BILLY BISHOP TORONTO CITY AIRPORT

2017 Economic Impact Study

FINAL REPORT

Prepared for Ports Toronto
Prepared by InterVISTAS Consulting Inc.
6 October 2017

InterVISTAS
a company of Royal HaskoningDHV

Executive Summary

Billy Bishop Toronto City Airport (BBTCA) contributes significantly to employment and economic development in both the local community and throughout the Province of Ontario. This study examines the current economic impacts generated from the airport's operations, based on a review of the business in 2017.

Economic impact is a measure of the spending and employment associated with a sector of the economy, a specific project, or a change in government policy or regulation. In this case, economic impact refers to the economic contribution associated with the ongoing activities of BBTCA. The three major components of economic impact are classified as *direct, indirect and induced impacts*.[1] Together, they provide a snapshot of how the operations of the airport can impact the local and provincial economy.

BBTCA is an economic generator for the community of Toronto and Ontario. The airport's impact is reflected in the 2,080 direct jobs, equivalent to over 1,950 direct full-time equivalents (FTEs)[2] of employment that are supported or facilitated by the airport and nearly $130 million in direct wages paid. Including indirect and induced impacts, BBTCA generated a total of 4,740 total jobs and nearly $280 million in total wages throughout the province in 2017.

The economic impact of Billy Bishop Toronto City Airport includes 2,080 direct jobs of employment and $130 million in direct wages in 2017.

Photo credit: www.zasa.com

[1] Direct impacts account for the economic activity of the target sector itself. Indirect impacts are those that result because of the direct impacts, which involve employment in downstream industries that arise from the presence of BBTCA. Induced employment is generated from expenditures by individuals employed directly or indirectly by the airport.

[2] FTE = full-time equivalent of employment. For purposes of this study, one full-time equivalent of employment corresponds to 1,832 hours of work annually. See **Appendix C** for further details.

Ongoing Economic Impacts

The current economic impact of Billy Bishop Toronto City Airport, which includes the impact related to the airport's ongoing operations, is summarized in **Figure ES-1**.[3] *Direct* economic impact measures the employment and economic impact directly associated with the operations of the airport. This includes employment of all tenants located at BBTCA and also relevant employment of firms that are located off airport. *Indirect* and *induced* impacts are multiplier impacts in the wider economy stimulated by the airport's activities (e.g., other businesses that supply goods and services to the airport and spending by airport employees). The multiplier impacts are derived from Statistics Canada economic multipliers and ratios for Ontario for 2013.[4] Emphasis is placed on the direct economic impacts as these are based on data from the employer survey and are clearly identifiable.

The *direct* impacts of BBTCA in 2017 are estimated to be 2,080 jobs, equal to 1,950 *direct* FTEs or person years of employment, earning approximately $130 million in *direct* wages. Direct employment generates $190 million in *direct* GDP and $670 million in *direct* economic output annually.

Ongoing Economic Impacts of BBTCA

Annual Direct Impacts:

- 2,080 jobs
- 1,950 full-time equivalents
- $130 million in wages
- $190 million in gross domestic product (GDP)
- $670 million in economic output

Total impacts are calculated by adding together the *direct, indirect* and *induced* impacts. Including indirect and induced multiplier impacts, current economic impacts of BBTCA include a *total* of 4,740 jobs or 4,450 FTEs. *Total* wage of all employees amounts to $280 million in wages. Furthermore, BBTCA's operations contributed an estimated $470 million and $1.2 billion in *total* GDP and *total* economic output, respectively, to the provincial economy.

[3] The results of this study are based on a review of 2017 operations.
[4] Multiplier impacts must be interpreted with caution since they may be illusory when the economy experiences high employment and output near industry capacity. The most current Statistics Canada multipliers and ratios for Ontario for Year 2013 are used in this study.

Figure ES-1:
Annual Total Ongoing Economic Impact of Billy Bishop Toronto City Airport Operations, 2017

Impact	Employment		Wages ($ Millions)	GDP ($ Millions)	Output ($ Millions)
	Jobs	FTEs			
Direct	2,080	1,950	130	190	670
Indirect	1,780	1,670	110	190	350
Induced	880	830	40	90	150
Total	**4,740**	**4,450**	**280**	**470**	**1,170**

Note: Totals may not sum due to rounding.

Annual Tax Contributions

Billy Bishop Toronto City Airport is also an important generator of taxation revenues to all levels of government. Total taxes paid on an annual basis, by airport employers and employees, are estimated at nearly $60 million per year, with the remaining $24 million paid by air passengers. The total estimated tax contribution of BBTCA amounts to roughly $6 million.

The majority of taxes accrue to the federal government at 55% overall, while the provincial government receives 37% of tax revenue generated by BBTCA. The municipal government also benefits from BBTCA through the collection of property taxes amounting to over $7 million paid by BBTCA and its tenants.

Figure ES-2 provides a summary of the taxes collected.

Annual Tax Impact of BBTCA

Total Tax Contribution:

- $90 million

Federal Government:

- $49 million (55% of total)

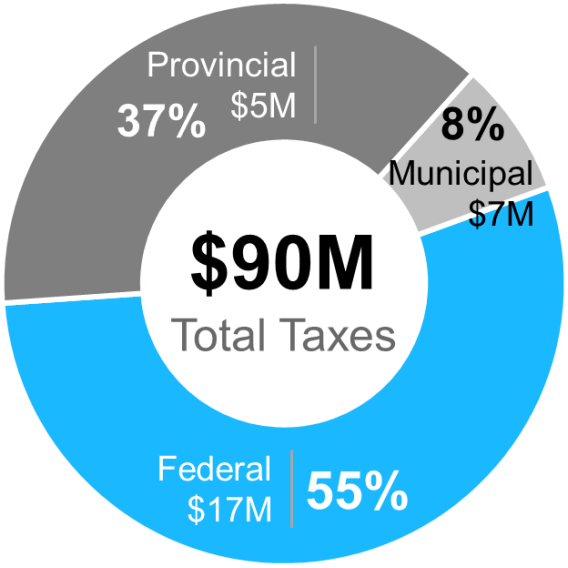
Provincial Government:

- $34 million (37% of total)

Municipal Government:

- $7 million (8% of total)

Figure ES-2:
Annual Estimated Tax Revenues of Billy Bishop Toronto City Airport by Level of Government

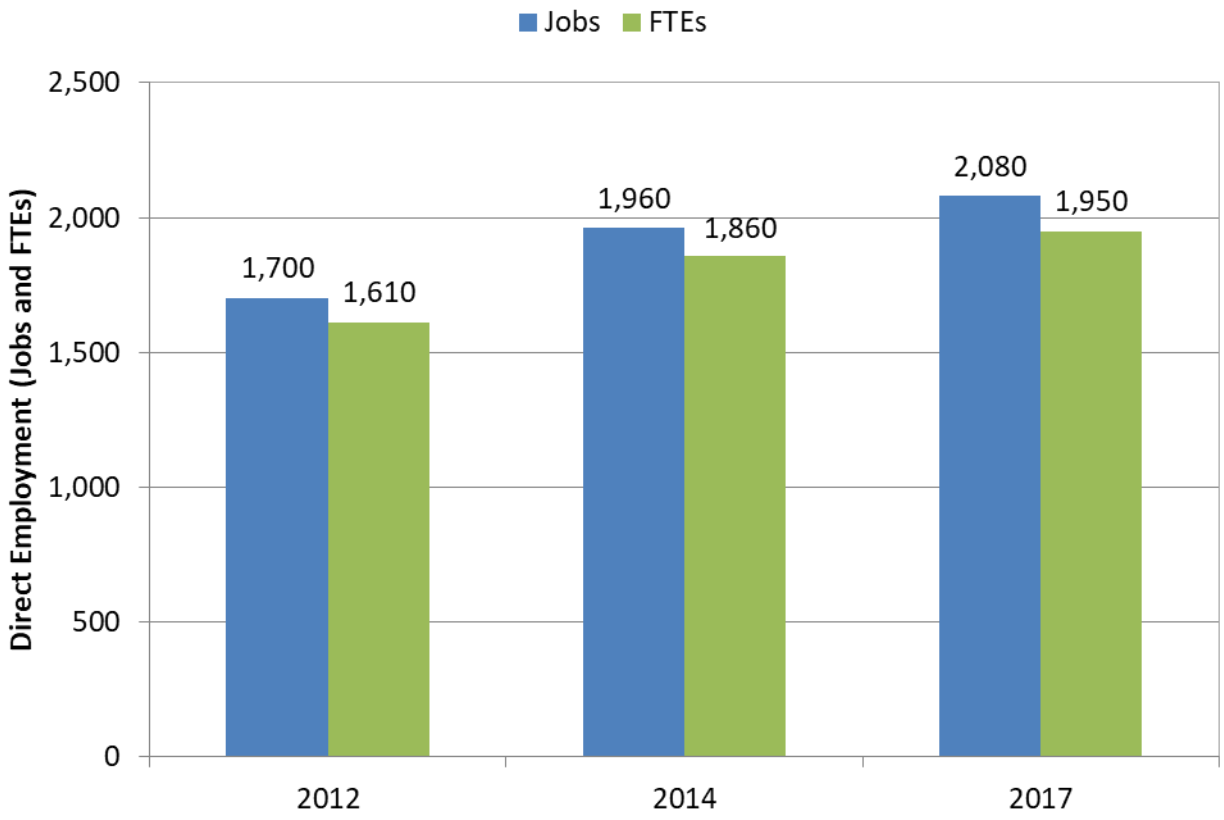


Note: Taxation impacts are based on 2016 tax rates. Total may not sum due to rounding.

