic impact for constituent municipalities of Durham Region.
- **Appendix B** shows economic impact results for 2015-16 to 2018-19. The main body of the report shows economic impact results for 2014-15 and for the last year of the analysis period, 2019-20.

Note to the reader

This report has been prepared by HDR based on data and information provided by UOIT and from other sources. Our assessment of UOIT’s economic impact is based on our own view of the information we obtained. In preparing this report, we have strived to be as transparent as possible in terms of the methodology employed, data sources used and any assumptions made. UOIT provided comments on the final report, but the decision on what content to include was HDR’s. Lastly, please note that when we refer to the “region” in what follows we are referencing Durham Region and Northumberland County collectively. Tables that show economic impact results in the main body of the report and the Appendix may not add due to rounding.

2. Profile of Durham Region, Northumberland County and UOIT

Introduction

Durham Region and Northumberland County have undergone significant changes over the past several years. Population, employment and household incomes have all increased. However, the industrial structure of the region has changed. The relative share of employment in the manufacturing industries, which tend to pay above average wages, has decreased and these trends are expected to continue given the April 30, 2015 announcement that General Motors will cut 1,000 jobs at its Oshawa plant and some workers fear that more layoffs could lead to plant closure.¹ In addition, the Pickering Nuclear Generating Station (PNGS), which employs approximately 3,500 individuals, is in the process of being decommissioned. Some of these jobs will move to Darlington Nuclear Generating Station (DNGS), which is still within Durham Region, but others will move outside of the region or be eliminated altogether. Going forward, Durham Region and Northumberland County will not be able to rely on the traditional industries that have fuelled its economic growth over the last several years.

This section of the report provides a high level and brief demographic and economic overview of Durham Region and Northumberland County focusing on trends over the past several years. Regional data for 2001 and 2006 was obtained from the Census and for 2011 regional data was obtained from the National Household Survey.² Lastly, we discuss the importance of UOIT based on high level demographic and economic trends.

Figure 1 – Map of Durham Region

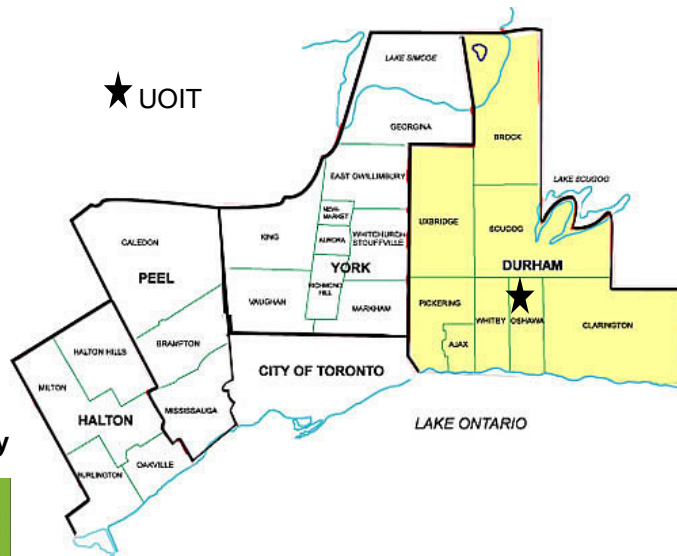


Figure 2 – Map of Northumberland County



¹ GM Oshawa workers worry more layoffs could lead to plant closure (May 2, 2015). CBC News. Retrieved from <http://www.cbc.ca/news/business/gm-oshawa-workers-worry-more-layoffs-could-lead-to-plant-closure-1.3057698>.

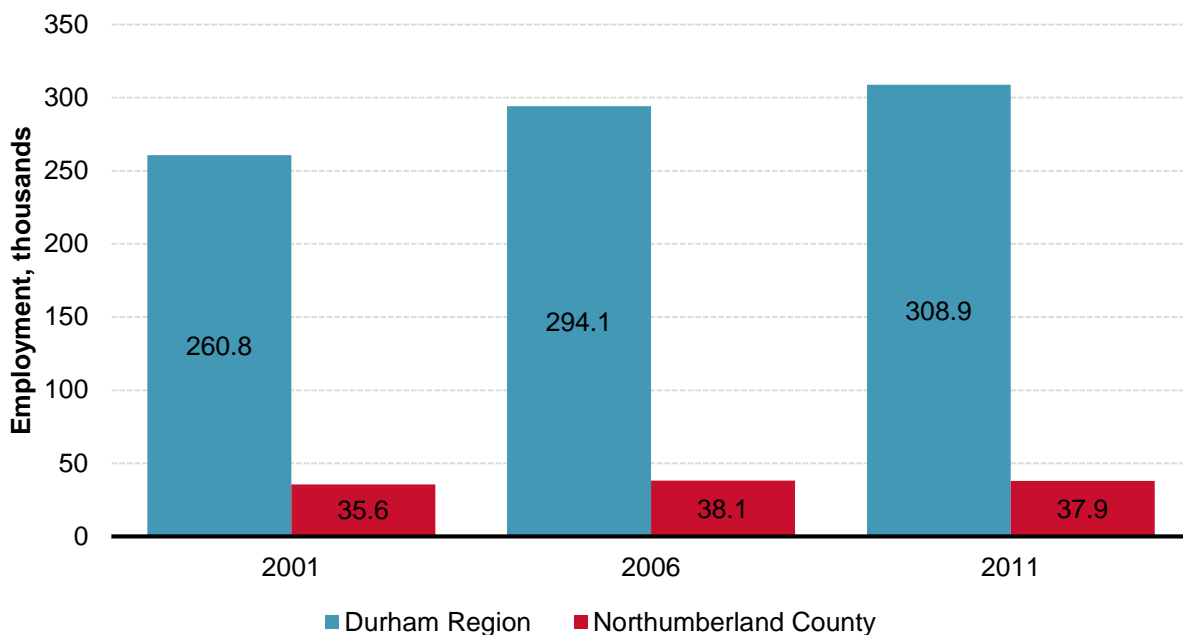
² Please note that 2011 is the last year of available data and information.

Durham Region and Northumberland County socio-economic profile

Durham Region is a Regional Municipality located in Southern Ontario that was established in 1974, encompassing areas that had been part of Ontario County and the United Counties of Northumberland and Durham.

Durham Region comprises eight municipalities: City of Pickering, Town of Ajax, Town of Whitby, City of Oshawa, Municipality of Clarington, Township of Uxbridge, Township of Scugog and Township of Brock. Northumberland County lies immediately to the east of Durham Region. Northumberland consists of seven municipalities: Municipality of Brighton, Town of Cobourg, Municipality of Port Hope, Municipality of Trent Hills, Township of Alnwick/Haldimand, Township of Cramahe and Township of Hamilton. Durham Region has undergone rapid growth in recent years: its population grew at a compounded annual growth rate (CAGR) of 2% from 2001 to 2011, which is nearly two-times the provincial average. This growth is projected to continue; a population target of 810,000 has been estimated by 2021.³ Figure 3 shows the trend in employment in Durham Region and Northumberland County.

Figure 3 – Durham Region and Northumberland County employment, 2001 to 2011

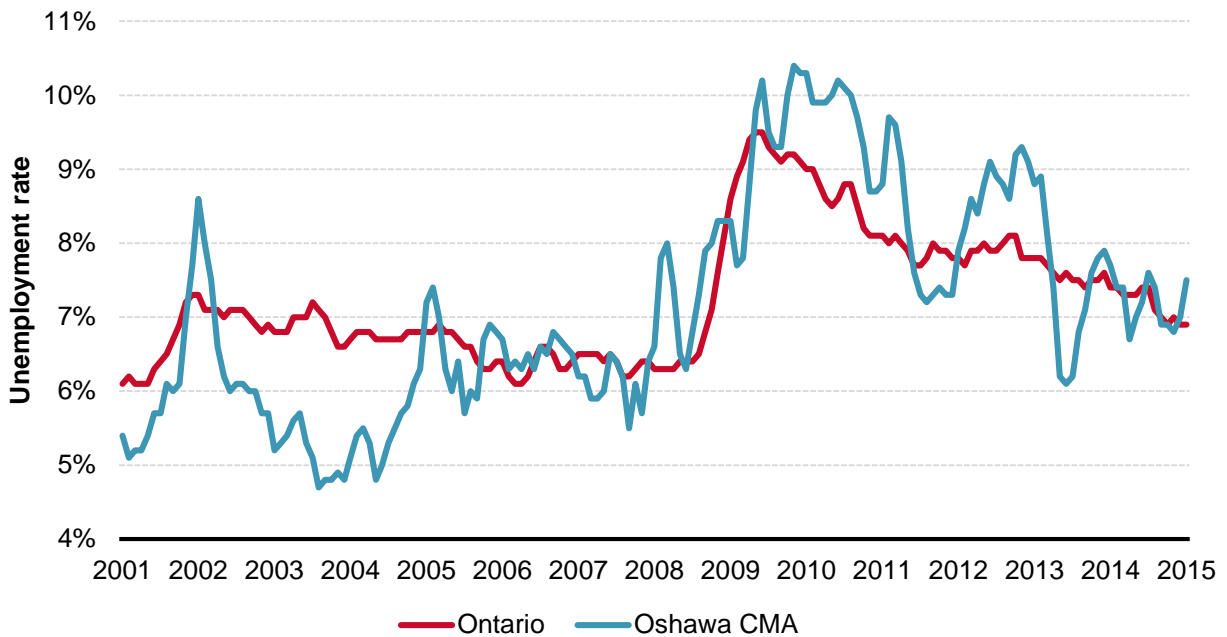


³ Overview of Durham Region
<http://www.durham.ca/default.asp?nr=/corpoverview/overview.htm&setFooter=/includes/corpFooter.inc>

Durham Region added approximately 33,000 jobs from 2001 to 2006 – employment created directly and indirectly by UOIT, which commenced operations during this period, was likely an important contributor to this growth.

From 2001 to 2011, employment in Durham Region increased from 261,000 to approximately 309,000, which represents a CAGR of 1.7%. Growth in employment in Durham Region has been robust particularly from 2001 to 2006. Durham Region added approximately 33,000 jobs from 2001 to 2006 – employment created directly and indirectly by UOIT, which commenced operations during this period, was an important contributor to this growth. Employment in Northumberland County increased from 2001 to 2011, but at a slower rate than Durham Region. From 2006 to 2011, employment in Northumberland County grew by approximately 1.0% CAGR, lower than the rest of Ontario. During this period, the unemployment rate in the Oshawa Census Metropolitan Area (CMA), which includes the City of Oshawa, the Town of Whitby and the Municipality of Clarington, increased significantly. The diagram below shows the unemployment rate in Oshawa CMA from 2001 to 2015 (based on the unemployment rate in March of each year).⁴

Figure 4 – Oshawa CMA and Ontario unemployment rate, March 2001 to March 2015



⁴ More recent data was not readily available on other parts of Durham Region or Northumberland County.

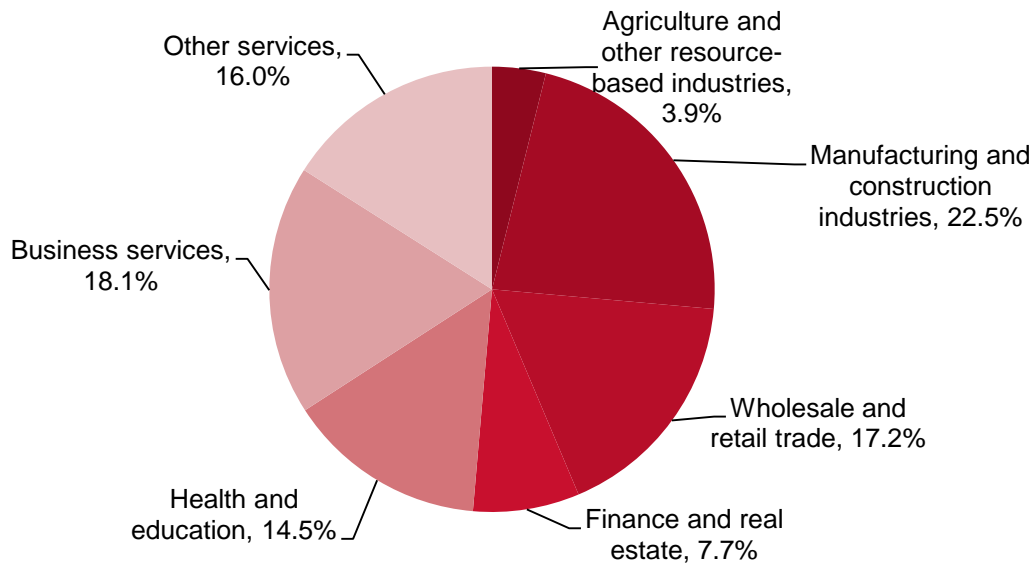
The unemployment rate in Oshawa CMA from 2006 to 2011 increased significantly reaching a high 10.3% in 2010. Since then, the unemployment rate decreased but is still above the average unemployment rate across Ontario. In March of 2015, the unemployment rate in Oshawa CMA was 7.5% versus 6.9% across all of Ontario. During this same period, UOIT grew significantly. For example, the

The outlook for the labour market in Durham Region has worsened given the recent announcement that General Motors is expected to cut about 1,000 jobs at their Oshawa assembly plant, which follows broader trends in the decline in traditional manufacturing industries across Ontario.

number of students grew from 4320 students to 8347 students and the number of instructional faculty and employment at UOIT grew at similar rates. Employment generated by UOIT during this period likely played a role in offsetting job losses in Oshawa CMA. Indeed, the unemployment rate in Oshawa CMA may have reached an even higher rate were it not for UOIT's growth during this period.

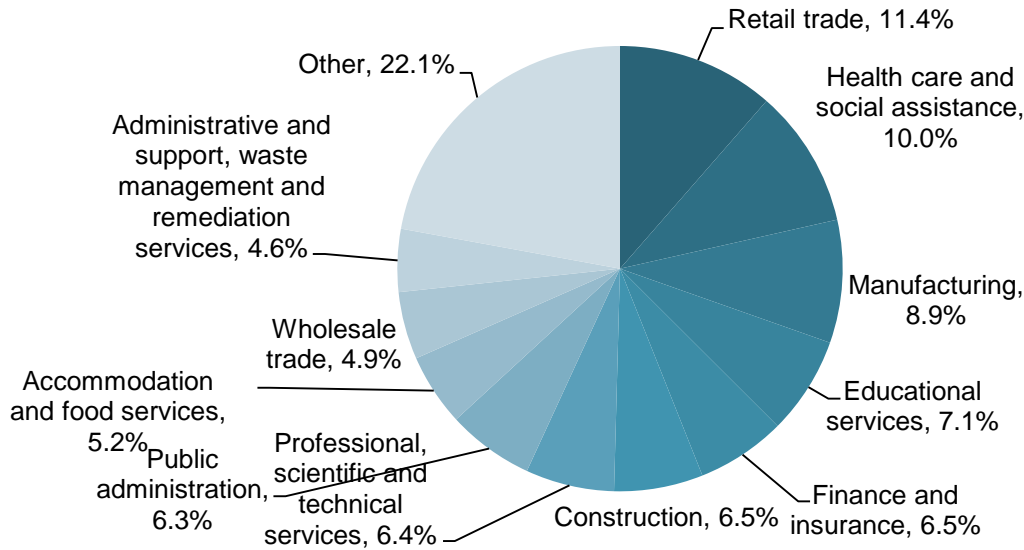
The outlook for the labour market in Durham Region has worsened given the recent announcement that General Motors is expected to cut about 1,000 jobs at their Oshawa assembly plant, which follows broader trends in the decline in traditional manufacturing industries across Ontario. Indeed, the relative importance of Durham Region's manufacturing has declined since 2001, which is consistent with broader trends in Ontario. The following two diagrams show relative percentage of employment in Durham Region by industry using the North American Industrial Classification System (NAICS) in 2001 and 2011.⁵

Figure 5 – Durham Region employment by industry (NAICS), 2001



⁵ Please note that in 2011 the National Household Survey provided a more detailed breakdown of employment by industry than was available in the 2001 Census.