Growth of Direct Employment at BBTCA

Economic impact studies were commissioned by Port Toronto in 2012, 2014 and 2017. Over the three time periods, there has been traffic growth at the airport from handling 2 million enplaned/deplaned passengers in 2012 to 2.7 million enplaned/deplaned passengers in 2016, up 35% over the past five year time frame. Correspondingly, direct employment at the airport has grown over 20% between 2012 and 2017, as shown in **Figure ES-3**.

Figure ES-3: Growth in Direct Employment at BBTCA



Contents

1 Introduction

Ports Toronto commissioned Inter*VISTAS* Consulting Inc. to conduct an economic impact study of its current operations at Billy Bishop Toronto City Airport (BBTCA) in Ontario. The information and analysis provided in this report serves as an update to the previous impact studies conducted in 2012 and 2014.

Airports make substantial contributions to regional economies. They facilitate the movement of people, goods, and services throughout the nation and the world, allowing the economy to operate more efficiently. Airports also provide vital links to economic opportunities locally and abroad. The airport and associated air transportation also serves to bring in tourists from the province and across Canada, as well as from the United States, who spend money on accommodation, food, entertainment and other items. BBTCA itself is a center of economic activity, supporting the activities necessary to provide passenger and cargo air travel.

Economic impact studies are a critical tool in communicating the importance and role of an airport and the local community. Toronto is home to 2.8 million people; it is the largest city in Canada and the fourth largest in North America.[5] Toronto has nearly 90,000 businesses in operation that have access to a skilled, diverse and multilingual workforce of 1.4 million people.[6] Toronto is Canada's financial centre, employing over 245,000 people, while the IT sector is also strong employing nearly 160,000 individuals.[7]

1.1 Billy Bishop Toronto City Airport

With its proximity to the city's downtown core, Billy Bishop Toronto City Airport provides links to business centres and destinations across North America. Through available air services, the airport has become a critical facilitator of the growth of trade and tourism between Toronto and North American centres. In 2014, the airport celebrated the 75th anniversary of commercial air service; the airport has grown over those 75 years to service over 2.7 million passengers annually in 2016.[8]

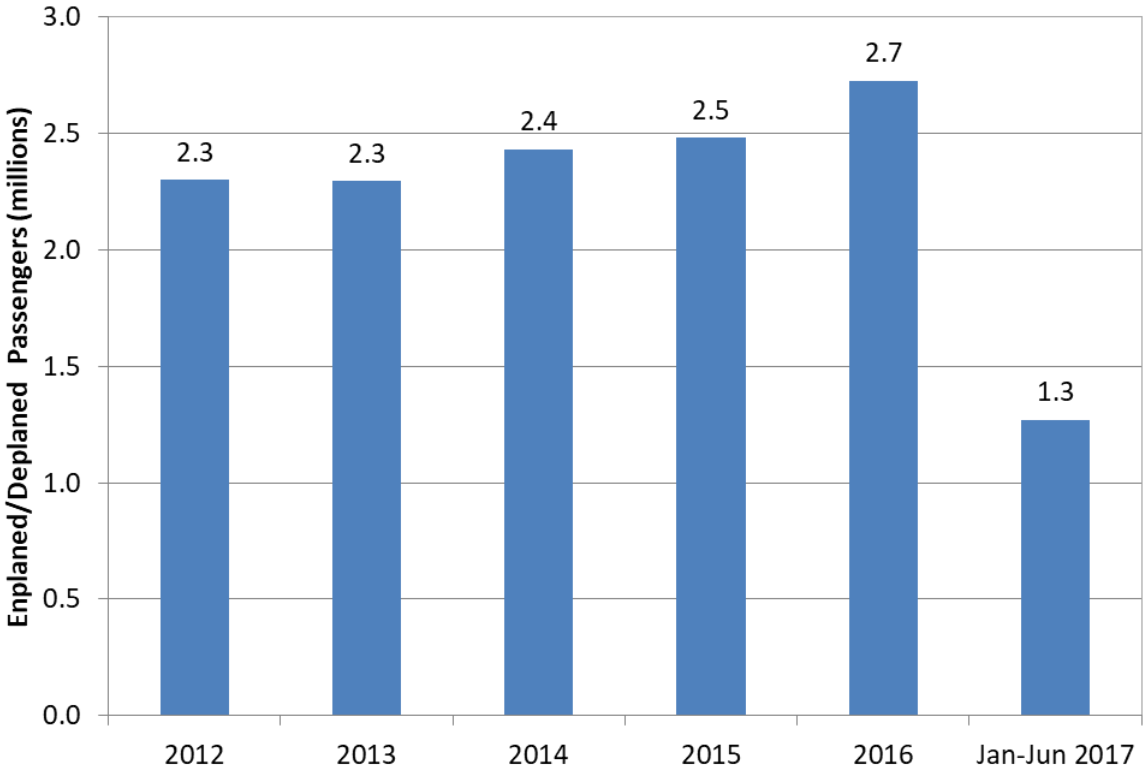
BBTCA offers air service to over 20 cities in Canada and the United States, and connections to 80 destinations around the world. Porter Airlines has served the airport since 2006, and offers service to 20 cities in Canada and the United States, including Ottawa, Montréal, New York, Boston, Chicago and Washington, D.C. Since May 2011, Air Canada has provided service with flights to Montréal. BBTCA also supports air charter operations, general aviation, helicopter operations, flight training, air ambulance services, maintenance and repair services, airborne sensing and sightseeing tours. It is the ninth busiest airport in Canada and has been recognized by Sktrax in 2016 (as well as in previous years) as one of the best small airports in the world. In March 2017, the airport was named the "Best Airport in North America" by Airports Council International's 2016 Airport Service Quality Awards. [9]

[5] Source: Toronto City Hall (https://www1.toronto.ca/wps/portal/contentonly?vgnextoid=41e067b42d853410VgnVCM10000071d60f89RCRD&vgnextchannel=57a12cc817453410VgnVCM10000071d60f89RCRD)
[6] Ibid.
[7] Ibid.
[8] Billy Bishop Toronto City Airport, Ports Toronto, https://www.portstoronto.com/airport.aspx
[9] Billy Bishop Toronto City Airport, Ports Toronto, https://www.portstoronto.com/airport.aspx

1.2 Passenger Traffic

The convenience and accessibility of Billy Bishop Toronto City Airport, coupled with its air services to major business and financial centres, make the airport an attractive choice for travellers. Approximately 2.7 million passengers travelled via the airport in 2016.[10] **Figure 1-1** illustrates the volume of passenger traffic at BBTCA at between 2013 and the first six months of 2017. Passenger volume hit a high of 2.7 million in 2016 at the airport.

Figure 1-1:
Total Enplaned/Deplaned Passenger Traffic at BBTCA, 2013-YTD2017



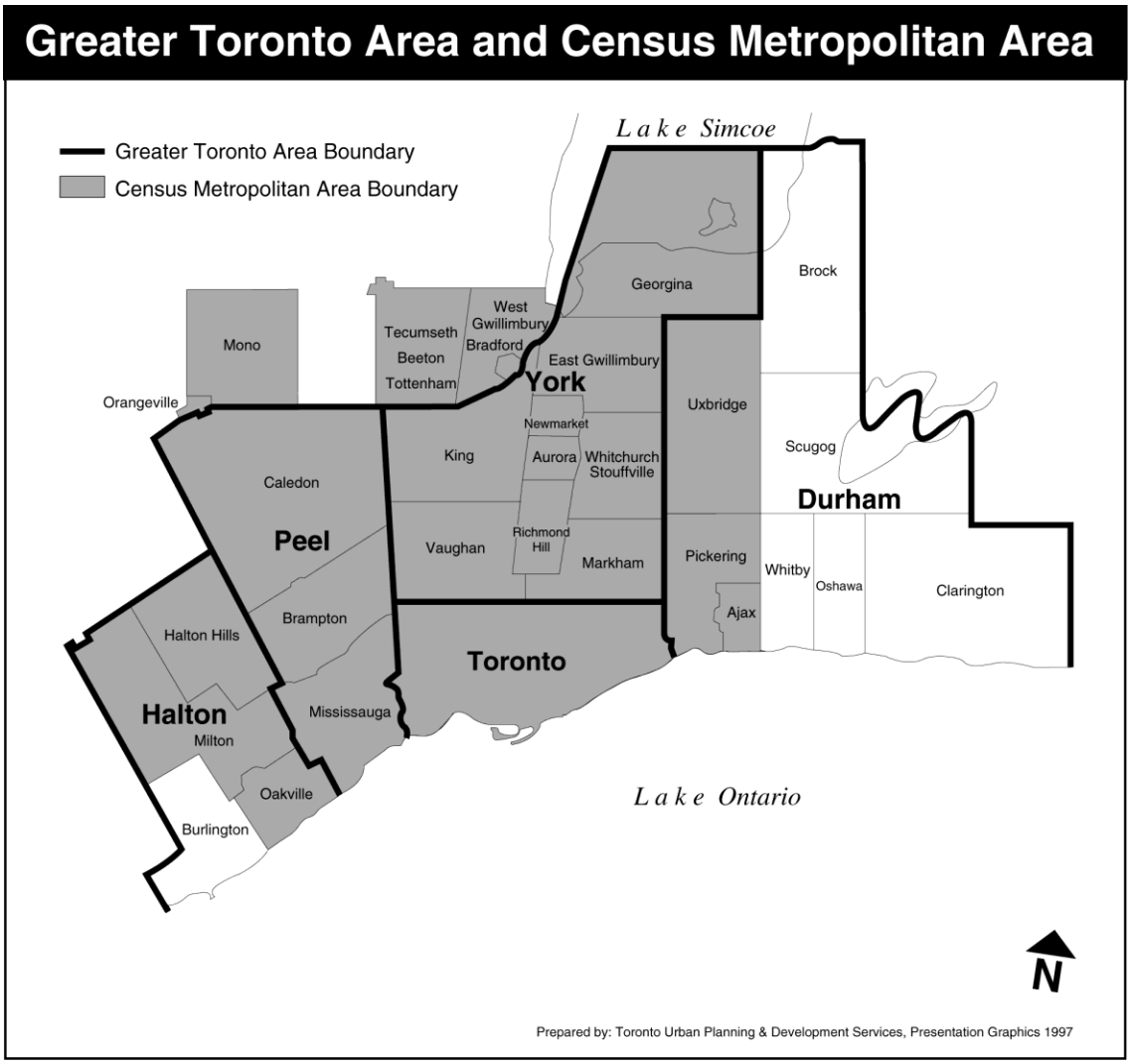
Source: Ports Toronto.

[10] Passenger traffic figures include connecting passengers.

1.3 Local and Provincial Industry and Economy

In 2016, the Toronto metropolitan area had a population of approximately 6.2 million people (the largest in Canada), while the city itself had a population of approximately 2.8 million people. The total labour force of Toronto amounts to over 1.4 million people (one sixth of the country's workforce), with the top industries in Toronto including financial services, business & professional services, education, aerospace, fashion, film & television, food & beverage, design, technology, green and life sciences, and tourism. The median income for all employment in Toronto amounted to $75,270 per annum in 2014.[11]

Figure 1-2: Map of Metropolitan Toronto Area



Source: City of Toronto website.

[11] Statistics Canada, Population of census metropolitan areas and City of Toronto, Toronto Facts.

The City of Toronto is recognized as the business capital of Canada, and ranks among the top financial centres in the world. Many leading companies and institutions have their corporate headquarters in Toronto. The City of Toronto achieved GDP equivalent to $168 billion in 2016, comprising approximately 10% of Canada's national GDP.[12]

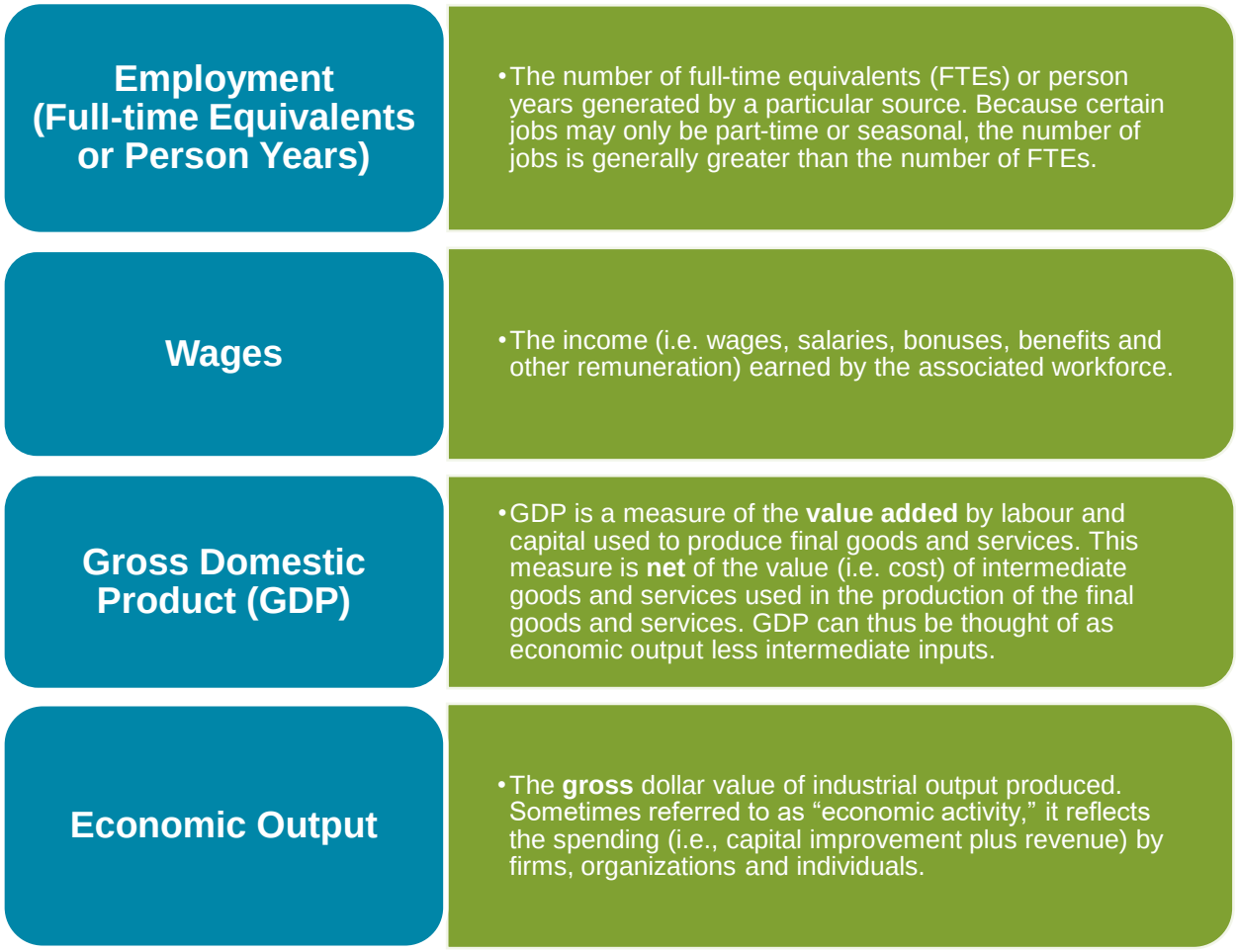
1.4 What is Economic Impact?

Economic impact is a measure of the spending and employment associated with a sector of the economy, a specific project (e.g. the construction of new infrastructure), or a change in government policy or regulation. In this case, economic impact refers to the economic contribution associated with the ongoing operations and activities of Billy Bishop Toronto City Airport by its tenants and related firms operating off-site.

Economic impact can be measured in several ways including employment, income, Gross Domestic Product (GDP) and economic output, as summarized in **Figure 1-3**. All of these measures help quantify the gross level of economic activity being generated by the source. As a result, they can be useful in developing an appreciation for projects, investments and economic sectors.[13]

[12] City of Toronto website, General Economic Statistics.
[13] Economic impact is different from a cost-benefit analysis that weighs benefits against costs.

Figure 1-3:
Measures of Economic Impact



The two most common measures of economic contribution (in addition to employment) are gross domestic product (GDP) and economic output. GDP a measure of the value added by labour and capital services used to produce final goods and services, as a result of economic activity in the nation. This measure is net of the value of intermediate goods and services used up to produce the final goods and services. Economic output is the dollar value of industrial output produced and roughly corresponds to the gross revenue of goods or services produced by an economic sector. As such, GDP removes the revenues to suppliers of intermediate goods and services and only includes the revenues from value-added production. Alternatively, economic output adds all revenues at each stage of production together as a measure of total production in the economy. Economic output will always be greater than GDP (also termed value-added).[14] In service industries and the public sector, economic output is often simplified to equate to total wages paid.

[14] In some industries such as urban transit, which is highly subsidized by government, GDP may be greater than economic output.

To estimate economic output for a sector, one might add up the gross revenues of the various firms in that sector. However, to find GDP for a sector, care must be taken to avoid double-counting. The revenues of one firm providing service to another are not incremental GDP. For example, in the automobile sector, one cannot add the value (gross revenue) of a finished auto to the value of the tires. The tires are already included in the value of the automobile.

1.5 Categories of Economic Impact

The three major components of economic impact are *direct, indirect, and induced impacts*, as described in the sections below. These distinctions are used as a base for the estimation of the total economic impact of Billy Bishop Toronto City Airport. Each of these three components requires different tools of analysis. Employment impact analysis determines the economic impact in terms of jobs created and salaries and wages paid out. In the case of the airport, the direct, indirect, induced, and total numbers of person years created at the airport are examined to produce a snapshot in time of airport operations.