Figure 6 – Durham Region employment by industry (NAICS), 2011



In 2001, two years before UOIT welcomed its first students, the manufacturing and construction industries represented 22.5% of total employment in Durham Region. In 2011, the manufacturing industries and the construction industry represented 8.9% and 6.5% of Durham Region’s total employment respectively. Collectively these industries comprised 15.4% of total employment in Durham Region – a significant decline of 7.1 percentage points relative to 2001.

During the same period, the share of employment in the manufacturing and construction industries across Ontario decreased from 22.0% to 16.7% (a 5.3 percentage point decrease). The relative decline in the manufacturing and construction industries was more pronounced in Durham Region relative to Ontario as a whole. Recently announced job cuts at the GM plant and Ontario’s inability to secure major investments from automobile producers may intensify these trends.

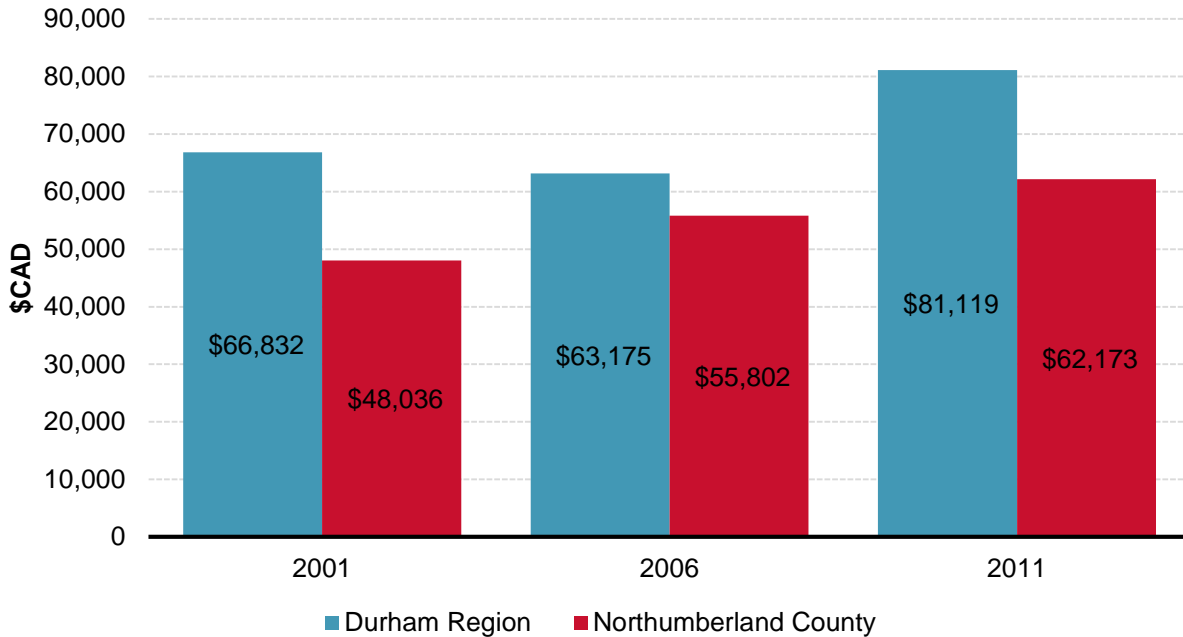
Employment in educational services, of which UOIT is a part, made up for some of the declines in the manufacturing and construction industries.

In 2001, health and education industries represented 14.5% of total employment in Durham Region. In 2011, these industries comprised 17.1% of total employment in Durham Region; educational services comprised 7.1%. Gains in these industries have not totally offset losses in the manufacturing and construction industries, but have certainly played a role in doing so. The evidence suggests that since it was established, UOIT has already had a noticeable economic impact to Durham Region and played an important role in helping the region diversify its employment base and deal with declines in the manufacturing industries.

The evidence suggests that since it was established UOIT has already had a noticeable economic impact to Durham Region and played an important role in helping the region diversify its employment base and deal with declines in the manufacturing industries.

Household income is another important economic indicator to characterize the socio-economic profile of a region and in many respects it is one of the more important metrics. Figure 7 shows the trend in median household incomes in Durham Region and Northumberland County for 2001, 2006 and 2011.

Figure 7 – Durham Region and Northumberland County household median total income, 2001 to 2011



From 2001 to 2011, median household incomes in Durham Region and Northumberland County grew by 2.0% and 2.6% CAGR respectively. In comparison, median household incomes across Ontario grew by 2.2% CAGR. In Durham Region, median household incomes decreased slightly between 2001 and 2006, during which period UOIT commenced operations. From 2006 to 2011, when UOIT experienced a significant increase in enrolment and employment, household incomes grew tremendously from \$63,175 to \$81,119, which represents an annual growth rate of 5.1% (CAGR). This is more than double the rate of growth in median household incomes across Ontario. The growth in relatively high paying jobs at UOIT from 2006 to 2011 may have played a role in the significant growth in median household incomes witnessed in Durham Region. Given declines in traditional manufacturing industries, which have been a source of high paying jobs, UOIT will likely become an increasingly important economic component of Durham Region.

Given declines in the manufacturing industries, which traditionally have been a source of high paying jobs, UOIT will likely become an increasingly important part of Durham Region.

Importance of UOIT to Durham Region and Northumberland County

From 2001 to 2011, Durham Region and Northumberland County experienced significant population and economic growth. Employment and median household incomes grew significantly during this period and in many cases faster than the rest of Ontario. The growth of UOIT in terms of student enrolment and employment was likely an important contributor to Durham Region's and Northumberland County's overall economic success. The data and some recent news also show that the region is facing some challenges. Job cuts in the automotive manufacturing industry and at Pickering Nuclear Generating Station (PNGS) will negatively impact the region. UOIT has played an important role in diversifying the region's labour market and economy and in offsetting some of the declines in the manufacturing industries. UOIT can continue to play an important role in Durham Region and Northumberland County by generating employment and high paying jobs and by increasing innovation and hence productivity growth in the region. The following section of the report will more specifically address this latter point and estimate the economic impact of UOIT over the next five years.

UOIT can continue to play an important role in Durham Region and Northumberland County by generating employment and high paying jobs and by increasing innovation and hence productivity growth in the region.

3. Economic impact of UOIT

Introduction

This section of the report shows our projected results of the economic impact of UOIT on Ontario, Durham Region and Northumberland County for the analysis period 2014-15 to 2019-20. UOIT's fiscal year runs from April 1 to March 31. Thus, 2014-15 within the text refers to April 1, 2014 to March 31, 2015.⁶

We start with a primer on economic impact analysis, which discusses the overall concept behind economic impact analysis and defines key terms. We then describe how universities generate economic impacts. The methodology employed in this study focuses on translating expenditures into a set of economic impacts. As a result, we also lay out UOIT's forecasted expenditures, employment and student enrolment over the analysis period. The planned expenditures provided assume that UOIT will develop up to two new buildings over the analysis period. We understand, however, that UOIT is still seeking funding to enable this development. Accordingly, economic impact results presented below are subject to this assumption. The economic impact of UOIT over the analysis period is then shown for Ontario and Durham Region and Northumberland County collectively. Appendix A provides detailed economic impact results for constituent municipalities/cities/towns/townships of Durham Region. We then calculate the overall ROI or leverage ratio⁷ of investing in UOIT based on the economic impact results and with respect to UOIT's funding. Lastly, we introduce the concept of an innovation ecosystem and describe how UOIT generates linkages across the innovation ecosystem through industry- and government-academic partnerships.

Primer on economic impact analysis

The basic premise behind economic impact analysis is that spending in one industry generates additional spending (i.e. multiplier effects) in other industries and potentially even in the same industry. For example, the purchase of laboratory equipment generates spending in supplying industries: manufacturing, transportation, professional services; which, in turn source this supply from other industries such as steel mining, steel and glass production and several other industries. Statistics Canada produces the Input-Output Tables that quantify the inter- and intra-dependencies of industries that comprise the Canadian economy. The Input-Output Tables enable us to quantify how spending in one industry tracks through the Canadian economy and, thus, how this spending impacts the Canadian economy. Economic impacts are generally estimated for the following standard measures of economic activity:

- **Gross output** – the gross value of all business revenue. This is the broadest measure of economic activity and indicates the total sales and transaction triggered by operations.
- **Value-added or Gross Domestic Product (GDP)** – the value added to the economy or the unduplicated total value of goods and services. GDP includes only final goods to avoid double counting of products sold during an accounting period. So, for instance, if a producer of a widget sells each widget for \$100 and purchased \$40 of goods from suppliers to produce the widget then the value-added or GDP impact would be \$60 for each widget sold. Accordingly, GDP is a narrower, more focused and more accurate measure of economic activity since it avoids double counting.

⁶ Please note that the reporting year for student related data follows the MTCU reporting year – May to April.

⁷ This study uses the term leverage ratio and ROI interchangeably.

- **Labour income** – the total value of wages and salaries associated with employment impacts. Labour income is an even narrower measure of economic activity and comprises an important part of GDP.
- **Employment** – the number of jobs created or supported. It is expressed as the number of equivalent full-time jobs indicated in person-years.
- **Government tax revenues** – the amount of tax revenues generated. In this study, total taxes are calculated leveraging relationships between GDP and tax revenues.

Economic impacts are typically estimated at the direct, indirect and induced levels:

- **Direct impacts** are changes that occur in “front-end” businesses that initially receive expenditures and operating revenue as a direct consequence of operations and activities conducted.
- **Indirect impacts** arise from changes in activity for suppliers of the front-end business. For example, the purchase of rebar from a steel product manufacturer requires that the steel product manufacturer purchase refined steel from a steelmaker.
- **Induced impacts** occur when employees, from businesses stimulated by direct and indirect expenditures, spend their income on consumer goods and services.
- The **total economic impact** equals the sum of the direct, indirect and induced economic impacts.

The methodology used in this study estimates UOIT’s economic impact at the provincial level and then additional economic modelling to distribute economic impacts on a regional basis, which relies on additional data from UOIT in terms of where their employees and students live and where expenditures are made and other economic data from Statistics Canada.

In subsequent sections of this report we do not specify where data was obtained from. A detailed listing of the data used in this study can be found in Section 1 of this report.

How universities generate economic impacts

In recent years, universities around the world have established their roles beyond the traditional teaching and research to drive regional economic development through collaboration with industry and a better integration into the supply chain. Universities provide resources and talent necessary to promote innovation, which is essential to economic growth. Moreover, universities have grown to play a more proactive role in promoting industry-linkages to enhance the regional innovation ecosystem. In this respect, universities are viewed as critical to regional economic development. But not only has the role of universities changed – the scope of their economic impacts has become wider too. Beyond benefiting just the surrounding communities, the potential impact has spread to regional and provincial economies.⁸ Specifically, universities contribute to the regional and provincial economy along the following dimensions:

- **Through its operating activities.** Universities have substantial purchasing power. By purchasing products and services in other industries, the university creates jobs and increases income that ripples through the economy. In the case of UOIT, roughly half of the operating budget is spent

⁸ Porter, M. (2007) Colleges and Universities and Regional Economic Development: A Strategic Perspective, Harvard Business School Press, Prepared for the Forum for the Future of Higher Education. <http://net.educause.edu/ir/library/pdf/ff0710s.pdf>

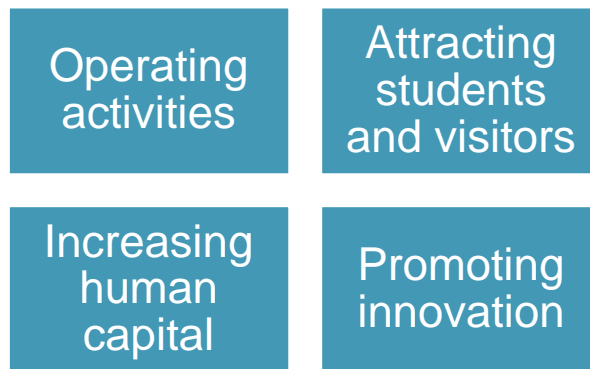
on procurement of goods and services. UOIT also provides jobs to 848 FTE employees, with average wages of \$90,000. In addition to this, universities' spending tends to be decentralized and, therefore, the economic impact they generate is not limited to the surrounding community.⁹ Universities can also generate significant economic impacts at a regional level from construction and development activities.

- **Attracting students and visitors.** Universities attract students to a region and many of these students reside at or near the university during the school year and can spend considerably in the local community. Universities can also attract other visitors to the region for conferences and seminars and to attend sporting and other types of events. Since a large proportion of its students commute to UOIT, these economic impacts are likely smaller at UOIT than in other universities where a higher proportion of students live near the university.
- **Through increases in human capital.** By educating and training people, universities develop tomorrow's skilled workforce, thereby increasing productivity. UOIT, for example, enhances local job growth and economic development by providing career-focused education and through experiential learning.

- **By promoting a culture of knowledge and innovation.** Rapid technological innovation and its commercial use are distinctive features of modern economic competitiveness and growth.¹⁰ Though technology transfer, "a process of transferring scientific findings from one organization to another for the purpose of further development and commercialization"¹¹, universities generate new

inventions and discoveries. While once comprised mainly of patenting, technology transfer now includes licensing, research consortia, industrial extension programs, industrial-liaison or affiliate programs, spin-off enterprises, research parks, start-up firm incubators, consultant services, and venture-capital funds.¹² In the case of UOIT, ACE, the Energy Systems and Nuclear Science Research Centre, the Educational Informatics Lab, the Digital Media Lab, Health Informatics, Gaming and Virtual Reality Lab and the Clean Energy Research Laboratory are examples of facilities that stimulate innovative research and knowledge growth. Governments around the world are calling on universities to play a more proactive role in this respect.

How universities generate economic impacts?



The methodology used in this study quantifies economic impacts generated from a university's operating activities and from attracting students and visitors to the region. We more qualitatively and at a higher level assess economic impacts generated from deepening of human capital and from promoting

⁹ Ibid.

¹⁰ Ibid.

¹¹ Association of University Technology Managers website, Accessed April 23, 2015. http://www.autm.net/Tech_Transfer.htm

¹² Paytas, J., R. Gradeck and L. Andrews (2004). Carnegie Mellon University, Centre for Economic Development. Universities and the Development of Industry Clusters. Prepared for Economic Development Administration U.S. Department of Commerce.

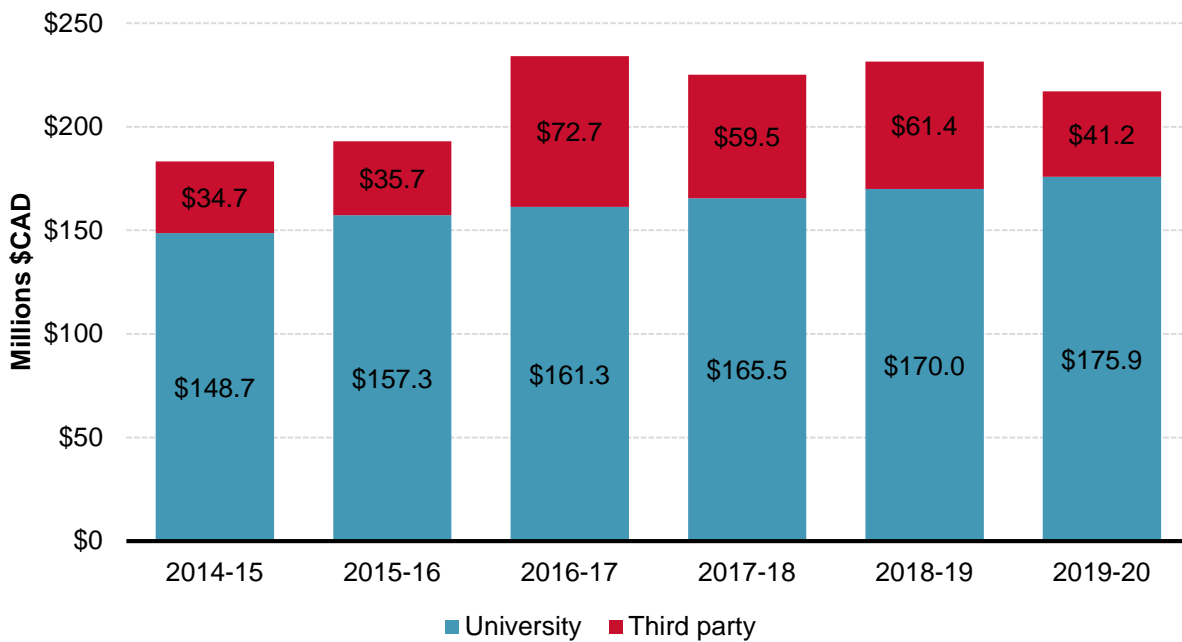
innovation. However, we encourage UOIT to consider undertaking a more detailed study to better understand and to measure their impact in terms of promoting innovation in the region.

UOIT employment, student enrolment and expenditures

Economic impacts estimated in this study are based on the current and projected number of UOIT employees, student enrolment and expenditures over the analysis period of this study: 2014-15 to 2019-20. Forecasts of future spending, employment and enrolment were provided by UOIT and assume that up to two new buildings will be developed and that student enrolment will continue to grow over this period. Economic impacts estimated in this study rely on these projections.

Figure 8 shows the current (2014-15) and projected UOIT expenditures by expense type. For the purposes of this study, we refer to university expenses as operating expenses and third-party expenses as the sum of ancillary, sponsored research and capital expenses from expenditure data provided by the Council of Ontario Universities (COU). Generally, university expenses are funded by a combination of student tuition and non-tuition fees and transfers from the Ministry of Training, Colleges and Universities (MTCU) and third-party expenses come from other government funding, private sector funding and other revenues the university may earn.

Figure 8 – UOIT expenditure projections by expense type, 2014-15 to 2019-20

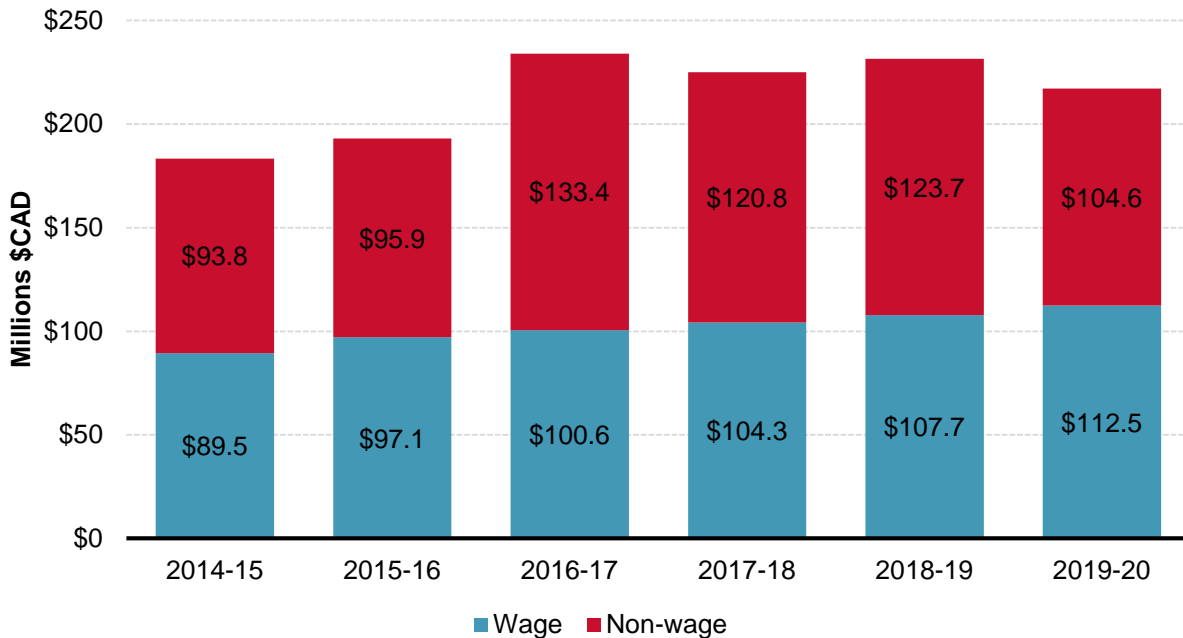


University-funded expenditures are projected to rise steadily over the next five years from roughly \$149 million to \$176 million, which is really a result of increased student enrolment and employment over the analysis period. Third-party expenditures are expected to more than double in 2016-17 to over \$72.7 million and then steadily decrease to \$41.2 million in 2019-20. The increase is attributed to additional funding for expenditures associated with the construction of two new buildings in the north Oshawa campus. In total, UOIT and third-party expenditures are expected to increase from \$183 million in 2014-15 to \$217 million in 2019-20, reaching a high of \$234 million in 2016-17.

Figure 9 and Figure 10 show UOIT current and projected expenditures separated into wage and non-wage categories and current and projected UOIT employment.

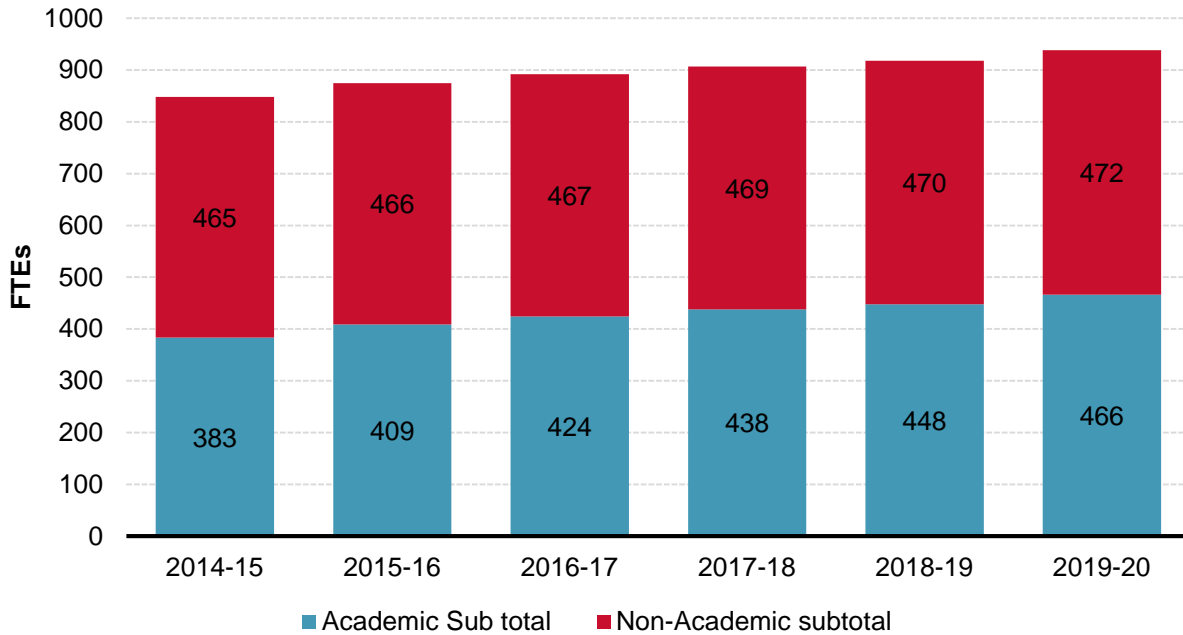
In total, UOIT and third-party expenditures are expected to increase from \$183 million to \$217 million from 2014-15 to 2019-20, reaching a high of \$234 million in 2016-17.

Figure 9 – UOIT wage and non-wage expenditures projections, 2014-15 to 2019-20



Generally, wage expenditures, which include salaries and benefits, account for a little less than half of UOIT’s expenditures over the analysis period. From 2014-15 to 2019-20, wage expenditures are projected to increase from \$89.5 million to \$112.5 million. As mentioned above, UOIT is planning to expand its facilities by adding two additional buildings to its north Oshawa campus location. Additional capital expenditures to fund the planned construction explain the projected increase in non-wage expenditures.

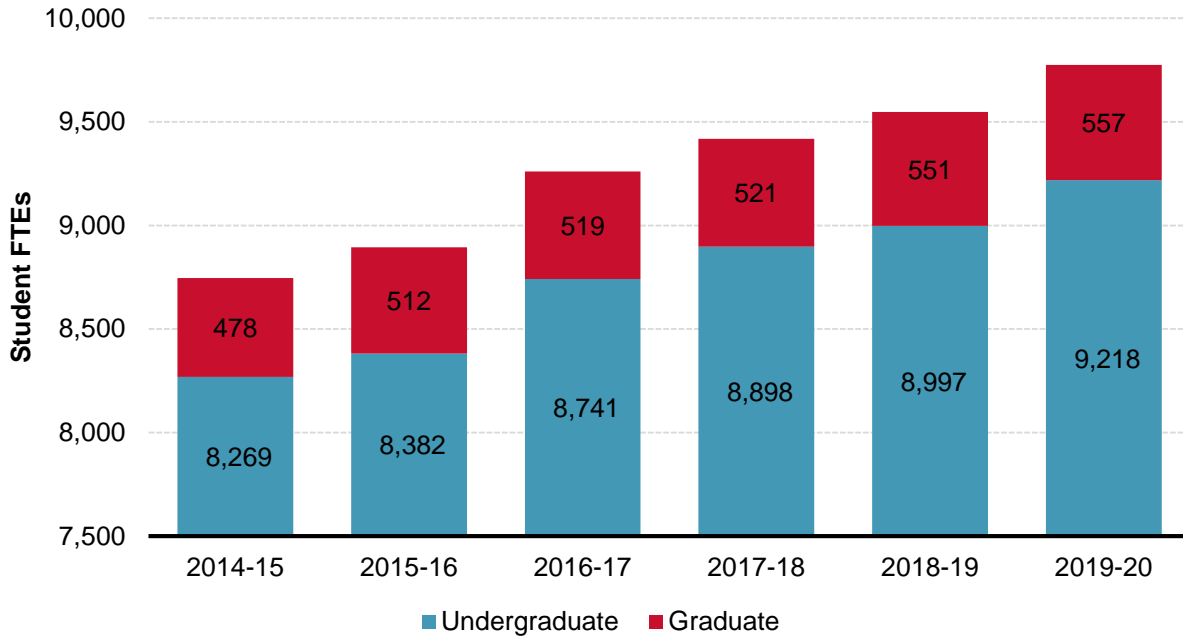
Figure 10 – UOIT employment projections by employee type, 2014-15 to 2019-20



UOIT currently has 848 full-time equivalent employees (FTEs), which include academic employees (45%), and non-academic employees (55%). The number of FTEs is projected to increase to 938 by 2019-20, which is made up of 466 and 472 academic and non-academic employee FTEs respectively.

Underpinning the growth in employment and expenditures is student enrolment, which is also expected to grow significantly over the analysis period. Figure 11 shows current and projected student enrolment by level of study (i.e., undergraduate versus graduate).

Figure 11 – UOIT student enrolment projections by level of education, 2014-15 to 2019-20



From 2014-15 to 2019-20, enrolment at UOIT is expected to increase from 8,746 to 9,775 FTEs, this represents an annual growth rate of 2.3% (CAGR). According to the Campus Master Plan, UOIT enrolment is projected to almost double to 18,500 full-time equivalent students by the year 2030. UOIT’s plan to add two additional facilities to its north Oshawa campus will help to accommodate projected medium- and long-term increases in student enrolment. Indeed, they are required to facilitate this growth.

Students, business owners and residents acknowledge that UOIT is a driving force behind the revitalization of Oshawa’s downtown core.

UOIT’s original location is in northern Oshawa, near Simcoe Street and Conlin Road. UOIT has also established a downtown Oshawa location comprising six buildings, which has benefited the City of Oshawa greatly. Students, business owners and residents acknowledge that UOIT is a driving force behind the revitalization of Oshawa’s downtown core.¹³

Figures 12 and 13 show the breakdown of expenditures and student enrolment projections between UOIT downtown and north Oshawa campus locations over the analysis period.

¹³ UOIT campus renews Oshawa's downtown (February 9, 2012). Retrieved from <http://www.durhamregion.com/community-story/3501918-uoit-campus-renews-oshawa-s-downtown/>.