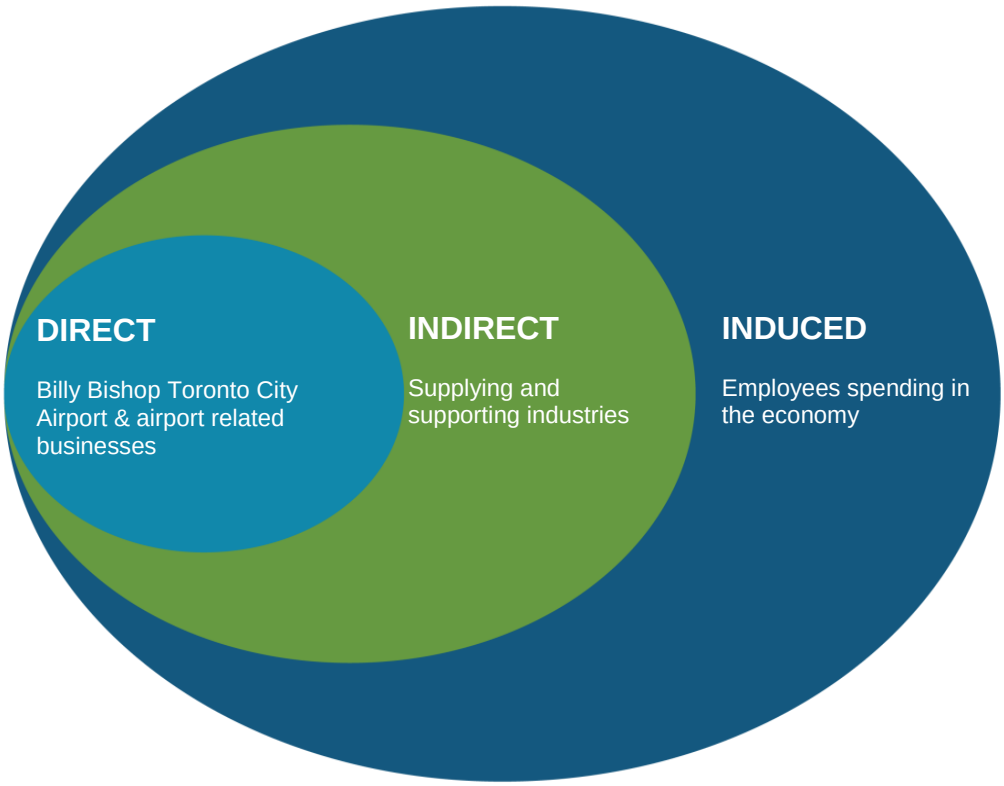
- **Direct** impacts account for the economic activity of the target sector itself. For instance, all employment that is directly related to the operation and management of BBTCA, including businesses located onsite at the airport as well as airport-dependent businesses located offsite, would be considered direct employment. Thus, the direct employment base includes airline employees, fixed base operators, aircraft maintenance, ground handling, customer service, and Ports Toronto staff, etc.

- **Indirect** impacts are those that result because of the direct impacts. This involves employment in downstream industries that arise from the presence of BBTCA. For instance, indirect employment includes the portion of employment in supplier industries which are dependent on sales to the air transport sector, e.g. food wholesalers that supply food for catering on flights.

- **Induced** impacts are generated from expenditures by individuals employed directly or indirectly by the airport. For instance, if an airline employee in Toronto decides to renovate her home, this would result in induced employment hours in the general economy as the renovation would support hours of employment in the construction industry, the construction materials industry, etc. Induced impact is often called the “household-spending effect”.

Total impacts are the sum of direct, indirect, and induced effects. These three categories of impacts are summarised in **Figure 1-4**.

Figure 1-5:
Categories of Economic Impact Generated and Facilitated by Billy Bishop Toronto City Airport



2 Methodology

The following chapter outlines the methodology used to estimate the economic impact of annual ongoing operations at Billy Bishop Toronto City Airport in 2017.

2.1 Introduction

Inter*VISTAS* conducted this economic impact study during the spring of 2017. The study estimates the economic impact of Billy Bishop Toronto City Airport's operations in 2017.

The study is based on data collected from an employment survey of all employers associated with the operation of BBTCA (e.g. airlines, ground transport firms, airport concessions, etc.) which is used as an input to assess the direct impacts of the airport's operations. The survey produced estimates of the number of people employed in directly-related occupations, as well as the total amount of earnings paid to these employees. The firms surveyed as part of this study are located on-site. The employment survey was used to classify the total employment and average wages paid by business type.

Inter*VISTAS* estimates the indirect and induced effects using economic multipliers developed by the Statistics Canada that are derived from models of the Canadian national and provincial economies. [15] Inter*VISTAS* utilizes a proprietary economic model in order to conduct multiplier analysis and estimate indirect and induced impacts.

Data collected from the employment survey is also used to calculate the associated tax impacts (government revenue) generated by the airport's operations.

Survey Response Rate

- **82%** of tenants responded to the survey
- **84%** of total direct full-time equivalents covered by the survey

Study Time Frame

- 2017 operations

Economic Multiplier Source

- Statistics Canada, Year 2013, released in June 2017

2.2 Estimating Current Economic Impact of Airport Operations

The direct employment base related to ongoing operations at BBTCA is measured first. Employment figures are generally more understandable by the public than more abstract measures, such as economic output or GDP. Employment figures also have the advantage of being a more accurate measure, both because the firms are more likely to provide data on employment, as opposed to information on revenues, wages and other monetary amounts, and because there is less chance of double counting economic activity.

[15] The multipliers used for the analysis are based on Statistics Canada economic multipliers for Ontario from the 2013 Interprovincial Input-Output model. These multipliers were updated with Consumer Price Indices to account for inflation. See **Appendix G** for more information on the Statistics Canada Multipliers used in this analysis.

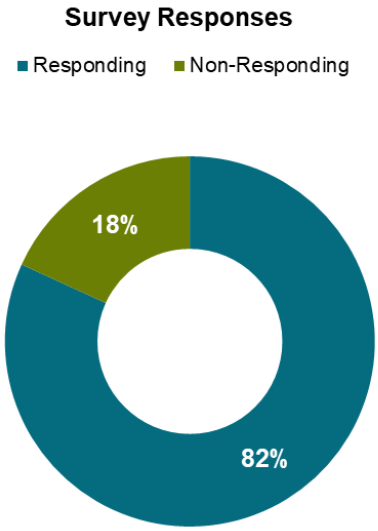
The economic impact study then assesses the indirect and induced (or "multiplier") employment supported by BBTCA's operations, as well as economic activity in terms of economic output and GDP using the Statistics Canada economic multipliers and ratios for Ontario that are representative of 2013.

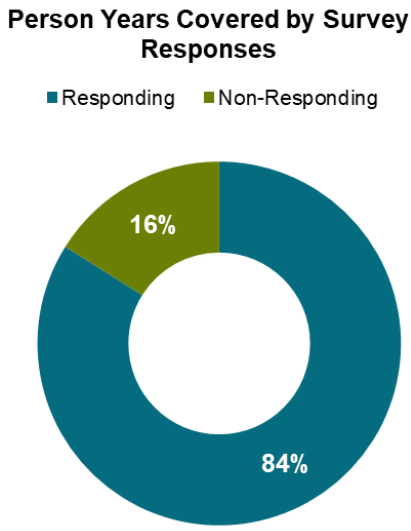
The tax revenue generated annually by operations at BBTCA is also estimated for 2017, based on tax rates for 2016.

2.3 Surveying Direct Employment

Employment attributable to ongoing Billy Bishop Toronto City Airport operations was measured by surveying all tenants. Specifics of the survey methodology, including questions and a description of the sampling techniques, are contained in **Appendix A**. E-mail and telephone follow-ups were conducted to ensure a strong response rate. In total, 82% of the businesses and organizations contacted responded to the survey, representing 84% of total FTEs or person years of employment covered by the survey. A summary of the survey response rate is provided in **Figure 2-1**.

Figure 2-1:
Response Rate for Billy Bishop Toronto City Airport Economic Impact Employment Survey





2.4 Inferring Employment

For non-responding firms, employment was conservatively estimated using a proven and accepted methodology.[16] This includes referencing the survey results for firms of similar business types and other public research, if available. Relevant surveys completed for prior study time periods were also consulted, if applicable.

2.5 Estimating Indirect and Induced Impacts using Economic Multipliers

Measurement of indirect and induced economic activity is difficult. While it might be possible to conduct a survey of downstream employers, the survey would need to cover thousands of firms in order to completely measure indirect employment. For induced employment, the entire economy would need to be scrutinised. In addition to the time and financial resources needed to conduct such surveys, the quality of responses would be suspect.

As an alternative to costly and inaccurate surveys, indirect and induced effects are typically measured by the use of *economic multipliers and ratios*.[17] Multipliers are derived from economic/statistical/accounting models of the general economy. They come in a variety of forms and differ greatly in definition and application. Thus, great care must be exercised in choosing the appropriate set of multipliers to use. In addition, the use of multiplier analysis is limited by a number of factors, these being:

- the accuracy of the structure and parameters of the underlying model;
- the level of unemployment in the economy;
- the assumption of constant returns to scale in production;
- the assumption that the economy's structure is static over time; and
- the assumption that there are no displacement effects.

Multiplier impacts must be interpreted with caution since they may be illusory when the economy experiences high employment and output near industry capacity. When they are reported, it is recommended that the reader be reminded of the limitations on the use of multipliers.

Mindful of these limitations, this study has undertaken multiplier analysis to estimate indirect and induced employment, with emphasis nonetheless placed on the direct economic impacts as these are based on data from the employer survey and are clearly identifiable.

[16] The methodology employed in this study to infer for non-respondents is similar to that used by the federal government for estimating the national income and product accounts.

[17] The multipliers used for the analysis are based on 2013 Statistics Canada economic multipliers and ratios for Ontario, the most recent data available. These multipliers were updated with Consumer Price Indices to account for inflation.

2.6 Study Time Frame

The employment survey was conducted between April and August 2017. The results in this report reflect employment and operations from 2017.

2.7 Jobs versus Full-Time Equivalents or Person Years

Traditionally, one measures employment by the number of jobs. However, when part-time and/or seasonal workers are used, this can be a misleading measure resulting in an overstatement of economic impact. Whenever possible, employment impacts are measured both in terms of the number of jobs and the number of full-time (FTE) equivalents, also called person years.[18] In our model, hours worked by part-time and/or seasonal employees are converted into FTEs.