Figure 12 – Expenditure projections by campus location, 2014-15 to 2019-20

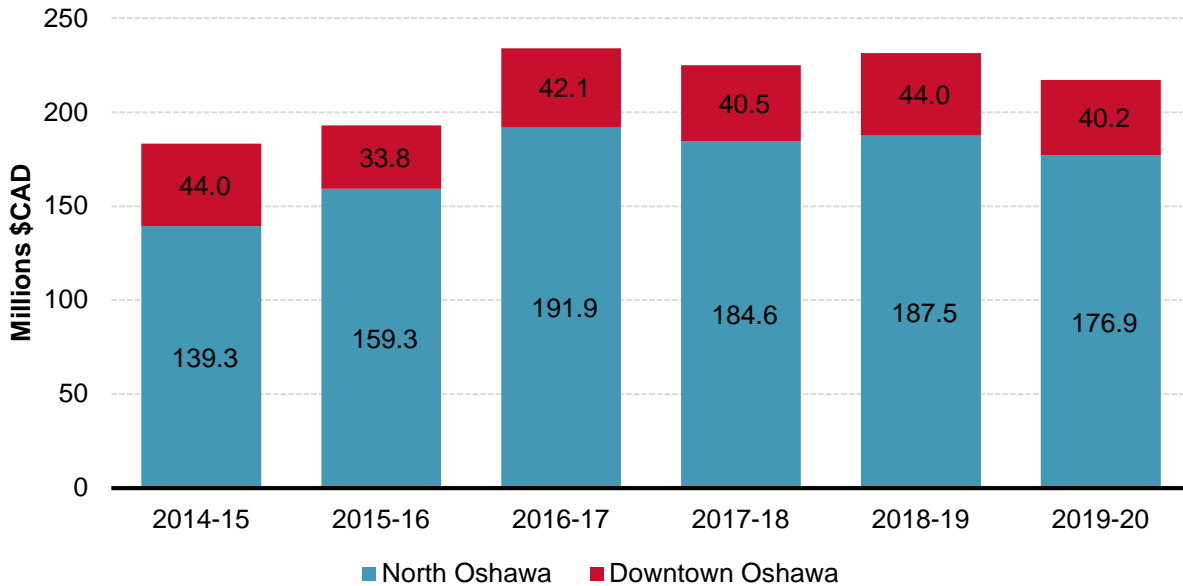
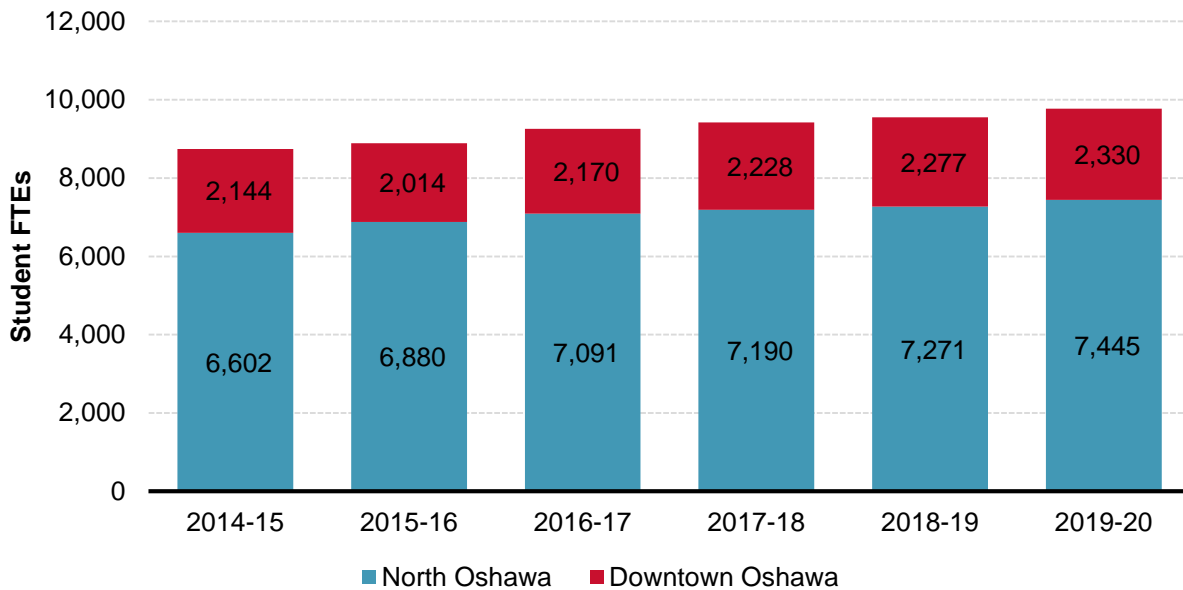


Figure 13 – Student enrolment projections by campus location, 2014-15 to 2019-20



In 2014-15, the north Oshawa location accounted for roughly three-quarters of total UOIT expenditures and, owing to the planned construction, this share is projected to increase to 81.5% by 2019-20. Roughly 76% of UOIT students are enrolled at the north Oshawa location and this proportion is expected to remain stable over the next five years. Despite growing at a slower pace, UOIT’s downtown Oshawa location is also expected to grow quite significantly too. The number of students at the downtown Oshawa location is expected to grow from 2,144 students in 2014-15 to 2,330 students in 2019-20.

According to the Campus Master Plan, UOIT enrolment is projected to be nearly 18,500 full-time equivalent students by 2030. UOIT's plan to add two additional facilities to its north Oshawa location will help to accommodate projected medium- and long-term increases in student enrolment.

Economic impact of UOIT

This section of the report outlines the results of the economic impact study analysis. Economic impact results are reported for Ontario, Durham Region and Northumberland County and on a forward looking basis. Specifically, in the main body of the report we show economic impact results for 2014-15 and for 2019-20. Appendix A provides detailed economic impact results for the constituent municipalities of Durham Region and Appendix B provides economic impact results for 2015-16 to 2018-19. For a description of the terms in the Table 2 refers to the primer on economic impact analysis (above). Economic impacts estimated as part of this study are based on the data and information and including the projections provided by UOIT.

Table 2 presents results of the estimated UOIT economic impact in 2014-15 in Ontario as a whole and in Durham Region and Northumberland County in particular. It is important to note that economic impacts estimated for Durham Region and Northumberland County comprise a portion of the Ontario economic impact. The difference between the Ontario and the Durham Region and Northumberland County economic impacts is the economic impact generated by UOIT that flows to other parts of Ontario.

Table 2 – Economic impact of UOIT, 2014-15

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ontario					
Direct	\$183.3	\$149.3	\$125.2	1,410	\$34.3
Indirect	\$25.5	\$21.0	\$15.2	254	\$4.8
Induced	\$57.9	\$34.4	\$16.5	286	\$7.9
Total	\$266.7	\$204.7	\$156.9	1,949	\$47.1
Durham Region and Northumberland County					
Direct	\$126.2	\$103.3	\$83.8	961	\$23.8
Indirect	\$19.8	\$15.0	\$11.3	187	\$3.5
Induced	\$38.0	\$22.5	\$10.8	187	\$5.2
Total	\$184.0	\$140.8	\$106.0	1,335	\$32.4

UOIT generates a significant economic impact in Ontario. In 2014-15, UOIT contributed \$204.7 million to Ontario's GDP. This number includes the impact of UOIT and third-party expenditures, first-round expenditures of its suppliers as well as the induced impacts generated by employees' and students' spending. In 2014-15, UOIT generated 1,949 jobs through the combination of direct, indirect and induced impacts.

Approximately, 1,335 of these jobs are estimate to be within Durham Region and Northumberland County. UOIT contributed a total of \$47.1 million to government revenues, where government revenues are defined as revenues generated from all forms of taxation (federal, provincial and municipal).

In 2014-15, UOIT generated \$205 million in GDP to Ontario and supported 1,949 jobs.

In 2014-15, UOIT's contribution to Durham Region and Northumberland County in terms of GDP was \$140.8 million and the total number of jobs generated was 1,335. As UOIT expands its significance to the provincial economy and regional economy will likely grow too. Table 3 below shows the forecasted economic impact of UOIT in Ontario, Durham Region and Northumberland County in 2019-20, the last year of the time frame for this study. Appendix A provides detailed economic impact results for constituent part of Durham Region and Appendix B contains forecasted economic impact results for 2015-16, 2016-17, 2017-18 and 2018-19.

Table 3 – Economic impact of UOIT, 2019-20

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ontario					
Direct	\$217.1	\$181.5	\$154.8	1,627	\$41.7
Indirect	\$29.7	\$24.9	\$17.8	298	\$5.7
Induced	\$70.0	\$40.5	\$20.9	361	\$9.3
Total	\$316.9	\$246.9	\$193.5	2,286	\$56.8
Durham Region and Northumberland County					
Direct	\$149.1	\$124.8	\$103.6	1,112	\$28.7
Indirect	\$36.2	\$17.7	\$13.1	218	\$4.1
Induced	\$45.9	\$26.5	\$13.7	236	\$6.1
Total	\$231.2	\$169.0	\$130.4	1,566	\$38.9

In 2019-20 and based on UOIT's expenditure projections, we estimate that UOIT will contribute \$246.9 million to Ontario's GDP, which is a 20% increase from the level in 2014-15, and will generate and support 2,286 jobs across the province. Of this impact, we estimate the majority of UOIT's economic impact will continue to flow to Durham Region and Northumberland County. By 2019-20, UOIT is projected to generate and sustain 1,566 jobs in Durham Region and Northumberland County. From 2015-16 to 2019-20, **UOIT is expected to contribute \$1.2 billion in GDP to the Province – approximately \$824 million is expected to result from economic activity in Durham Region.** As the numbers suggest, UOIT is expected to continue to be an important economic driver for Durham Region and the rest of the Ontario. The following section of the report attempts to more specifically assess the overall return UOIT is providing across Ontario.

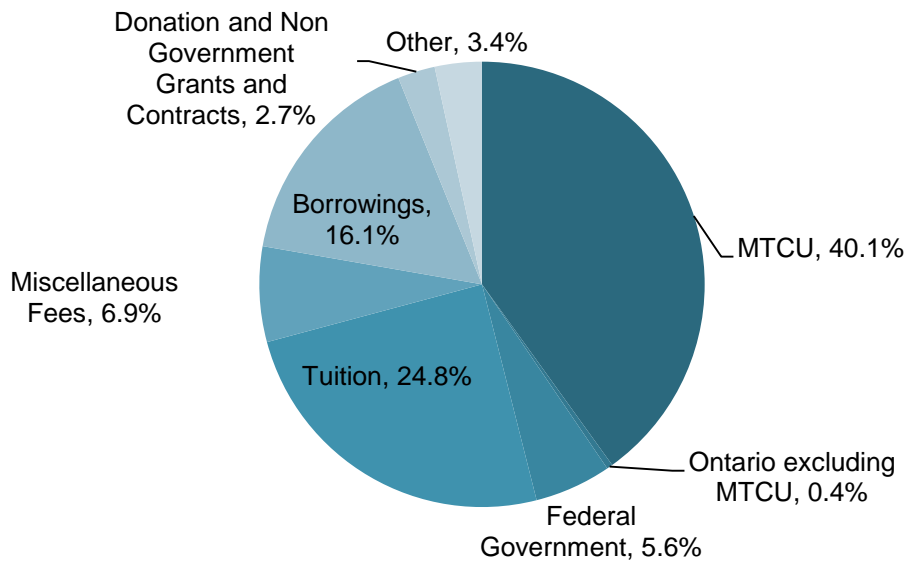
From 2015-16 to 2019-20, UOIT is expected to contribute \$1.2 billion in GDP to the Province – approximately \$824 million is expected to result from economic activity in Durham Region.

It is important to note again that estimates presented above are focused on economic impacts generated by UOIT from its operations as a university and from its attraction of students and visitors to Durham Region. We have not quantified economic impacts from UOIT that emanate from increased human capital and increased innovation.

UOIT return on investment

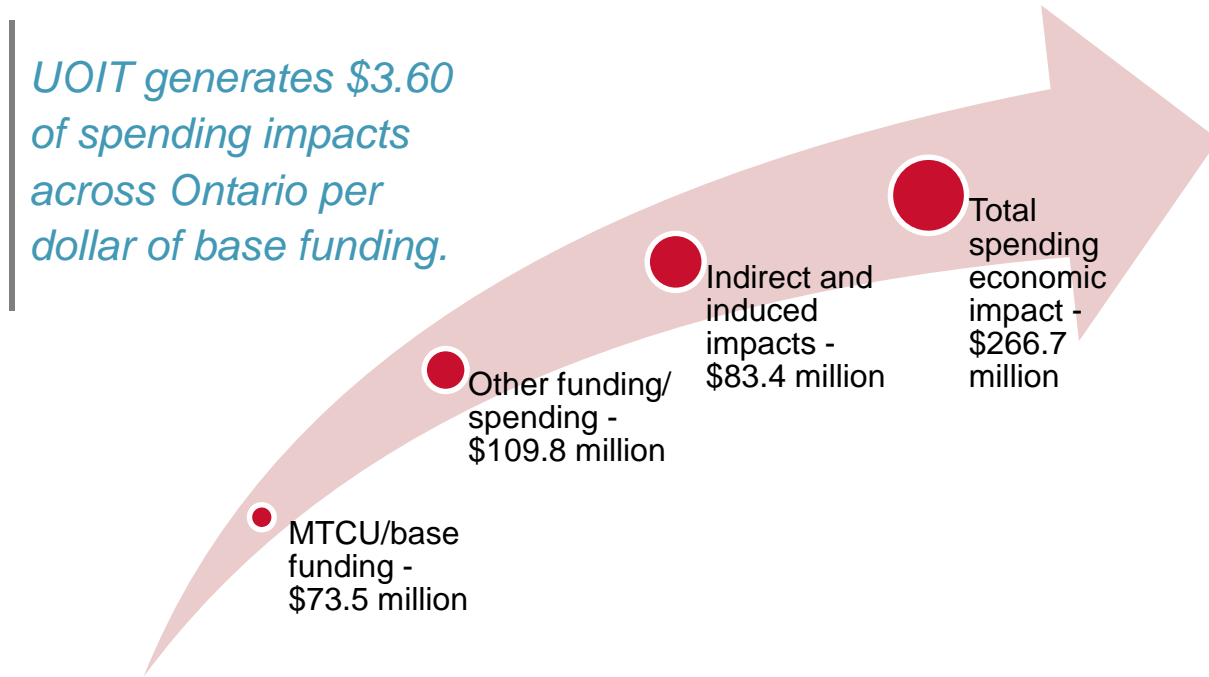
Economic impact results shown above provide a good indication of the overall economic importance of UOIT. They do not, however, directly assess whether investing in UOIT is a good use of government funding. This section of the report tried to answer this question more directly by estimating the overall ROI/leverage ratio of investing in UOIT. Prior to laying out the results, we first need to establish how universities and UOIT in particular are funded. At a high level, universities in Ontario obtain most of their funding from student tuitions and transfers from MTCU. Figure 14 shows where UOIT obtains its funding for expendable funds.

Figure 14 – UOIT expendable funds by funding source, 2012-13



Approximately 40% of UOIT’s funding comes from MTCU, which includes the basic formula grant and other grants. MTCU’s funding is effectively leveraged by UOIT to obtain student tuitions and other funding from the Federal Government, the private sector and other sources. Funding obtained from these sources enable UOIT to operate as a university, attract students and visitors and grow and expand to accommodate increased numbers of students and employees. Accordingly, we use funding provided by MTCU, which we refer to as base funding, as the denominator to calculate the overall ROI or leverage ratio of investing in UOIT. The numerator in the ROI calculation includes MTCU funding, funding from other sources (which we refer to as third-party spending) and indirect and induced impacts generated from this spending. Figure 15 shows the total spending economic impact generated by UOIT and a leverage ratio, which illustrates UOIT’s overall impact in relation to MTCU core funding.

Figure 15 – UOIT return on investment/leverage ratio, 2014-15

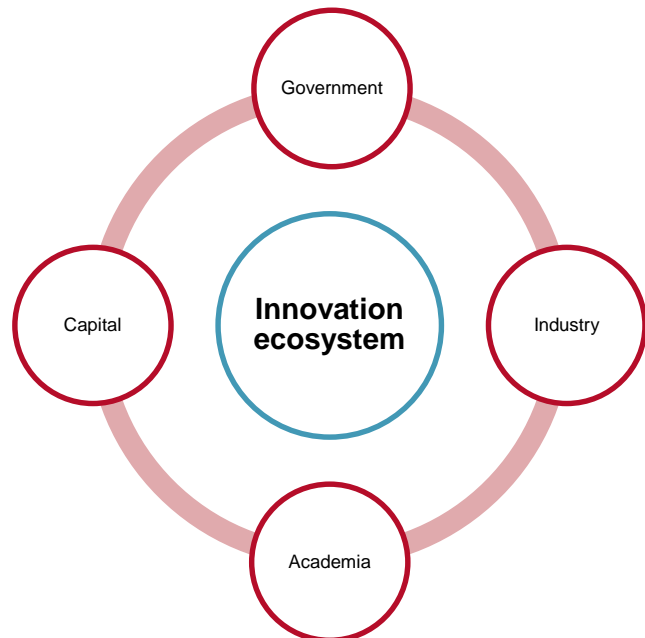


In total, UOIT generates over \$266 million in spending impacts across the Ontario economy, which includes UOIT operating spending, funding/spending from other sources and indirect and induced impacts resulting from the aforementioned spending categories. Every dollar of MTCU funding generates an additional \$2.60 dollars of spending across Ontario for a total leverage ratio of \$3.60 to one. However, it is important to note that this additional economic impact only includes economic activity generated by UOIT expenditures and does not account for any of UOIT’s contributions to the innovation ecosystem. In this respect, the leverage ratio of \$3.60 represents a lower bound of UOIT’s economic impacts. The following section of this report describes and documents how UOIT helps support the innovation ecosystem in Durham Region and Northumberland County.

Innovation ecosystem benefits

Universities and other post-secondary institutions can play important roles in helping regions increase the innovative capacity of a region. In many respects they can help anchor an innovation ecosystem. An innovation ecosystem is loosely defined as the flow of knowledge among people, enterprises and institutions that enable the commercialization of a process, product or service. By enabling and facilitating innovation and commercialization, innovation ecosystems play an important role in driving productivity growth and hence economic growth.

At the heart of any innovation ecosystem is interaction and linkage between industry, academia, government and capital. Innovation



ecosystems with a higher degree of linkage and interaction tend to be successful at turning ideas and knowledge into new products, services and processes. The approach used in this study to assess UOIT's contribution to the innovation ecosystem in Durham Region and Northumberland County focuses on documenting and describing through examples how UOIT generates linkage with industry and government. We encourage UOIT to conduct a more comprehensive study to better assess and quantify these impacts, which may involve interviewing and surveying companies and other local institutions to better understand how they benefit from being located near UOIT. Table 4 lists some of the current industry-academic initiatives.

Table 4 – Selective UOIT industry-academic initiatives/partnerships

Initiative/partnership name	Companies and other stakeholders involved	Description
Advanced Operations Overview for Managers	Ontario Power Generation	A 20-week program designed for managers moving into leadership roles in the nuclear industry.
Graduate Design Engineering Diploma	Ontario Power Generation	Started in 2013, the program focuses on design engineering for the nuclear industry.
Artemis	IBM, The Hospital for Sick Children	Sponsored research to identify potentially life-threatening infections in premature babies. After a successful trial at SickKids in Toronto, the system is now used in hospitals in the U.S. and China.
Women in Engineering	Hydro One	Hydro One initiated an awareness campaign, mentoring and networking opportunities to encourage women to pursue science, technology, engineering and mathematics.
Applied Research and Commercialization Initiative	UniTrak	UniTrak, a Northumberland County firm, teamed up with UOIT's Faculty of Engineering and Applied Science to engage in collaborative research to develop a pivoting bucket elevator. A prototype that was created as a result of the partnership increased marketability for UniTrak.
Purdue Pharma Canada Lecture Series	Purdue Pharma Canada	This Canadian pharmaceutical company annually sponsors a lecture series at UOIT to discuss current developments affecting the health of Canadians and to connect students and the community with leading scientists.

Initiative/partnership name	Companies and other stakeholders involved	Description
iWordQ	Quillsoft	Quillsoft collaborated with the Faculty of Science to develop iWordQ reading assistance mobile application. This product is a touch-based reading and writing interface for tablets designed to support vocabulary acquisition, text comprehension and reduction of reading anxiety.
Spirit50	Vintage Fitness	A UOIT gaming researcher and UOIT's Human-Computer Interaction (HCI) Games Group partnered with Vintage Fitness to conduct research on applying technology to encourage active lifestyle of older adults and create Spirit50, a gamified online community.
Game Developer Program	Tobii Technology	Tobii Technology of Sweden provides industry-leading eye-tracking hardware, software development kits and support for students enrolled in game development courses at UOIT.

Industry-academic partnerships are very much win-win initiatives that can play an important role in driving innovation and enabling the commercialization process. On the one hand, UOIT benefits from its collaboration with industry through sponsored research and student internship placements. On the other hand, companies in the region benefit from UOIT's research expertise, human capital resources and specialized infrastructure. Table 4 provides several examples that demonstrate that UOIT has facilitated and enabled innovation and commercialization in the region working with companies in Durham Region and Northumberland County in various industries. UOIT also works closely with industry to help address skills gaps and to facilitate training. In addition to generating positive economic benefits, some of the initiatives that UOIT has partnered with industry have a much broader social impact. For example, the research that UOIT has conducted with IBM and The Hospital for Sick Children is designed to reduce childhood mortality in Canada and around the world.

UOIT has facilitated and enabled innovation and commercialization in the region working with companies in Durham Region and Northumberland County in various industries.

In addition to facilitating linkage with industry, UOIT also promotes linkage with community, government and other public sector stakeholders, which is another important part of a successful innovation ecosystem. Table 5 lists some of UOIT's government-academic partnerships and initiatives.

Table 5 – UOIT community, government and public sector initiatives and partnerships

Initiative/partnership name	Stakeholders involved	Description
Pan Am UOIT Meteorological Supersite (PUMS)	Environment Canada	Installation of a meteorological supersite at UOIT to monitor weather conditions during the 2015 Pan Am/Parapan Am Games.
Cognitive Function During Exertional Heat Stress	University of Manitoba, Toronto Fire Service, Canadian Memorial Chiropractic Compensation Board of Manitoba	UOIT, in collaboration with partners, utilizes its climatic wind tunnel facility to examine the effects of exercise in hot environments on the cognitive function of firefighters.
FastStart	Durham College, Trent University, Spark Centre, Fleming College, and the Greater Peterborough Innovation Cluster	UOIT, in collaboration with partners, developed a non-credit education offering to allow students to learn about entrepreneurship. It includes focused events, customized services and programs.
Experiential Learning Program	320 industry and community partners	Over 320 different organizations from across Ontario actively partner with UOIT to provide placement, practicum, intern and co-op locations for our students.
Pan Am IT setup	Pan Am/Para Pan TORONTO2015, Cisco	UOIT's Faculty of Business and Information Technology has partnered with Cisco and the Toronto 2015 Pan Am/Parapan Am Games to assist with networking and IT set up and operation during the games.
Bullying Awareness Workshop	Durham District School Board, Near North District School Board	UOIT engages in workshops and develops programs to end bullying behavior among children and adolescents.
Police interview training	Durham Regional Police Service	UOIT provided police interview training designed to avoid planting false memories during questioning.
Elder Abuse research	Reh'ma Community Services	UOIT is engaged in research that examines the stressors leading to elder abuse and conditions contributing to such abuse within a particular community.

Initiative/partnership name	Stakeholders involved	Description
Falls prevention and post-stroke programs for seniors	Oshawa Senior Citizens Centre	An Assistant Professor with the UOIT Faculty of Health Sciences designs falls-prevention and active-aging programs for seniors.

UOIT is actively engaged in collaborative research programs, partnerships and initiatives that generate significant social, health, safety and environmental benefits. The university is also closely tied with many local stakeholders including Lakeridge Health, Durham Regional Police Service, Durham College, the Durham District School Board and many others. These initiatives in particular can play an important role in helping further the innovative capacity of the regional innovation ecosystem.

UOIT also plays an important role working closely with key municipal and regional governments and stakeholders to promote local and regional economic development, examples are provided in Table 6.

Table 6 – UOIT regional government-academic initiatives/partnerships

Strategy	Description	UOIT's role
Investment Attraction Strategy	Focuses on four markets: China, Germany, Brazil and U.S. in five key sectors: Advanced Manufacturing, Digital Technologies, Energy, Agri-Food and Tourism and Film).	Participate in business missions, organize incoming delegation tours, and work on joint efforts with ACE. Inform Region marketing and promotional material. Provide relevant information on labour force/graduate information.
Durham Sports Tourism	Durham Tourism looks to measure the economic impact of sports events in Durham and maintains an inventory of sports and related facilities.	Bid on provincial, national and international events. UOIT has 13 varsity sports which brings athletes, coaches and support staff from across the province to the region for regular season and playoff games.
Agri-Food Strategy (2013-2018)	Assist the agriculture industry in the following ways: attract, retain and expand agriculture and agri-food businesses; promote outreach and education; and support an agriculture labour force.	Identify synergies between industry and UOIT (e.g., in engineering, manufacturing, business). These include research, experiential learning, continuing education and more.

Strategy	Description	UOIT's role
Vibrant North Durham (2013-2018)	Economic development plan for the three northern Durham Region townships (Uxbridge, Scugog, and Brock). A five-year plan built on four key strategies: be open for business, inspire and support entrepreneurship, create a vibrant future for young adults, build a strong small town and rural identity.	Participate in the annual Building Business Forum (BFF) trade show. UOIT has had two capstone projects for the Township of Uxbridge and Durham Region Economic Development. Support the Agri-Food Strategy.
Film and Digital Media Analysis	Take a proactive role in further developing alliances, initiatives and partnerships to promote the entire Region and create a coherent and robust film sector.	Provide location for filming (e.g., UOIT is actively marketing the ACE climatic wind tunnel for the industry). Promotion of students in the Information Technology Pathways program. Game Development and Entrepreneurship – Bridge to work with film crews in Durham Region.

As demonstrated by the several examples laid out in Table 6, UOIT works proactively with the Region of Durham and local municipalities to promote economic development in the region by supporting key programs and economic development strategies. In doing so, UOIT helps further promote linkages and collaborations across the innovation ecosystem, which effectively magnifies UOIT's economic impact and its importance to Durham Region and Northumberland County.

Summary of key findings

Universities generate economic impacts through their operating activities, by attracting students and visitors to the region in which they are located, increasing human capital and deepening local skills and talent and promoting a culture of knowledge and innovation. This study quantified UOIT's economic impact to Ontario, Durham Region and Northumberland County associated with UOIT's operating activities and its ability to attract visitors and students to the local area. We found that UOIT does generate significant economic impact for the province and the region and is expected to do so going forward:

- In 2019-20, UOIT is projected to contribute \$247 million to Ontario's GDP, which is a 20% increase from 2014-15 levels, and generate and support 1,949 jobs across the province.
- Much of UOIT's economic impact generated from its operating activities and its ability to attract students and visitors to the region. By 2019-20, UOIT is projected to generate and sustain 1,566 jobs in Durham Region and Northumberland County.
- UOIT has historically played an important role in Durham Region's economy and labour market and our projections suggest that UOIT will become relatively more important to Durham Region's economy over the analysis period of this study. However, UOIT's ability to do so largely depends

on being able to grow and develop to accommodate increased number of students and employees.

- Results of our analysis also suggest that government generates a significant rate of return from investing in UOIT. We estimate that UOIT generates \$3.60 of spending impacts across Ontario per dollar of base funding received from the province. This is based on a narrow definition of economic impacts and does not include UOIT's impact in supporting the regional innovation ecosystem. Accordingly, this ROI estimate should be viewed as being a lower bound.
- From a more qualitative perspective, UOIT also plays an important role in the region's innovation ecosystem and multiple examples are provided above that demonstrate that UOIT helps drive innovation and regional economic growth by promoting and encouraging linkage and collaboration across the innovation ecosystem.

Recommendations to enhance UOIT's economic impact

Durham Region and Northumberland County have experienced significant growth over the past several years, but are currently dealing with some headwinds. The manufacturing sector, which the region (and the province) traditionally relied upon, is facing challenges. Ontario is also facing fiscal and infrastructure deficits, which means that government investment decisions will be more closely scrutinized. The evidence suggests that UOIT has played an important role in helping Durham Region and Northumberland County deal with some of these challenges and our projections of UOIT's economic impact over the next five years indicate that UOIT can continue to do so. Recommendations, which may help enhance UOIT's economic impact to the region and the province, are listed below. These recommendations are based on the results of this study, a high level comparison of economic impact results of this study to other comparable studies and on our understanding of the region.