2.8 Estimating Tax Revenue Impacts

The tax revenue contributions to the federal, provincial, and municipal levels of government that are associated with airport operations are also estimated. This includes taxes paid by employers and employees (such as payroll taxes), passengers (such as sales taxes on expenditures), and Billy Bishop Toronto City Airport (such as property tax). Tax rates for 2016 are used in the analysis.

[18] One full-time equivalent job is equivalent to 1,832 hours of work. See **Appendix C** for a detailed calculation of the number of hours per full-time equivalent job. Person years are the same as full time equivalents (FTEs).

3 Economic Impact of Billy Bishop Toronto City Airport

SUMMARY

- Annual operations at BBTCA support 2,080 direct jobs, 1,950 direct FTEs, and $130 million in direct wages
- Indirect employment impacts of BBTCA include 1,670 indirect FTEs and $110 million in indirect wages across the province
- Induced employment impacts of BBTCA include 830 induced FTEs and $40 million in induced wages across the province
- Annual tax contributions of BBTCA amount to over $90 million
- Total employment impacts of BBTCA include 4,740 jobs or 4,450 FTEs and $280 million in wages across the province

3.1 Direct Economic Impacts

This section describes the total employment, in terms of both jobs and FTEs or person years of employment, and estimated payroll attributable to employers directly related to ongoing operations at Billy Bishop Toronto City Airport.

This section also examines the employment due to ongoing operations at BBTCA in more detail. FTEs or person years of employment are broken down by:

- Full-time versus part-time and seasonal employment; and
- Employment by industry.

Through its business and commercial activities and operations, Billy Bishop Toronto City Airport contributes directly to employment and the economy in Toronto and area. It also acts as an economic catalyst, facilitating the growth of regional businesses and industrial sectors. Every arrival of a flight at BBTCA generates employment hours for individuals with jobs involved in handling passengers, their baggage, cargo and the aircraft. This employment includes customer service, airline crew, ground handling, cleaning, maintenance functions etc. It also includes some overhead labour (e.g., clerical and administrative staff), and the associated employment of ground transportation firms and accommodation providers that service passengers of the airport. The direct impacts are the employment generated largely within the aviation sector associated with the operating and servicing of air services.

Direct employment related to ongoing operations at BBTCA amounts to 2,080 direct jobs. After adjusting for part-time and seasonal employment, the 2,080 jobs equate to 1,950 FTEs or person years of direct employment.

Direct employment at BBTCA and related firms receive an estimated $130 million in wages, providing an average of $65,940 per FTE. This compares to the average national wage of $47,800 per FTE, per annum.[19] Direct employment figures are summarized in **Figure 3-1** for employment, wages, GDP and output.

In addition to employment and wages, the airport directly contributes a $190 million to direct provincial GDP and over $670 million in direct economic output.

Figure 3-1:
Direct Employment and Income at Billy Bishop Toronto City Airport, 2017

Impact	Employment		Wages ($ Millions)	GDP ($ Millions)	Output ($ Millions)
	Jobs	FTEs			
Direct	2,080	1,950	130	190	670

Note: Employment figures (jobs and FTEs) are rounded to the nearest ten. Dollar figures (wages) are rounded to the nearest million.

3.1.1 Direct Full-Time, Part-Time and Seasonal Employment

A total of 2,080 direct jobs or 1,950 FTEs are attributable to Billy Bishop Toronto City Airport operations and other airport related businesses. Based on information provided by the survey of employers, 98% of the jobs are permanent jobs while seasonal employment represented 2% of jobs. Approximately 85% of all direct jobs (or 92% of all direct FTEs) are full-time positions. This demonstrates that BBTCA and its related businesses are a source of stable, year-round employment.

[19] Based on Statistics Canada's data on average hourly wages, and assuming 1 FTE = 1,832 hours. (http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/labr69j-eng.htm);(http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/labr69a-eng.htm)

Figure 3-2:
Permanent versus Seasonal Employment at Billy Bishop Toronto City Airport, 2017

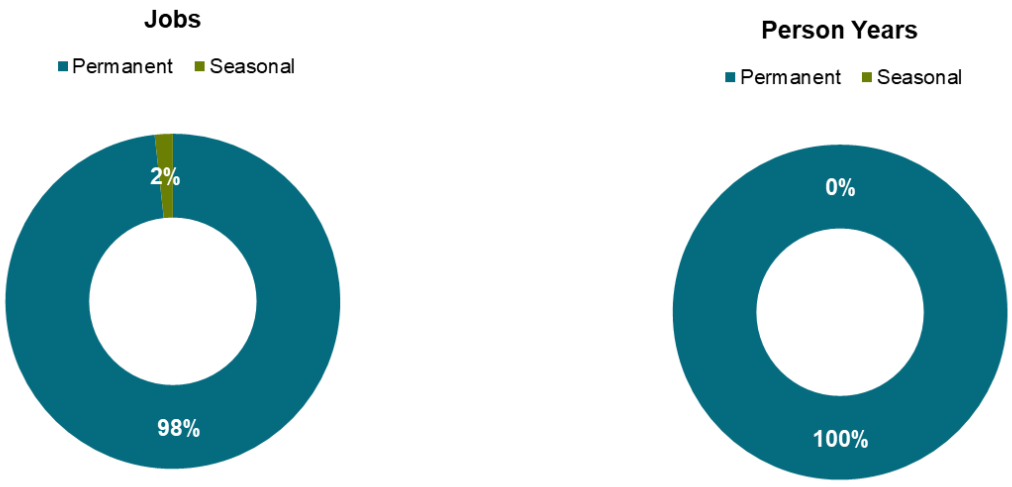
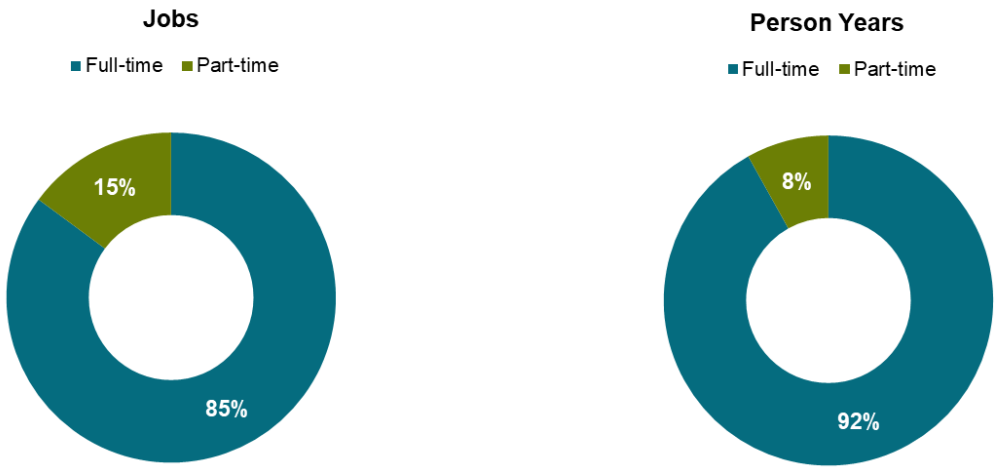


Figure 3-3:
Full-Time Versus Part-Time Employment at Billy Bishop Toronto City Airport, 2017



3.1.2 Direct Employment by Business Category

Billy Bishop Toronto City Airport is a source of a wide variety of business types operating at the airport. The largest share of direct jobs is attributed to the air carriers. A breakdown of direct employment at BBTCA by business category is illustrated in **Figure 3-4**.

- **Air Carriers** include the airlines, helicopter services, air taxi and charter air services, makes up 1,379 jobs or 67% of the total employment base at BBTCA.
- **Ground Transportation** employment accounts for 230 jobs or 11% of direct employment at BBTCA. These jobs support the transport of passengers to/from BBTCA to utilise air services offered.
- **Ports Toronto** employs over 70 jobs or nearly 4% of the direct employment at the airport.
- **Support Activities for Aviation** include the FBO and air traffic control services make up 72 jobs or 4% of direct employment at BBTCA.
- **Hotel and Car Rental** businesses support a further 53 jobs (3% of direct employment) and 27 jobs (1% of direct employment), respectively.
- **Airport Concession** businesses amount to a total of 15 jobs in total.

Figure 3-4:
Direct Employment by Occupation at Billy Bishop Toronto City Airport, 2017

3.2 Indirect and Induced Economic Impact

The previous sections discussed how direct employment related to ongoing operations at Billy Bishop Toronto City Airport was measured. However, the employment impact of the airport does not end there, as other sectors of the economy are dependent on these employers' businesses. Indirect employment is generated by suppliers to the businesses directly related to the airport. In addition, there may be additional impacts to the province-wide economy when direct (and indirect) employees spend their wages. These employment effects are referred to as induced employment. Total employment impacts therefore equal the sum of direct, indirect and induced effects.

The indirect and induced effects have been calculated using Statistics Canada economic multipliers and ratios for Ontario from the Interprovincial Input-Output model for 2013, the most recent available.[20]

[20] The multipliers used for the analysis are based on Statistics Canada economic multipliers for Ontario from the 2013 Interprovincial Input-Output model, the most recent available at the time of this study. These multipliers were updated with Consumer Price Indices to account for inflation. See **Appendix G** for more information on the Statistics Canada Multipliers used in this analysis.

3.2.1 Economic Multiplier Limitations

Multiplier impacts must be interpreted with caution since they may be illusory when the economy experiences high employment and output near industry capacity. When they are reported, it is recommended that the reader be reminded of the limitations on the use of multipliers. Mindful of these limitations, this study has undertaken multiplier analysis to estimate indirect and induced employment, noting that these impacts have not been directly measured by the surveys conducted as part of the study.