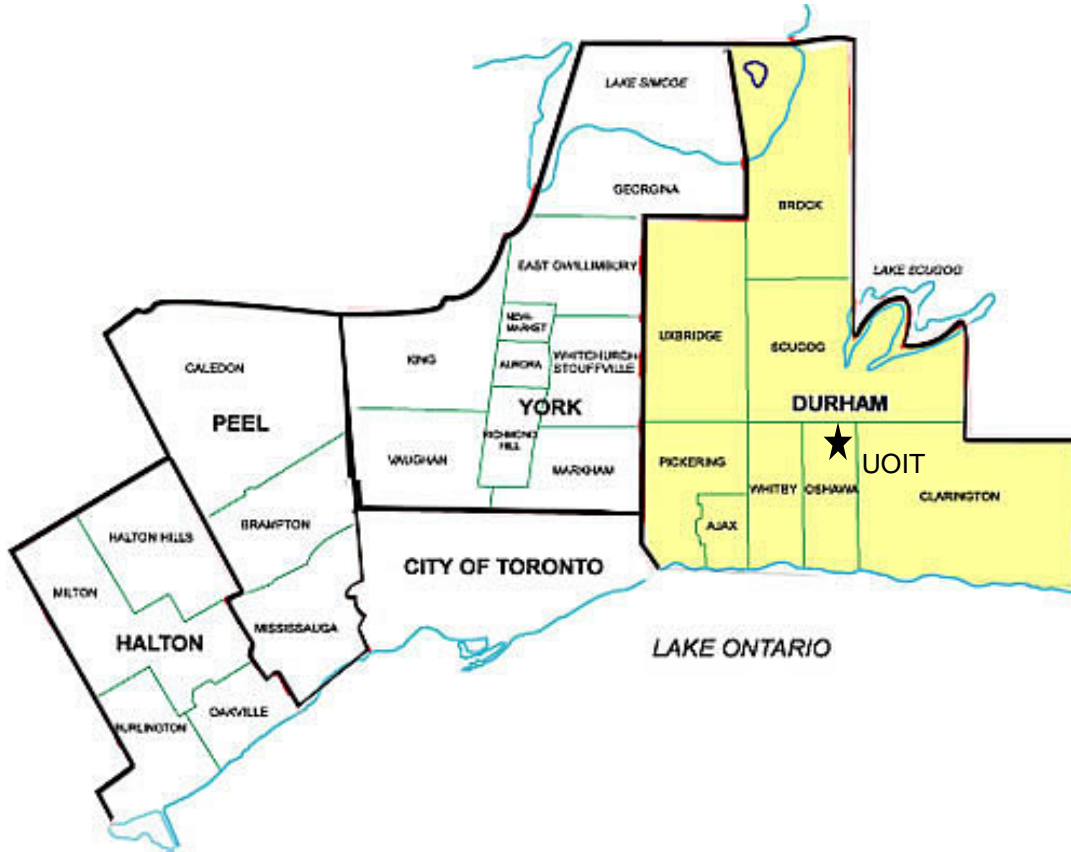
- Economic impacts estimated as part of this study are in many respects a conservative estimate of UOIT's economic impact. The methodology used to estimate the economic impact of UOIT is similar to the methodology used by the University of Waterloo for a 2013 economic impact study. The University of Waterloo (UW) study found that it returns \$8.8 in spending impacts per dollar of government funding, which is about two-times larger than the return generated by UOIT. However, economic impacts estimated as part of this study did not include innovation ecosystem impacts. In the UW study, these were estimated by surveying technology related companies to better understand the role UW played in their formation and in their decision to locate (or continue to locate) in Waterloo Region. This information was then used to attribute a portion of each companies' spending and employment in the region to UW, which provided a measureable proxy for innovation ecosystem impacts. We recommend that UOIT consider undertaking a study of this nature to better understand why companies are locating in the region and to determine what role UOIT played in this respect. Data and information obtained from this survey can help UOIT, Durham Region and Northumberland County design programs or alter existing ones to help enhance the innovation ecosystem in the region. By tracking this information, UOIT can also assess how it is performing in this respect.
- We understand that UOIT is currently in the process of seeking funding for its expansion. UOIT's ability to enhance its economic impact to the region partially depends on being able to grow and develop so it can house and educate an increasing number of students. According to the Campus Master Plan, UOIT enrolment is projected to be nearly 18,500 full-time equivalent students by 2030. This is roughly double existing levels. UOIT should continue working to address funding gaps, and we think this report can be used to facilitate discussions with key stakeholders.

- Universities that can attract a higher proportion of funding from the private sector or other government departments and ministries will generate higher leverage ratios/ROI. UOIT currently attracts a relatively small share of its funding outside core sources (i.e., MTCU and student tuitions and associated revenues). Increasing funding from other governmental sources and from the private sector can help enhance UOIT's leverage ratio/ROI and also further enhance linkage across the innovation ecosystem.

Appendix A – Detailed economic impact results for Durham Region

The table below shows detailed economic impact results for constituent parts of Durham Region: Ajax, Brock, Clarington, Oshawa, Pickering, Scugog, Uxbridge and Whitby. The map below shows the location of Durham Region in the context of the GTA and the municipalities/townships that comprise Durham Region.

Map of Durham Region



Map of Northumberland County



Economic impact on Durham Region municipalities, 2014-15

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ajax					
Direct	\$14.9	\$12.7	\$9.1	117	\$2.9
Indirect	\$4.1	\$3.0	\$2.4	38	\$0.7
Induced	\$4.5	\$2.7	\$1.3	22	\$0.6
Total	\$23.5	\$18.3	\$12.7	177	\$4.2
Brock					
Direct	\$0.8	\$0.7	\$0.4	7	\$0.2
Indirect	\$0.2	\$0.2	\$0.1	2	\$0.0
Induced	\$0.2	\$0.1	\$0.1	1	\$0.0
Total	\$1.2	\$1.0	\$0.6	10	\$0.2
Clarington					
Direct	\$16.6	\$13.6	\$11.0	127	\$3.1
Indirect	\$2.4	\$1.9	\$1.3	22	\$0.4
Induced	\$4.9	\$2.9	\$1.4	24	\$0.7
Total	\$23.9	\$18.4	\$13.8	173	\$4.2
Oshawa					
Direct	\$44.0	\$35.1	\$30.7	329	\$8.1
Indirect	\$4.1	\$3.2	\$2.3	39	\$0.7
Induced	\$13.4	\$7.9	\$3.8	66	\$1.8
Total	\$61.5	\$46.3	\$36.8	434	\$10.6
Pickering					
Direct	\$10.2	\$8.8	\$5.9	81	\$2.0
Indirect	\$3.4	\$2.5	\$2.0	32	\$0.6

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Induced	\$3.0	\$1.8	\$0.9	15	\$0.4
Total	\$16.6	\$13.1	\$8.8	128	\$3.0
Scugog					
Direct	\$4.8	\$3.9	\$3.2	36	\$0.9
Indirect	\$0.5	\$0.4	\$0.3	5	\$0.1
Induced	\$1.4	\$0.8	\$0.4	7	\$0.2
Total	\$6.7	\$5.1	\$3.9	48	\$1.2
Uxbridge					
Direct	\$2.2	\$1.9	\$1.2	17	\$0.4
Indirect	\$0.6	\$0.5	\$0.4	6	\$0.1
Induced	\$0.6	\$0.3	\$0.2	3	\$0.1
Total	\$3.4	\$2.7	\$1.8	26	\$0.6
Whitby					
Direct	\$30.7	\$24.8	\$20.9	231	\$5.7
Indirect	\$4.3	\$3.3	\$2.5	41	\$0.8
Induced	\$9.4	\$5.6	\$2.7	46	\$1.3
Total	\$44.4	\$33.7	\$26.1	319	\$7.8

Economic impact on Durham Region municipalities, 2015-16

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ajax					
Direct	\$15.6	\$13.3	\$9.6	123	\$3.1
Indirect	\$4.3	\$3.1	\$2.4	39	\$0.7
Induced	\$4.7	\$2.8	\$1.3	23	\$0.6
Total	\$24.6	\$19.2	\$13.4	185	\$4.4
Brock					
Direct	\$0.8	\$0.8	\$0.4	7	\$0.2
Indirect	\$0.3	\$0.2	\$0.1	2	\$0.0
Induced	\$0.2	\$0.1	\$0.1	1	\$0.0
Total	\$1.3	\$1.1	\$0.6	10	\$0.2
Clarington					
Direct	\$17.5	\$14.5	\$11.7	133	\$3.3
Indirect	\$2.5	\$2.0	\$1.4	23	\$0.5
Induced	\$5.2	\$3.1	\$1.5	26	\$0.7
Total	\$25.1	\$19.5	\$14.6	182	\$4.5
Oshawa					
Direct	\$46.3	\$37.6	\$33.0	342	\$8.6
Indirect	\$4.3	\$3.4	\$2.4	41	\$0.8
Induced	\$14.2	\$8.4	\$4.0	70	\$1.9
Total	\$64.9	\$49.4	\$39.4	453	\$11.4
Pickering					
Direct	\$10.6	\$9.2	\$6.3	85	\$2.1
Indirect	\$3.5	\$2.6	\$2.0	33	\$0.6

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Induced	\$3.2	\$1.9	\$0.9	16	\$0.4
Total	\$17.3	\$13.6	\$9.2	134	\$3.1
Scugog					
Direct	\$5.0	\$4.1	\$3.4	38	\$0.6
Indirect	\$0.6	\$0.4	\$0.3	5	\$0.1
Induced	\$1.5	\$0.9	\$0.4	7	\$0.2
Total	\$7.1	\$5.5	\$4.2	50	\$1.3
Uxbridge					
Direct	\$2.3	\$2.0	\$1.3	18	\$0.5
Indirect	\$0.7	\$0.5	\$0.4	6	\$0.1
Induced	\$0.6	\$0.4	\$0.2	3	\$0.1
Total	\$3.5	\$2.8	\$1.8	28	\$0.7
Whitby					
Direct	\$32.3	\$26.4	\$22.5	241	\$6.1
Indirect	\$4.5	\$3.4	\$2.6	42	\$0.8
Induced	\$9.9	\$5.9	\$2.8	49	\$1.4
Total	\$46.7	\$35.7	\$27.8	333	\$8.2

Economic impact on Durham Region municipalities, 2016-17

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ajax					
Direct	\$18.6	\$15.3	\$11.3	149	\$3.5
Indirect	\$5.1	\$3.9	\$3.0	48	\$0.9
Induced	\$6.3	\$3.7	\$1.8	31	\$0.9
Total	\$29.9	\$22.9	\$16.1	228	\$5.3
Brock					
Direct	\$1.1	\$0.9	\$0.6	9	\$0.2
Indirect	\$0.4	\$0.3	\$0.2	4	\$0.1
Induced	\$0.3	\$0.2	\$0.1	2	\$0.0
Total	\$1.8	\$1.5	\$0.9	15	\$0.3
Clarington					
Direct	\$20.7	\$16.1	\$13.2	153	\$3.7
Indirect	\$3.3	\$2.8	\$1.9	32	\$0.6
Induced	\$6.7	\$4.0	\$1.9	33	\$0.9
Total	\$30.7	\$22.9	\$17.0	218	\$5.3
Oshawa					
Direct	\$54.5	\$40.8	\$35.9	378	\$9.4
Indirect	\$5.6	\$4.7	\$3.2	54	\$1.1
Induced	\$17.7	\$10.5	\$5.1	87	\$2.4
Total	\$77.8	\$56.0	\$44.1	520	\$12.9
Pickering					
Direct	\$12.8	\$10.8	\$7.6	106	\$2.5
Indirect	\$4.2	\$3.3	\$2.5	41	\$0.8

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Induced	\$4.3	\$2.6	\$1.2	21	\$0.6
Total	\$21.3	\$16.6	\$11.3	168	\$3.8
Scugog					
Direct	\$5.9	\$4.6	\$3.8	43	\$1.1
Indirect	\$0.9	\$0.7	\$0.5	8	\$0.2
Induced	\$1.9	\$1.1	\$0.5	9	\$0.3
Total	\$8.7	\$6.4	\$4.9	61	\$1.5
Uxbridge					
Direct	\$2.7	\$2.3	\$1.6	23	\$0.5
Indirect	\$0.9	\$0.7	\$0.5	8	\$0.2
Induced	\$0.9	\$0.5	\$0.3	4	\$0.1
Total	\$4.5	\$3.6	\$2.3	36	\$0.8
Whitby					
Direct	\$38.1	\$29.0	\$24.7	272	\$6.7
Indirect	\$5.4	\$4.3	\$3.2	52	\$1.0
Induced	\$12.5	\$7.4	\$3.6	61	\$1.7
Total	\$55.9	\$40.8	\$31.4	385	\$9.4

Economic impact on Durham Region municipalities, 2017-18

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ajax					
Direct	\$18.0	\$15.1	\$11.2	144	\$3.5
Indirect	\$4.9	\$3.7	\$2.9	46	\$0.9
Induced	\$5.9	\$3.5	\$1.8	30	\$0.8
Total	\$28.8	\$22.3	\$15.8	221	\$5.1
Brock					
Direct	\$1.0	\$0.9	\$0.5	9	\$0.2
Indirect	\$0.4	\$0.3	\$0.2	3	\$0.1
Induced	\$0.3	\$0.2	\$0.1	1	\$0.0
Total	\$1.6	\$1.4	\$0.8	14	\$0.3
Clarington					
Direct	\$20.1	\$16.2	\$13.2	150	\$3.7
Indirect	\$3.1	\$2.5	\$1.8	30	\$0.6
Induced	\$6.4	\$3.8	\$1.9	33	\$0.9
Total	\$29.6	\$22.4	\$16.9	212	\$5.2
Oshawa					
Direct	\$53.0	\$41.4	\$36.5	376	\$9.5
Indirect	\$5.3	\$4.3	\$3.0	51	\$1.0
Induced	\$17.2	\$10.0	\$5.1	87	\$2.3
Total	\$75.6	\$55.7	\$44.6	514	\$12.8
Pickering					
Direct	\$12.3	\$10.5	\$7.4	102	\$2.4
Indirect	\$4.1	\$3.1	\$2.4	39	\$0.7

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Induced	\$4.0	\$2.3	\$1.2	21	\$0.6
Total	\$20.4	\$16.0	\$11.0	162	\$3.7
Scugog					
Direct	\$5.8	\$4.6	\$3.8	42	\$1.1
Indirect	\$0.8	\$0.6	\$0.4	7	\$0.1
Induced	\$1.8	\$1.1	\$0.5	9	\$0.2
Total	\$8.4	\$6.3	\$4.8	59	\$1.5
Uxbridge					
Direct	\$2.6	\$2.3	\$1.5	22	\$0.5
Indirect	\$0.8	\$0.7	\$0.5	8	\$0.2
Induced	\$0.8	\$0.7	\$0.2	4	\$0.1
Total	\$4.2	\$3.4	\$2.2	34	\$0.8
Whitby					
Direct	\$37.0	\$29.3	\$25.0	269	\$6.7
Indirect	\$5.2	\$4.1	\$3.0	50	\$1.0
Induced	\$12.1	\$7.0	\$3.6	61	\$1.6
Total	\$54.3	\$40.4	\$31.6	380	\$9.3

Economic impact on Durham Region municipalities, 2018-19

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ajax					
Direct	\$18.5	\$15.5	\$11.5	147	\$3.6
Indirect	\$5.0	\$3.8	\$2.9	47	\$0.9
Induced	\$6.1	\$3.5	\$1.8	31	\$0.8
Total	\$29.6	\$22.8	\$16.2	225	\$5.3
Brock					
Direct	\$1.0	\$0.9	\$0.5	9	\$0.2
Indirect	\$0.4	\$0.3	\$0.2	4	\$0.1
Induced	\$0.3	\$0.2	\$0.1	1	\$0.0
Total	\$1.7	\$1.4	\$0.8	14	\$0.3
Clarington					
Direct	\$20.6	\$16.6	\$13.6	153	\$3.8
Indirect	\$3.2	\$2.6	\$1.8	30	\$0.6
Induced	\$6.6	\$3.8	\$2.0	33	\$0.9
Total	\$30.4	\$22.0	\$17.3	217	\$5.3
Oshawa					
Direct	\$54.5	\$42.6	\$37.6	382	\$9.8
Indirect	\$5.5	\$4.4	\$3.1	52	\$1.0
Induced	\$17.7	\$10.3	\$5.2	90	\$2.4
Total	\$77.7	\$57.3	\$45.9	524	\$13.2
Pickering					
Direct	\$12.6	\$10.8	\$7.6	104	\$2.5
Indirect	\$4.2	\$3.2	\$2.4	40	\$0.7

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Induced	\$4.1	\$2.4	\$1.2	21	\$0.6
Total	\$20.9	\$16.4	\$11.2	165	\$3.8
Scugog					
Direct	\$5.9	\$4.7	\$4.0	43	\$1.1
Indirect	\$0.8	\$0.7	\$0.5	8	\$0.1
Induced	\$1.9	\$1.1	\$0.6	9	\$0.3
Total	\$8.6	\$6.5	\$5.0	60	\$1.5
Uxbridge					
Direct	\$2.7	\$2.3	\$1.6	23	\$0.5
Indirect	\$0.8	\$0.7	\$0.5	8	\$0.2
Induced	\$0.8	\$0.5	\$0.2	4	\$0.1
Total	\$4.3	\$3.5	\$2.3	35	\$0.8
Whitby					
Direct	\$38.0	\$30.1	\$25.8	273	\$6.9
Indirect	\$5.3	\$4.2	\$3.1	51	\$1.0
Induced	\$12.4	\$7.2	\$3.7	63	\$1.7
Total	\$55.8	\$41.5	\$32.5	387	\$9.6

Economic impact on Durham Region municipalities, 2019-20

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ajax					
Direct	\$17.5	\$15.0	\$11.1	138	\$3.5
Indirect	\$7.4	\$3.5	\$2.7	44	\$0.8
Induced	\$5.3	\$3.1	\$1.6	28	\$0.7
Total	\$30.2	\$21.5	\$15.4	210	\$5.0
Brock					
Direct	\$0.9	\$0.8	\$0.5	8	\$0.2
Indirect	\$0.5	\$0.2	\$0.2	3	\$0.1
Induced	\$0.2	\$0.1	\$0.1	1	\$0.0
Total	\$1.6	\$1.2	\$0.7	12	\$0.3
Clarington					
Direct	\$19.6	\$16.5	\$13.5	147	\$3.8
Indirect	\$4.4	\$2.2	\$1.6	27	\$0.5
Induced	\$5.9	\$3.4	\$1.8	31	\$0.8
Total	\$30.0	\$22.1	\$16.9	204	\$5.1
Oshawa					
Direct	\$52.2	\$43.0	\$38.2	375	\$9.9
Indirect	\$7.7	\$3.9	\$2.7	46	\$0.9
Induced	\$16.3	\$9.4	\$4.9	84	\$2.2
Total	\$76.1	\$56.3	\$45.7	505	\$13.0
Pickering					
Direct	\$10.2	\$8.8	\$5.9	81	\$2.0
Indirect	\$3.4	\$2.5	\$2.0	32	\$0.6

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Induced	\$3.0	\$1.8	\$0.9	15	\$0.4
Total	\$16.6	\$13.1	\$8.8	128	\$3.0
Scugog					
Direct	\$5.6	\$4.7	\$4.0	42	\$1.1
Indirect	\$1.0	\$0.5	\$0.4	6	\$0.1
Induced	\$1.7	\$1.0	\$0.5	9	\$0.2
Total	\$8.4	\$6.2	\$4.8	57	\$1.4
Uxbridge					
Direct	\$2.5	\$2.2	\$1.5	21	\$0.5
Indirect	\$1.2	\$0.6	\$0.4	7	\$0.1
Induced	\$0.7	\$0.4	\$0.2	4	\$0.1
Total	\$4.4	\$3.2	\$2.1	31	\$0.7
Whitby					
Direct	\$36.3	\$30.2	\$25.9	266	\$6.9
Indirect	\$7.8	\$3.8	\$2.9	47	\$0.9
Induced	\$11.4	\$6.6	\$3.4	59	\$1.5
Total	\$55.5	\$40.6	\$32.2	372	\$9.3

Appendix B – Detailed economic impact results for 2015-16, 2016-17, 2017-18 and 2018-19

Tables below show detailed economic impact results for 2015-16, 2016-17, 2017-18 and 2018-19. The main body of the report shows results for 2014-15 and 2019-20 – the first and last year of the time period for this study.

Economic impact of UOIT, 2015-16

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ontario					
Direct	\$193.0	\$159.0	\$134.3	1,469	\$36.6
Indirect	\$26.5	\$22.0	\$15.8	265	\$5.1
Induced	\$61.2	\$36.3	\$17.4	302	\$8.3
Total	\$280.7	\$217.3	\$167.5	2,036	\$50.0
Durham Region					
Direct	\$130.4	\$107.8	\$88.2	987	\$24.8
Indirect	\$20.5	\$15.6	\$11.6	193	\$3.6
Induced	\$39.4	\$23.4	\$11.2	194	\$5.4
Total	\$190.3	\$146.7	\$111.0	1,374	\$33.7
Northumberland County					
Direct	\$2.2	\$1.8	\$1.6	16	\$0.4
Indirect	\$0.2	\$0.1	\$0.1	2	\$0.0
Induced	\$0.6	\$0.4	\$0.2	3	\$0.1
Total	\$3.0	\$2.3	\$1.9	21	\$0.5

Economic impact of UOIT, 2016-17

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ontario					
Direct	\$234.0	\$181.4	\$153.4	1,745	\$41.7
Indirect	\$35.9	\$31.9	\$22.3	371	\$7.3
Induced	\$81.1	\$48.1	\$23.1	398	\$11.1
Total	\$351.0	\$261.4	\$198.8	2,514	\$60.1
Durham Region					
Direct	\$154.1	\$119.9	\$98.6	1,134	\$27.6
Indirect	\$25.7	\$20.7	\$15.0	248	\$4.8
Induced	\$50.7	\$30.1	\$14.4	249	\$6.9
Total	\$230.6	\$170.7	\$128.0	1,631	\$39.3
Northumberland County					
Direct	\$2.6	\$2.0	\$1.8	18	\$0.5
Indirect	\$0.2	\$0.1	\$0.1	2	\$0.0
Induced	\$0.6	\$0.4	\$0.2	3	\$0.1
Total	\$3.5	\$2.5	\$2.1	23	\$0.6

Economic impact of UOIT, 2017-18

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ontario					
Direct	\$225.1	\$180.2	\$152.9	1,695	\$41.5
Indirect	\$33.3	\$29.0	\$20.4	341	\$6.7
Induced	\$76.7	\$44.6	\$22.6	390	\$10.3
Total	\$335.1	\$253.8	\$196.0	2,426	\$58.4

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Durham Region					
Direct	\$149.7	\$120.2	\$99.1	1,115	\$27.6
Indirect	\$24.6	\$19.4	\$14.1	234	\$4.5
Induced	\$48.6	\$28.3	\$14.3	247	\$6.5
Total	\$222.9	\$167.8	\$127.6	1,596	\$38.6
Northumberland County					
Direct	\$2.6	\$2.0	\$1.8	18	\$0.5
Indirect	\$0.2	\$0.2	\$0.1	2	\$0.0
Induced	\$0.7	\$0.4	\$0.2	4	\$0.1
Total	\$3.5	\$2.6	\$2.2	24	\$0.6

Economic impact of UOIT, 2018-19

	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Ontario					
Direct	\$231.5	\$185.4	\$157.5	1,725	\$42.6
Indirect	\$34.1	\$30.0	\$20.9	349	\$6.8
Induced	\$78.8	\$45.8	\$23.2	400	\$10.5
Total	\$344.4	\$260.8	\$201.6	2,474	\$60.0
Durham Region					
Direct	\$153.8	\$123.5	\$102.1	1,135	\$28.4
Indirect	\$25.2	\$19.8	\$14.2	240	\$4.6
Induced	\$49.9	\$29.0	\$14.7	253	\$6.7
Total	\$229.0	\$172.3	\$131.2	1,627	\$39.6



	Spending (millions)	GDP (millions)	Wages and salaries (millions)	Employment (FTEs)	Government revenues (millions)
Northumberland County					
Direct	\$2.6	\$2.0	\$1.9	18	\$0.5
Indirect	\$0.2	\$0.2	\$0.1	2	\$0.0
Induced	\$0.8	\$0.4	\$0.2	4	\$0.1
Total	\$3.6	\$2.7	\$2.2	24	\$0.6

Appendix C
UOIT Economic Impact
Detailed Tables by Jurisdiction

Ontario
2014-2015

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	183,330.3	149,270.6	125,214.9	1,409.6	34,332.2
Indirect	25,495.4	21,008.4	15,215.6	253.9	4,831.9
Induced	57,918.4	34,379.5	16,482.2	285.8	7,907.3
TOTAL	266,744.1	204,658.5	156,912.7	1,949.3	47,071.4

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	148,650.1	126,626.1	109,124.4	1,135.8	29,124.0
Indirect	17,542.3	12,323.9	9,714.2	156.1	2,834.5
Induced	49,609.6	29,448.5	14,117.6	244.9	6,773.1
TOTAL	215,802.0	168,398.5	132,956.3	1,536.7	38,731.6

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	34,680.2	22,644.5	16,090.5	273.8	5,208.2
Indirect	7,953.2	8,684.5	5,501.4	97.8	1,997.4
Induced	8,308.8	4,931.1	2,364.5	40.9	1,134.2
TOTAL	50,942.2	36,260.0	23,956.4	412.6	8,339.8

Ontario
2015-16 to 2019-2020 Forecast

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	1,100,684.6	887,491.2	752,932.5	1,652.3	204,123.0
Indirect	159,630.8	137,330.6	97,179.4	324.9	31,586.0
Induced	367,752.1	215,340.1	107,250.4	370.1	49,528.2
TOTAL	1,628,067.4	1,240,161.9	957,362.3	2,347.2	285,237.2

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	830,023.4	715,114.0	623,030.4	1,215.0	164,476.2
Indirect	93,509.6	64,817.3	50,818.6	163.7	14,908.0
Induced	290,526.4	169,714.8	85,149.6	294.1	39,034.4
TOTAL	1,214,059.5	949,646.2	758,998.6	1,672.8	218,418.6

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	270,661.1	172,377.2	129,902.1	437.3	39,646.8
Indirect	66,121.2	72,513.3	46,360.8	161.1	16,678.1
Induced	77,225.6	45,625.2	22,100.8	76.0	10,493.8
TOTAL	414,008.0	290,515.7	198,363.7	674.5	66,818.6

Durham Region
2014-2015

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	124,042.5	101,590.1	82,323.1	945.0	23,365.7
Indirect	19,582.5	14,873.1	11,183.3	185.0	3,420.8
Induced	37,384.6	22,190.9	10,638.8	184.5	5,103.9
TOTAL	181,009.7	138,654.0	104,145.1	1,314.4	31,890.4

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	91,646.8	84,459.5	70,823.3	729.2	19,425.7
Indirect	11,265.7	8,004.9	6,865.2	106.6	1,841.1
Induced	31,649.1	18,787.0	9,006.5	156.2	4,321.0
TOTAL	134,561.6	111,251.4	86,695.0	992.0	25,587.8

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	32,395.7	17,130.5	11,499.8	215.8	3,940.0
Indirect	8,316.8	6,868.2	4,318.1	78.4	1,579.7
Induced	5,735.5	3,403.9	1,632.2	28.3	782.9
TOTAL	46,448.1	27,402.6	17,450.1	322.5	6,302.6

Durham Region
2015-16 to 2019-2020 Forecast

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	734,649.7	594,046.9	489,782.2	1,092.9	136,630.8
Indirect	131,996.6	93,025.2	68,015.6	226.3	21,395.8
Induced	233,718.3	136,876.7	68,139.8	235.1	31,481.6
TOTAL	1,100,364.6	823,948.8	625,937.5	1,554.3	189,508.2

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	494,010.4	473,639.6	403,543.2	775.7	108,937.1
Indirect	57,415.8	41,437.7	35,396.4	110.0	9,530.7
Induced	185,242.3	108,241.9	54,260.8	187.4	24,895.6
TOTAL	736,668.5	623,319.1	493,200.4	1,073.1	143,363.4

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	240,639.3	120,407.4	86,239.0	317.2	27,693.7
Indirect	61,913.5	51,587.5	32,619.2	116.3	11,865.1
Induced	48,476.0	28,634.8	13,879.0	47.7	6,586.0
TOTAL	351,028.8	200,629.7	132,737.2	481.2	46,144.8

Northumberland County
2014-2015

<u>TOTAL</u>	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	2,109.0	1,664.1	1,519.1	15.7	382.7
Indirect	251.2	126.6	91.7	1.5	29.1
Induced	592.6	351.8	165.6	2.9	80.9
TOTAL	2,952.8	2,142.4	1,776.4	20.2	492.8

<u>University</u>	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	1,643.6	1,469.2	1,363.7	13.5	337.9
Indirect	97.9	74.3	58.5	0.9	17.1
Induced	536.9	318.7	152.8	2.6	73.3
TOTAL	2,278.4	1,862.1	1,575.0	17.1	428.3

<u>Third party</u>	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	465.4	194.9	155.4	2.2	44.8
Indirect	63.2	52.3	33.1	0.6	12.0
Induced	55.7	33.1	12.8	0.3	7.6
TOTAL	584.3	280.3	201.4	3.1	64.5

Northumberland County
2015-16 to 2019-2020 Forecast

<u>TOTAL</u>	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	12,582.8	9,810.0	8,999.2	17.7	2,256.3
Indirect	1,133.2	827.5	585.6	2.0	190.3
Induced	3,470.6	1,991.9	992.0	3.4	458.1
TOTAL	17,186.6	12,629.3	10,576.8	23.1	2,904.8

<u>University</u>	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	8,987.1	8,430.1	7,875.2	14.5	1,938.9
Indirect	506.4	390.6	306.2	1.0	89.8
Induced	3,138.2	1,794.8	897.5	3.1	412.8
TOTAL	12,631.7	10,615.5	9,078.9	18.6	2,441.6

<u>Third party</u>	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	3,595.7	1,379.9	1,124.0	3.2	317.4
Indirect	522.2	436.9	279.3	1.0	100.5
Induced	397.2	233.5	81.3	0.4	53.7
TOTAL	4,515.1	2,050.4	1,484.6	4.6	471.6

Oshawa
2014-2015

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	43,982.4	35,144.4	30,674.8	328.9	8,083.2
Indirect	4,088.2	3,208.0	2,269.6	38.7	737.8
Induced	13,377.5	7,940.7	3,806.9	66.0	1,826.4
TOTAL	61,448.1	46,293.1	36,751.3	433.6	10,647.4