The economic multipliers are derived from the Statistics Canada economic multipliers for Ontario from the 2013 Interprovincial Input-Output model, the most recent version available.

3.2.2 Indirect Impacts

Indirect impacts are generated by industries that provide or supply services to firms located onsite at BBTCA. Based on the analysis of the employer survey results and the application of economic multipliers, it is estimated that 1,670 *indirect* FTEs are associated with ongoing operations at BBTCA in 2017. This suggests that 1,670 FTEs are indirectly generated in industries that supply the businesses at the airport. The labour income associated with the indirect employment is estimated at $110 million annually. The *indirect* GDP contribution is $190 million alongside an *indirect* economic output of $350 million on an annual basis.

3.2.3 Induced Impacts

Induced impacts are produced because of expenditures by individuals employed directly and indirectly by airport businesses. It represents the demand for goods and services generated by wage earnings from direct economic activity at the airport. *Induced* employment attributable to BBTCA is estimated at 830 FTEs, which is associated with *induced* labour earnings totalling $40 million. The *induced* GDP contribution sums to $90 million, with an economic output of $150 million.

3.3 Total Ontario Impacts

Ongoing Billy Bishop Toronto City Airport operations, including induced and indirect effects, support 4,740 total jobs (equivalent to 4,450 FTEs), and $280 million in wages across the province. Including multiplier effects, operations at the airport support $470 million in total GDP and $1.1 billion in total economic output contributions.

Figure 3-5:
Annual Total Ongoing Economic Impact of Billy Bishop Toronto City Airport Operations, 2017

Impact	Employment		Wages ($ Millions)	GDP ($ Millions)	Output ($ Millions)
	Jobs	FTEs			
Direct	2,080	1,950	130	190	670
Indirect	1,780	1,670	110	190	350
Induced	880	830	40	90	150
Total	**4,740**	**4,450**	**280**	**470**	**1,170**

Note: Totals may not add up due to rounding.

3.4 Tax Revenue Impacts

This section documents the current contribution to government revenues resulting from current operations at Billy Bishop Toronto City Airport and associated economic activity. This includes revenues received by federal, provincial and municipal governments.[21]

Revenue contributions are divided into three groups, based on who is making the payment:

- ***Taxes paid airport employers and employees***. These are taxes paid by airport employers and employees. They include income and payroll taxes, social insurance contributions (such as employment insurance premiums) and the federal and provincial fuel taxes.
- ***Taxes paid by passengers***. Visitors pay various taxes and fees. For example, these include taxes on personal expenditures at BBTCA such as taxes on food and beverages, as well as the Airport Improvement Fee (AIF).
- **Taxes and Payment-In-Lieu Taxes paid by Ports Toronto.** BBTCA pays taxes in the form of property taxes. Government revenues paid by Ports Toronto also include the Gross Revenue Charge and Payments-in-Lieu of Taxes (PILT).

For each category, taxes paid to the federal, provincial and local levels of government are separately identified.[22]

[21] Taxation impacts are based on 2016 tax rates.

[22] For the most part, this study **estimates** (some tax envelopes were measured directly, e.g., tenant property taxes) taxes paid from information on the passengers, employers and employees at the airport. In a few situations, such as the corporate income tax paid by employers, an approximate method was used to estimate taxes paid. In every case conservative methods were used. No major tax has been excluded.

The purpose of this section is to present the tax revenue contributions resulting from the activity attributable to Billy Bishop Toronto City Airport. As with all such studies, a conceptual decision has to be made as to how broad a definition of *economic activity* should be used in measuring the impacts. For this study, a relatively narrow definition has been taken, for example, the following have **not** been included:

- Taxes associated with indirect or induced employment (i.e. multiplier effects).
- Consumption taxes (e.g., GST) paid by airport employees when they spend their income.
- Excise or import taxes on cargo.
- Taxes paid by airport users outside of the airport.

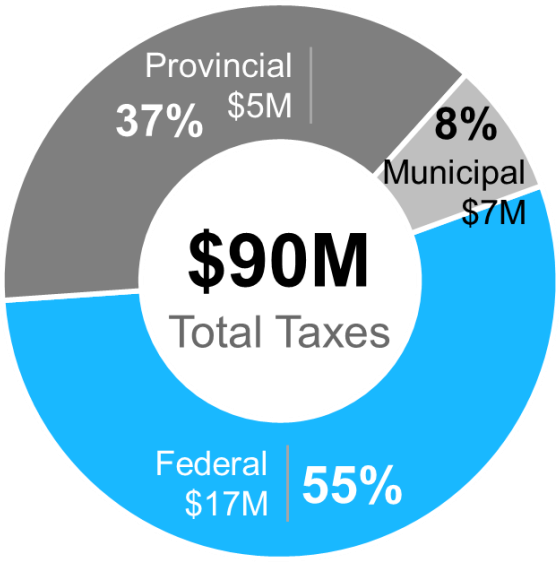
It would be exceedingly complex to broaden the scope of the tax base in this analysis to include taxes generated by indirect and induced employment. The level of detail collected on direct employment by the survey is critical to the analysis while such information is not available for the indirect and induced employment. This being the case, impacts and speculation about the general economy would be complex and averages would not necessarily be precise or accurate. Therefore, the tax analysis in this report is limited to revenues attributable to direct employment only.

3.5 Tax Contributions by Level of Government

Ongoing economic activity at Billy Bishop Toronto City Airport generates tax revenue for all levels of government. In 2016, total tax contributions from BBTCA related *direct* employment to all levels of government were approximately $90 million. **Figure 3-6** provides a rounded breakdown of tax impacts by level of government.

- The federal government was the largest recipient of tax revenue, receiving $49 million (55% of total tax revenue impacts). The vast majority of that total is attributable to taxes paid by employers and employees such as income tax, corporate income tax, CPP contributions, and the like.
- The provincial government received approximately $34 million (37% of total tax revenue impacts). This total is from income taxes, contributions to health insurance, and the Provincial portion of the GST paid by passengers.
- The municipal governments collected nearly $7 million in tax revenue (8% of total tax revenue impacts) in the form of property taxes from tenants or Ports Toronto.

Figure 3-6:
Annual Estimated Tax Revenues of Billy Bishop Toronto City Airport by Level of Government



3.6 Summary of Tax Contributions by Taxpayer

Ongoing economic activity at Billy Bishop Toronto City Airport generates tax revenue from different tax payers, as summarized in **Figure 3-7** below.

Figure 3-7:
Annual Estimated Tax Contributions by Taxpayer at Billy Bishop Toronto City Airport ($ millions)

Taxpayer	Federal	Provincial	Municipal	Total
Passengers	$11.1	$13.5	$0	$24.6
Ports Toronto and Other Airport Employers/Employees	$38.1	$20.2	$7.1	$65.4
Total	**$49.2**	**$33.7**	**$7.1**	**$90.0**

3.7 One-Time Economic Impact of Capital Expenditures

Section to come, when base data received.

4 Summary of Results

4.1 Economic Impacts

The ongoing operations at Billy Bishop Toronto City Airport support a total of 4,740 FTEs or person years of employment in the province, including multiplier impacts. Of this total employment figure, 1,950 FTEs are attributable to *direct* employment located onsite at the airport. As jobs related to the airport extend far beyond its boundaries, the bottom line total also includes 1,670 FTEs of *indirect* employment and 830 FTEs of *induced* employment.

The *direct* employment associated with annual ongoing operations at Billy Bishop Toronto City Airport grew slightly to 1,950 FTEs in 2017 from 1,860 FTEs in 2014, resulting in approximately 5% growth in employment overall.

The provincial economy benefits significantly from the day-to-day operations of Billy Bishop Toronto City Airport. Annually, the airport contributes an estimated total of $470 million in GDP, alongside an estimated $1.1 billion in economic output. All impacts relating to employment, wages, GDP and output are illustrated in **Figure 4-1**.

Figure 4-1:
Total Economic Impacts of Billy Bishop Toronto City Airport Operations in 2017

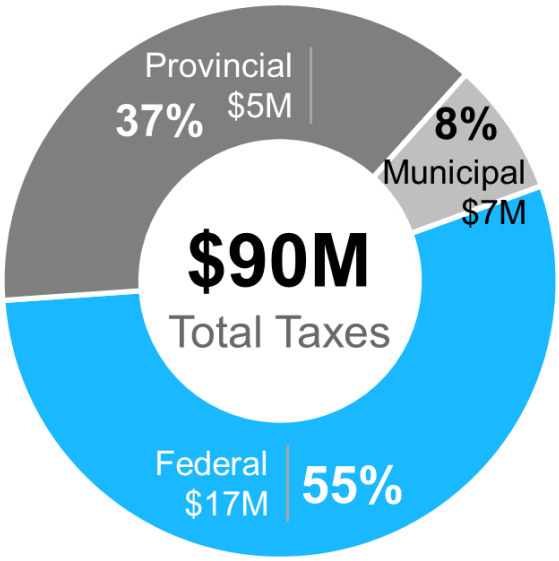
Impact	Employment		Wages ($ Millions)	GDP ($ Millions)	Output ($ Millions)
	Jobs	FTEs			
Direct	2,080	1,950	130	190	670
Indirect	1,780	1,670	110	190	350
Induced	880	830	40	90	150
Total	**4,740**	**4,450**	**280**	**470**	**1,170**

Note: Totals may not add up due to rounding.

4.2 Tax Revenue Impacts

Billy Bishop Toronto City Airport generates considerable tax revenues across all levels of government. On an annual basis an estimated $90 million in tax is contributed by airport employers, employees and passengers. A large portion of the tax generated accrues to the federal government (55%), with 37% attributable to the province, and the remaining 8% to the municipalities. The breakdown of these earnings is highlighted in **Figure 4-2**.

Figure 4-2:
Annual Estimated Tax Revenues of Billy Bishop Toronto City Airport by Level of Government



4.3 One-Time Economic Impact of Capital Expenditures

Section to come, when base data received.

Appendix A: Employment Survey

Questionnaire Design

The basic questionnaire was designed to obtain information, and to be as clear and easy to understand as possible for respondent firms. The basic questionnaire provided to airport tenants contained questions in the following areas:

General Information

- Name of firm, address
- Contact person's name and title
- Phone and fax numbers
- Email and website address
- Principal business activity

Total Employment Numbers

- % Business related to YTZ and % Business related air cargo
- Total employees (2017)
- Number of on-site employees
- Number of off-site employees
- Potential future employment levels in 2017

Part-time and Full-time Employment

- Full-time permanent employees
- Part-time permanent employees
- Full-time seasonal employees
- Part-time seasonal employees
- Average hours and weeks for part-time and seasonal employees

Payroll and Wage

- Total payroll excluding benefits; or
- Average wage per employee

Employment by Occupation

- A selection of job trades was provided to categorize employment

Outsourcing and Contracting Out

- Number of individuals on contract
- Average hours and weeks for individuals on contract
- Number and names of firms on contract
- Average annual hours for firms on contract

Property Taxes & Other Taxes

- Total property taxes paid (2016)
- Other federal and provincial taxes paid (2016), if applicable

Conducting the Survey

The survey was mailed out electronically by Inter*VISTAS* Consulting, with a cover letter from Ports Toronto. The letter explained the purpose of the study, the confidentiality of responses and encouraged members of the airport business community to participate.

Following the initial electronic mail-out of the surveys and throughout the following weeks, non-responding firms were contacted by telephone to follow-up on the completion of the survey. BBTCA staff coordinated with Inter*VISTAS* to handle the follow-ups. In some cases, BBTCA staff made site visits to various tenants to encourage responses. Firms were encouraged to return the survey and new copies were offered if the originals were lost. The replacement surveys were emailed once again. Some survey responses were collected via a telephone interview with firms.

Appendix B: Sample Survey

BILLY BISHOP TORONTO CITY AIRPORT

Toronto – Billy Bishop Toronto City Airport
Air Carrier Employment Survey May 2017

The figures you provide in the following sections are **strictly confidential**. Only aggregate survey totals will be published in the final report.

Please complete this survey as soon as possible.

For the purposes of this study, it is important that the figures you provide are as accurate as possible. However, where it is not possible to provide precise information, we would appreciate estimates rather than no response at all. When answering the questions below regarding your business, please include all related subsidiary businesses.

Name of Company: _____

Address of Company: _____

Contact Person: _____ Phone number: _____

Email: _____

Q1. Principal Business Activity

Please indicate your principal business activity. If you are involved in more than one of the business types below, please choose the one that best describes your business (i.e., contributes the largest proportion of revenues).

Air Carriers

- ☐ 1. Scheduled Canadian Carrier
- ☐ 2. Scheduled Non-Canadian Carrier
- ☐ 3. Charter Carrier
- ☐ 4. Helicopter
- ☐ 5. Air Taxi
- ☐ 6. Cargo Carrier
- ☐ 7. Courier / Integrator
- ☐ 8. Other: _____

Other Business Types

- ☐ 9. Airport Operator
- ☐ 10. Freight Forwarder, Cargo Agent, etc.
- ☐ 11. Warehousing
- ☐ 12. Customs Broker
- ☐ 13. Aircraft Maintenance, Repair and Overhaul
- ☐ 14. Airport Ground Handler
- ☐ 15. Fuelling Company
- ☐ 16. Fixed Base Operator
- ☐ 17. Aircraft Parts Supplier
- ☐ 18. Aviation Related Manufacturing
- ☐ 19. Aviation Related Training
- ☐ 20. In-flight Catering Company
- ☐ 21. Security Services
- ☐ 22. Airport Retail Outlet, Restaurant, etc.
- ☐ 23. Government Agency/Department
- ☐ 24. Car Rental
- ☐ 25. Taxi, Bus, Limousine, Shuttle
- ☐ 26. Hotel
- ☐ 27. Other: _____

Q2. Business Related to Billy Bishop Toronto City Airport (YTZ)

Please estimate the proportion of your company's business revenues that is related to activities at Billy Bishop Toronto City Airport (YTZ).

For example, a freight forwarder or customs broker might attribute only 20%, as that is the proportion of their business that involves shipping out of YTZ (the other 80% of their business uses truck or rail for carriage of shipments to other exit and entry points). ***Alternatively, if your firm is located onsite at YTZ or if your firm's existence is completely dependent on YTZ's operations, please indicate a 100% relationship.***

Airport	% Related Business Revenue (2016)
YTZ	%

Q3. Employment at Your Company Related to YTZ

Please provide the number of **permanent & seasonal** staff currently employed by your company. Please only report employees involved with operations related to Billy Bishop Toronto City Airport. This should include employees both on-site at Billy Bishop Toronto City Airport and off-site (**only** where off-site employees are involved with **directly** providing service to Billy Bishop Toronto City Airport, e.g. catering employees at an off-site location). ***Airlines only: for pilots and flight crew, please report their employment figures only if they are based at Billy Bishop Toronto City Airport.***

Please break down the employment into permanent, seasonal, full-time and part-time. *This should not include employment for work done on contract.*

Location	PERMANENT EMPLOYEES		SEASONAL EMPLOYEES	
	Full-Time	Part-Time	Full-Time	Part-Time
YTZ				
Off-Site				

Please indicate how many hours per week **part-time employees** work ***on average***.

	Number of Weeks per Year	Number of Weekly Hours
Part-time Employees		

For **seasonal employees** in general, please indicate how many weeks per year and how many hours per week **seasonal employees** worked ***on average***.

	Number of Weeks per Year	Number of Weekly Hours
Seasonal Employees		

BILLY BISHOP TORONTO CITY AIRPORT

Toronto – Billy Bishop Toronto City Airport
Air Carrier Employment Survey May 2017

Q4. Payroll and Wages

Please state the current total gross payroll paid by your company, i.e. as of May 2017, for the employees included in the question regarding **Employment at Your Company Related to YTZ**.

This figure should include all full-time, part-time and seasonal employees. If you are unable to estimate current payroll, please provide figures for your last financial period, and indicate which period that was.

Total Payroll (as of May 2017):	$
Financial Period *(if not 2017)*:	

Note: Total payroll includes gross (pre-tax) wages or salaries, including overtime pay, commissions, allowances and bonuses.

Alternatively, if you are unable to answer this question, please provide an estimate of the average annual wage/salary **per employee** (including overtime pay, commissions, allowances and bonuses), or select one of the options below.

Average Annual Salary/Wage per Employee: $ _____ per annum.

Or: Estimate of the average annual salary range per employee

- ☐ Less than $20,000
- ☐ $20,000 - $39,999
- ☐ $40,000 - $59,999
- ☐ $60,000 - $79,999
- ☐ $80,000 - $99,999
- ☐ $100,000 or more

Q5. Employment by Occupation

Please estimate the number of employees included in Question 3 that are in the following occupation categories.

The figures entered below should sum to the same total as Question 3.

Employment by Occupation		Number of Employees
General	Managerial/Supervisory	
	Administrative & Clerical	
	Craft Trades (Electricians, Steam Fitters, etc.)	
Airline & Airline Servicing Trades	Pilots	
	Flight Attendants	
	Aircraft & Vehicle Mechanics	
	Customer Service Agents	
	Aircraft Servicing	
Support Trades	Security Guards	
	Drivers / Delivery / Couriers	
	Call Center / Reservations/Dispatchers	
	Food Service Workers	

Other (Please specify)		

Q6. Outsourcing and Contracting Out

Since we do not want to exclude any employment from the airport, we would like you to briefly comment on whether your firm contracts out any important services.

Individuals on Contract: If you pay some individuals through a contract, as opposed to through payroll, please indicate the number of such employees, how many hours per week worked, as well as how many weeks worked per year, on average.

	Number of Contract Employees	Number of Weeks per Year	Number of Weekly Hours
Contract Employees			

Firms on Contract: If you outsource or contract out any work to other companies (e.g., cleaning services, IT, ground handling, etc.), please complete the following table, indicating the functions you outsource to third party companies, and provide an estimate of the total contracted hours of work per annum. Also, please specify the company's name(s) and indicate whether they are located at the airport (i.e. located on-site). This will allow us to avoid any double counting of work performed by other companies which may also be surveyed as a part of this study.

Function	Name of Firm	Located On-site? (Check if Yes)	Number of Hours Performed by the Company in 2016
Example: Cleaning services	*Spic and Span Cleaners*	☐	*100 hours per year (2 hours per week)*
		☐	
		☐	
		☐	

BILLY BISHOP TORONTO CITY AIRPORT **Toronto – Billy Bishop Toronto City Airport**
General Employment Survey May 2017

Q7. Future Employment

We would like to be able to estimate forecasted employment levels for the end of 2017. Please help us by indicating the number or proportion of additional employees your firm plans to hire at YTZ by the end of 2017, over and above your current employment.