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	33,590.6	30,285.1	27,121.8	270.2	6,965.6
Indirect	2,005.3	1,499.4	1,202.2	19.2	344.9
Induced	11,643.7	6,911.7	3,313.5	57.5	1,589.7
TOTAL	47,239.6	38,696.2	31,637.5	346.9	8,900.1

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	10,391.8	4,859.3	3,553.1	58.7	1,117.6
Indirect	2,082.9	1,708.6	1,067.3	19.5	393.0
Induced	1,733.8	1,029.0	493.4	8.5	236.7
TOTAL	14,208.5	7,596.9	5,113.8	86.7	1,747.3

Oshawa
2015-16 to 2019-2020 Forecast

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	260,523.7	205,372.6	181,185.2	370.8	47,235.7
Indirect	28,453.7	20,631.7	14,301.1	48.8	4,745.3
Induced	83,107.6	48,671.8	24,229.6	83.6	11,194.5
TOTAL	372,085.0	274,676.1	219,716.0	503.2	63,175.5

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	182,619.6	172,273.6	156,012.6	288.3	39,622.9
Indirect	10,203.8	7,740.7	6,190.5	19.8	1,780.4
Induced	69,272.7	40,510.6	20,257.1	69.9	9,317.4
TOTAL	262,096.2	220,524.9	182,460.3	378.1	50,720.7

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	77,904.1	33,099.0	25,172.6	82.4	7,612.8
Indirect	15,550.1	12,891.0	8,110.6	29.0	2,964.9
Induced	13,834.9	8,161.2	3,972.5	13.7	1,877.1
TOTAL	107,289.0	54,151.2	37,255.7	125.1	12,454.8

Ajax
2014-2015

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	14,881.4	12,664.7	9,068.7	116.7	2,912.9
Indirect	4,075.5	2,958.1	2,356.9	38.0	680.4
Induced	4,495.1	2,668.2	1,279.2	22.2	613.7
TOTAL	23,452.0	18,291.0	12,704.8	176.9	4,206.9

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	10,399.5	9,948.9	7,403.8	81.1	2,288.3
Indirect	2,532.4	1,686.2	1,559.6	23.5	387.8
Induced	3,622.2	2,150.2	1,030.8	17.9	494.5
TOTAL	16,554.1	13,785.3	9,994.2	122.5	3,170.6

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	4,481.9	2,715.8	1,664.8	35.6	624.6
Indirect	1,543.1	1,271.9	797.3	14.5	292.5
Induced	872.9	518.0	248.4	4.3	119.1
TOTAL	6,897.9	4,505.7	2,710.6	54.4	1,036.3

Ajax
2015-16 to 2019-2020 Forecast

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	88,117.1	74,129.5	54,669.4	140.2	17,049.8
Indirect	26,625.7	17,980.5	13,859.1	45.2	4,135.5
Induced	28,319.5	16,584.8	8,257.0	28.5	3,814.5
TOTAL	143,062.3	108,694.8	76,785.5	213.9	24,999.8

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	55,212.0	54,466.5	41,383.6	85.8	12,527.3
Indirect	12,883.7	8,719.6	8,027.0	24.2	2,005.5
Induced	20,549.2	11,988.7	6,038.8	20.9	2,757.4
TOTAL	88,644.9	75,174.7	55,449.3	130.9	17,290.2

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	32,905.1	19,663.0	13,285.8	54.4	4,522.5
Indirect	11,137.3	9,260.9	5,832.1	20.9	2,130.0
Induced	7,770.3	4,596.2	2,218.2	7.6	1,057.1
TOTAL	51,812.8	33,520.1	21,336.2	83.0	7,709.6

Brock
2014-2015

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	801.6	736.4	396.6	6.7	169.4
Indirect	240.4	182.2	135.5	2.2	41.9
Induced	191.2	113.5	54.4	0.9	26.1
TOTAL	1,233.2	1,032.2	586.5	9.8	237.4

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	492.4	515.0	274.5	3.6	118.4
Indirect	129.3	91.2	78.4	1.2	21.0
Induced	132.5	78.7	37.7	0.7	18.1
TOTAL	754.3	684.9	390.6	5.5	157.5

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	309.2	221.4	122.1	3.0	50.9
Indirect	111.1	91.0	57.1	1.0	20.9
Induced	58.7	34.8	16.7	0.3	8.0
TOTAL	478.9	347.3	195.9	4.3	79.9

Brock
2015-16 to 2019-2020 Forecast

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	4,744.2	4,318.5	2,479.4	8.6	993.3
Indirect	1,895.3	1,364.6	973.9	3.2	313.9
Induced	1,320.3	774.1	384.0	1.3	178.0
TOTAL	7,959.9	6,457.3	3,837.3	13.1	1,485.2

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	2,512.7	2,665.7	1,429.3	3.8	613.1
Indirect	658.8	472.2	404.1	1.3	108.6
Induced	694.9	403.7	206.0	0.7	92.8
TOTAL	3,866.3	3,541.6	2,039.4	5.8	814.6

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	2,231.6	1,652.8	1,050.1	4.8	380.1
Indirect	1,072.5	892.5	569.8	2.0	205.3
Induced	625.4	370.5	178.0	0.6	85.2
TOTAL	3,929.5	2,915.7	1,797.9	7.4	670.6

Clarington
2014-2015

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	16,611.4	13,644.0	10,957.8	126.8	3,138.1
Indirect	2,358.1	1,864.3	1,315.5	22.3	428.8
Induced	4,913.1	2,916.3	1,398.1	24.2	670.8
TOTAL	23,882.6	18,424.6	13,671.4	173.4	4,237.7

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	12,223.9	11,295.4	9,394.2	97.1	2,597.9
Indirect	1,208.5	919.2	722.9	11.6	211.4
Induced	4,130.0	2,451.6	1,175.3	20.4	563.9
TOTAL	17,562.4	14,666.2	11,292.3	129.1	3,373.2

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	4,387.5	2,348.6	1,563.6	29.7	540.2
Indirect	1,149.5	945.1	592.6	10.7	217.4
Induced	783.1	464.8	222.9	3.9	106.9
TOTAL	6,320.1	3,758.5	2,379.0	44.3	864.4

Clarington
2015-16 to 2019-2020 Forecast

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	98,380.5	79,789.2	65,252.4	147.1	18,351.5
Indirect	16,512.7	12,066.1	8,350.7	28.4	2,775.2
Induced	30,904.9	18,102.1	9,007.4	31.1	4,163.5
TOTAL	145,798.1	109,957.4	82,610.5	206.6	25,290.2

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	65,821.6	63,233.8	53,460.8	103.3	14,543.8
Indirect	6,179.1	4,769.7	3,739.7	12.0	1,097.0
Induced	24,185.9	14,132.6	7,084.4	24.5	3,250.5
TOTAL	96,186.6	82,136.1	64,284.9	139.8	18,891.3

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	32,558.9	16,555.4	11,791.6	43.8	3,807.7
Indirect	8,781.7	7,296.4	4,610.9	16.4	1,678.2
Induced	6,719.0	3,969.5	1,923.0	6.6	913.0
TOTAL	48,059.6	27,821.4	18,325.6	66.8	6,398.9

Pickering
2014-2015

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	10,163.2	8,812.3	5,917.4	80.8	2,026.8
Indirect	3,370.1	2,478.4	1,961.5	31.7	570.0
Induced	3,028.7	1,797.8	861.9	14.9	413.5
TOTAL	16,562.0	13,088.5	8,740.8	127.5	3,010.4

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	6,898.8	6,731.8	4,682.9	53.2	1,548.3
Indirect	2,119.0	1,439.7	1,305.7	19.8	331.1
Induced	2,377.2	1,411.2	676.5	11.7	324.6
TOTAL	11,394.9	9,582.6	6,665.1	84.8	2,204.0

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	3,264.4	2,080.5	1,234.5	27.6	478.5
Indirect	1,251.1	1,038.7	655.8	11.9	238.9
Induced	651.5	386.6	185.4	3.2	88.9
TOTAL	5,167.0	3,505.9	2,075.7	42.7	806.4

Pickering
2015-16 to 2019-2020 Forecast

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	60,172.8	51,604.6	35,938.4	98.9	11,869.1
Indirect	22,083.5	15,100.0	11,573.7	37.8	3,473.0
Induced	19,207.8	11,249.3	5,599.8	19.3	2,587.3
TOTAL	101,464.2	77,953.9	53,111.9	156.0	17,929.4

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	36,321.0	36,392.4	25,860.1	56.1	8,370.2
Indirect	10,787.3	7,448.3	6,723.6	20.5	1,713.1
Induced	13,271.2	7,736.2	3,906.7	13.5	1,779.3
TOTAL	60,379.6	51,576.9	36,490.4	90.1	11,862.7

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	23,851.8	15,212.2	10,078.3	42.8	3,498.8
Indirect	9,148.0	7,651.7	4,850.0	17.3	1,759.9
Induced	5,936.6	3,513.1	1,693.1	5.8	808.0
TOTAL	38,936.5	26,377.0	16,621.5	65.9	6,066.7

Scugog
2014-2015

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	4,771.3	3,887.0	3,201.6	36.2	894.0
Indirect	538.6	424.0	303.8	5.1	97.5
Induced	1,391.3	825.8	395.9	6.9	189.9
TOTAL	6,701.3	5,136.9	3,901.3	48.2	1,181.5

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	3,551.1	3,256.7	2,771.7	28.3	749.0
Indirect	280.2	210.4	168.8	2.7	48.4
Induced	1,190.0	706.4	338.6	5.9	162.5
TOTAL	5,021.3	4,173.5	3,279.1	36.9	959.9

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	1,220.3	630.3	430.0	7.9	145.0
Indirect	258.4	213.6	135.0	2.4	49.1
Induced	201.3	119.5	57.3	1.0	27.5
TOTAL	1,680.0	963.3	622.2	11.3	221.6

Scugog
2015-16 to 2019-2020 Forecast

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	28,259.4	22,726.1	19,017.1	41.6	5,227.0
Indirect	4,002.7	2,939.2	2,052.7	6.9	676.0
Induced	8,755.2	5,128.1	2,551.9	8.8	1,179.5
TOTAL	41,017.3	30,793.4	23,621.7	57.3	7,082.5

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	19,178.2	18,320.9	15,827.4	30.2	4,213.8
Indirect	1,427.3	1,087.4	870.3	2.8	250.1
Induced	7,015.4	4,100.7	2,053.4	7.1	943.2
TOTAL	27,620.9	23,509.1	18,751.1	40.0	5,407.1

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	9,081.2	4,405.2	3,189.7	11.5	1,013.2
Indirect	2,216.6	1,851.8	1,182.5	4.1	425.9
Induced	1,739.7	1,027.3	498.4	1.7	236.3
TOTAL	13,037.6	7,284.3	4,870.6	17.3	1,675.4

Uxbridge
2014-2015

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	2,155.4	1,895.1	1,210.6	17.3	435.9
Indirect	626.9	486.2	362.0	6.0	111.8
Induced	586.6	348.2	166.9	2.9	80.1
TOTAL	3,368.9	2,729.5	1,739.5	26.2	627.8

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	1,430.4	1,417.6	933.1	10.9	326.0
Indirect	384.3	284.4	234.0	3.7	65.4
Induced	451.6	268.1	128.5	2.2	61.7
TOTAL	2,266.2	1,970.1	1,295.6	16.9	453.1

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	725.0	477.5	277.5	6.4	109.8
Indirect	242.6	201.8	128.0	2.3	46.4
Induced	135.0	80.1	38.4	0.7	18.4
TOTAL	1,102.6	759.5	443.9	9.4	174.7

Uxbridge
2015-16 to 2019-2020 Forecast

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	12,760.3	11,101.5	7,397.1	21.5	2,553.3
Indirect	4,323.1	3,114.8	2,256.6	7.5	716.4
Induced	3,792.4	2,221.6	1,105.1	3.8	511.0
TOTAL	20,875.8	16,437.8	10,758.8	32.8	3,780.7

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	7,480.1	7,588.6	5,098.1	11.5	1,745.4
Indirect	1,964.4	1,476.8	1,210.3	3.8	339.7
Induced	2,501.1	1,457.3	737.0	2.5	335.2
TOTAL	11,945.7	10,522.7	7,045.5	17.9	2,420.2

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	5,280.2	3,512.9	2,298.9	10.0	808.0
Indirect	1,953.4	1,638.0	1,046.3	3.7	376.7
Induced	1,291.2	764.3	368.1	1.3	175.8
TOTAL	8,524.8	5,915.1	3,713.3	14.9	1,360.5

Whitby
2014-2015

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	30,675.7	24,806.1	20,895.6	231.5	5,705.4
Indirect	4,285.2	3,272.2	2,478.9	40.8	752.6
Induced	9,401.2	5,580.4	2,675.3	46.4	1,283.5
TOTAL	44,362.1	33,658.7	26,049.8	318.7	7,741.5

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	23,060.2	21,009.0	18,241.4	184.5	4,832.1
Indirect	2,607.2	1,874.8	1,593.9	24.8	431.2
Induced	8,101.8	4,809.2	2,305.6	40.0	1,106.1
TOTAL	33,769.2	27,693.0	22,140.9	249.4	6,369.4

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Employment (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	7,615.5	3,797.1	2,654.2	46.9	873.3
Indirect	1,678.0	1,397.4	884.9	16.0	321.4
Induced	1,299.4	771.2	369.8	6.4	177.4
TOTAL	10,592.9	5,965.6	3,908.9	69.4	1,372.1

Whitby
2015-16 to 2019-2020 Forecast

TOTAL	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	181,691.6	145,004.9	123,843.1	264.2	33,351.1
Indirect	28,099.8	19,828.2	14,647.8	1,212.3	4,560.5
Induced	58,310.6	34,144.9	17,004.9	58.7	7,853.3
TOTAL	268,102.1	198,978.1	155,495.8	1,535.2	45,765.0

University	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	124,865.3	118,698.1	104,471.1	196.6	27,300.6
Indirect	13,311.2	9,723.0	8,230.9	25.7	2,236.3
Induced	47,751.7	27,912.2	13,977.3	48.3	6,419.8
TOTAL	185,928.2	156,333.3	126,679.4	270.6	35,956.6

Third party	Spending (2015\$, Thousands)	GDP (2015\$, Thousands)	Wages and salaries (2015\$, Thousands)	Average Employment/Year (# of FTEs)	Tax revenues (2015\$, Thousands)
Direct	56,826.4	26,306.8	19,371.9	67.6	6,050.6
Indirect	12,053.8	10,105.2	6,416.9	22.9	2,324.2
Induced	10,558.8	6,232.8	3,027.6	10.4	1,433.5
TOTAL	79,439.0	42,644.8	28,816.4	100.9	9,808.3