	Increase	Decrease	Unchanged	Number of Additional Employees
Additional Employment (2017) *Estimated New Employees since May 2017*	☐	☐	☐	

Alternatively, if you are unable to answer this question, please provide an **estimated percentage growth in employment** in 2017.

% Anticipated Growth in Workforce in 2017	%

Q8. Business Revenue Related to Air Cargo

We would like to be able to document the impact of air cargo services. Please help us by indicating the proportion of your business revenues that is related to servicing air cargo at YTZ.

% Business Revenue Related to Air Cargo (2017):	%

Note: The percentage entered should be the same or less than that entered in Question 2.

Q9. Provincial & Local Taxes

Please indicate the amount of property and/or other provincial and municipal taxes paid by your firm in Ontario in 2016.

Property Taxes Paid in Ontario (2016):	$
Other Provincial & Municipal Taxes (2016):	$

BILLY BISHOP TORONTO CITY AIRPORT **Toronto – Billy Bishop Toronto City Airport**
General Employment Survey May 2017

Additional Comments

Please use the space below to provide any additional comments.

Additional Comments

Thank you.

Please enter your responses to this questionnaire online at:

http://intervistas.ytz-economic-impact-study-employment-survey.sqizmo.com/s3/

If you have any questions, please call
Doris Mak / Kathryn Tooley at 1-877-717-6246.

Appendix C: Calculation of Full-Time Equivalent or Person Years of Employment

The following are details of calculations for the average number of hours per full-time equivalent (FTE) or person year of employment.

Table C-1:
Full-time Equivalent Hours per Year

Calculation of FTE hours per year:

	365	days per year
Less:	(104)	weekend days
	(11)	legal holidays
	(15)	average vacation days
	(6)	sick leave
	229	days per person year
	* 8	hours per work day

1,832 hours per person year

Workdays vary anywhere from 6.5 to 8 hours; however, in order to be conservative, an 8 hour workday was assumed.[23] Similarly, numbers of vacation and sick leave days may also vary.

[23] Essentially, we are using a measure of paid hours per year. Using a measure of productive hours per year with 6.5 hour workdays (8 hours less 1 hour for lunch less two 15 minute work breaks) would give 1,489 hours per person year. Using this lower figure would result in inferring a greater number of FTEs from seasonal and part-time jobs. Using the 1,832 figure, we infer a lower number of FTEs.

Appendix D: Inferred Employment

For the very few non-respondents encountered during the survey phase, statistical inferences had to be made regarding the employment levels.

As a general rule of thumb, Inter*VISTAS'* approach bases inferred estimates provided by respondents for each business type, and validates this information with publically available sources of data.

The employment data in this report was compiled from two sources:

1. Employment reported by employers on surveys submitted to Inter*VISTAS*.

2. Employment inferred for employers who did not provide a survey response. Inferred employment was based on employment information from those firms in each business type that did respond to the survey. The mean employment of respondents in each business type was calculated, excluding outliers, and then conservatively adjusted downwards. For instance, those firms with especially large employment levels were excluded from the "mean without outliers" to obtain conservative results. This "adjusted mean" employment for each business type was then applied to those firms who did not respond to the survey.

Appendix E: Contract Employment

Some firms contract out services that they do not have expertise in providing or when there are cost advantages to doing so. For example, many airport firms contract out janitorial and/or general maintenance services. The employment survey asked firms to identify whether they contracted out some of their work, and to estimate the number of annual hours involved.

Contract work was separated into two distinct categories in the employment survey: 1) individual "employees" paid through a contract, rather than via payroll, and 2) contracting out services to other firms.

The employment results for individuals on contract were derived by counting the number of individual positions for the number of *jobs* and dividing the total hours of employment by 1,832 to estimate a FTE or one person year of employment. The employment results for firms on contract were derived by dividing the total hours of employment by 1,832 to estimate FTEs or person years.

Appendix F: Methodology using Economic Multipliers

Measurement of indirect and induced economic activity is difficult. While it might be possible to conduct a survey of such employers, the survey would need to cover thousands of firms for indirect employment. For induced employment, the entire provincial economy would need to be scrutinised. In addition to the time and financial resources needed to conduct such surveys, the quality of responses would be suspect.

As an alternative to costly and inaccurate surveys, indirect and induced effects are typically measured by the use of economic multipliers. Multipliers are derived from economic/ statistical/accounting models of the general economy.[24] They come in a variety of forms and differ greatly in definition and application. Thus, great care must be exercised in choosing the appropriate set of multipliers to use. In addition, the use of multiplier analysis is limited by a number of factors, these being:

- the accuracy of the structure and parameters of the underlying model;
- the level of unemployment in the economy;
- the assumption of constant returns to scale in production;
- the assumption that the economy's structure is static over time; and
- the assumption that there are no displacement effects.

Multiplier impacts must be interpreted with caution since they may be illusory when the economy experiences high employment and output near industry capacity. When they are reported, it is recommended that the reader be reminded of the limitations on the use of multipliers. Mindful of these limitations, this study has undertaken multiplier analysis to estimate indirect and induced employment.

[24] The multipliers used for the analysis are based on 2011 Alberta Treasury Board and Finance economic multipliers for Alberta, the most recent data available. These multipliers were updated with Consumer Price Indices to account for inflation.

Appendix G: Tax Revenues Attributable to Airport Employers

{to come]

Appendix H: Tax Revenues Attributable to Airport Users

{to come]

Appendix I: Glossary of Terms

Air Traveller Security Charge (ATSC): A fee collected by the Federal Government from air travellers to help fund security improvements at Canadian airports. The fee varies by region of travel and is charged to the passenger per enplanement.

Contract Work: Any work which is done for a company by an individual who is not on the payroll or work done for a company by another company. Generally speaking, firms will contract out work in areas in which they do not have expertise or when there are cost advantages to doing so.

Direct Employment: Direct employment is employment that can be directly attributable to the operations in an industry, firm, etc. It is literally a head count of those people who work in a sector of the economy. In the case of the airport, all of those people who work on airport property and in an aviation related capacity would be considered direct employment.

Economic Activity: (also Output, Production) The end product of transforming inputs into goods. The end product does not necessarily have to be a tangible good (for example, knowledge), nor does it have to create utility (for example, pollution). Or, more generally, the process of transforming the factors of production into goods and services desired for consumption.

Economic Output: (also Economic Activity, Production) The end product of transforming inputs into goods. The end product does not necessarily have to be a tangible good (for example, knowledge), nor does it have to create utility (for example, pollution). Or, more generally, it is defined as the process of transforming the factors of production into goods and services desired for consumption.

Employment Impact: Employment impact analysis determines the economic impact of employment in terms of jobs created and salaries and wages paid out. In the case of the airport, the direct, indirect, induced and total number of jobs or person years created at the airport is examined to produce a snapshot of airport operations.

Full Time Equivalent (FTE): (also Person Year) One full time equivalent (FTE) year of employment is equivalent to the number of hours that an individual would work on a full time basis for one year. In this study we have calculated one full time equivalent year to be equivalent to 1,832 hours. Full time equivalent years are useful because part time and seasonal workers do not account for one full time job.[25]

GDP: (also value-added) A measure of the value added by labour and capital services used to produce final goods and services, as a result of economic activity in the nation. This measure is net of the value of intermediate goods and services used up to produce the final goods and services.

Ground Transportation: Ground Transportation at the airport includes any vehicles which transport passengers from the airport to the cities or from the cities to the airport. This would include taxicab service, limousine service and hotel van service. Valet services as well as skycaps are included in this category.

Indirect Employment: Indirect employment is employment which results because of direct employment. For the airport, it would include that portion of employment in supplier industries which are dependent on sales to the air transport sector. In some cases, contract work would be considered indirect employment.

[25] *The Dictionary of Modern Economics*, David W. Pearce, General Editor, The MIT Press, Cambridge Mass.,1984

Induced Employment: Induced employment is employment created because of expenditures by direct and indirect employees.

Multiplier Analysis: Analysis using economic multipliers in which indirect and induced economic impacts is quantified. Essentially, a multiplier number is applied to the "directly traceable economic impact" to produce indirect and total effects (see Multiplier.)

Multiplier: Economic multipliers are used to infer indirect and induced effects from a particular sector of the economy. They come in a variety of forms and differ in definition and application. A multiplier is a number which would be multiplied by direct effects in order to calculate indirect or induced effects. In the case of the airport, as in many other cases, multipliers can lead to illusory results, and thus must be used with great care.

Airport Improvement Fee (AIF): A fee collected by the airport authority from passengers to help with funding capital improvements at the airport. In some regions of Canada, this is also referred to as the Passenger Facility Charge (PFC).

Seasonality: Seasonality results when the supply and demand for a good is directly related to the season in which is consumed. For example, ski resorts experience changes in net income as a result of seasonality. Airports and airport services also experience seasonality as a result of vacation times for families (typically during the summer) and/or temperatures abroad (typically at Christmas time). As a result of seasonality in demand for flights, some air carriers increase frequency of flights to certain areas during the busy season.

Tenant: A firm which pays a lease to a leasing company or to the airport authority directly.

Value-Added: (also GDP) A measure of the money value of final goods and services produced as a result of economic activity in the nation. This measure is net of the value of intermediate goods and services used up to produce the final goods and services.

Prepared by

Inter*VISTAS* Consulting Inc.

Airport Square – Suite 550
1200 West 73rd Avenue
Vancouver, BC
Canada V6P 6G5

Telephone: +1-604-717-1800
Facsimile: +1-604-717-1818

www.intervistas.com